

The Analysis of Climatological Abnormalities Influencing on Desertification Process in Khezer Abad Region of Yazd

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Extended abstract

1- Introduction

Iran is one of the arid countries in second world arid continent means Asia. The average of world annual rain is almost 860 millimeter. While this number in our country is almost 250 millimeter and in Yazd province is almost 61.2 millimeter that means less of $\frac{1}{4}$ average Iran's rain and less of $\frac{1}{4}$ average world rain .of course, this amount in consecutive years wouldn't access in steady process and this irregularity in frame work of arid and torrential rains cause wore damage to human and physical environment relative to quantity.

Yazd province as a third province content of critic focus for windy erosion after Kerman and Khorasan for reason of region abnormality such as decreasing rainfall and increasing temperature

Severely involved with this phenomenon and desert consecutive such as subsidence of underground water sources. Thus it is necessary satiable program which in this way could control one of the biggest obstacles developments.

2- Methodology

The first step for performing this study has been field survey of limitation for study and acquaintance with public features and intervention of each one of these environmental and human factors. The second step has identified selection of climate station proportional with local region feature for using of necessary static which could identified by way of analysis and dissolving in form of library effective region abnormality for desertification process and thus scheduled with regard to existing condition, for showing quantity of climate alternation which indicate real quality and effect on the earth, Long statistics of Yazd synoptic station as studying basic have used and in a period of 50 years and dissolved .

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In this article for identifying region desertification degree alteration and comparison time series of desertification have been used process selyaninov method.

$$\sum P / (0.1 * \sum H)$$

Which in this formula:

$\sum p$ = Total amount of Rain according to centimeter in time period which in it the average of temperature is higher than 10c°

$\sum H$ = Gathering amount of heat degree in the same time period to Celsius

The border of desert condition is 0.5 (Ali zadeh, 1382, 233).

3- Discussion

3-1- Humid abnormality

Studying 50 years rain in Yazd synoptic station has been 28 years means near to 56 percent years, less rain of annual average. Thoughtful point between 50 years rain statistical data using in this survey have seen 4 years rain higher than 100 millimeter. The annual average of rain decrease 61.2 to 56.83 millimeter, if ignore it in accounts. On the other hand 4 years heavy rain has allocated 7.2 percent of rain 50 years of area. in other words 99.5 millimeter of rainy scope alternation is between minimum 18.9 millimeter and maximum 118.4 millimeter in duration indicate vacillation and saver irregularity in process of annual rain and features of dried areas of rain . The process of annual rain with average 61.2 millimeter in statistic period is content of slow decreasing route. Decreasing process of this change relative to average in recent years identify forming of dried slow process and desertification resulting rainy shortage.

Winter season including 48 percent of annual rain is accounted as the rainiest season with average 29.93 millimeter.

Spring season with allocating 40 percent of annual rain and average 25.11 taken into account as the second rating season in area. Autumn season with receipt 10 percent of local annual rain and with average 5.11 millimeter across period with summer with receipt 2 percent of rain and average 56 percent is reckoned two arid seasons. For this reason as a whole could knew content of two seasons semi- arid (winter and spring) and two seasons arid (summer and autumn). decreasing rainfall in recent 25 years and increasing number of rainy days in the same time period indicate this point that less rain in number of more days of distributed year and share of nature in effective rain relative to past.

3-2- Temperature abnormality

Studying the process of average temperature in 50 years time period described in figure 15 having speedy increased route with irregularity. In duration of surveying 22 years have seen temperature lees of average and 28 years higher than average. Increasing process of temperature is thoughtful as one of climatic elements effective in arid and in testifying unsuitable condition in damaged area. Surveying changes in high temperature records occurred in period of static 50 years with average 43.44 Celsius. Surveying process of temperature records minimum in two Celsius and alternation scope 4.6 degree between 41 to 45.6 Celsius. Surveying process of temperature records minimum in two consecutive statistical period 25 years , 1956 to 2005 in area indicate that in 25 years ending to 2005, this record, with average -7 Celsius have followed by increasing route. Increasing 2 degree of minimum temperatures indicate heating area in 25 recent years in the same

amount and providing Temperature condition in intensifying desertification.

3-3- Wind

The speed of wind in time period 50 years with average 5.1 m/s in hour and alternation scope 5.3 m/s between 2.9 and 8.2 m/s in hour having decreased slow process described in figure 22. Studying chart of wind speed show that in periods of arid with regard to increasing temperature and intensifying weather instability increased speed of wind and amount of it was higher than average and decreased in periods of annual wet. The main factor in decreasing route of average process in speed of wind has been in duration 50 years existence of one continuous annual wet between 1972 to 1992 in duration 20 years in area which has central role in decreasing speed of wind.

4- Conclusion

Increasing process of the number of rainy days despite of decreasing rainfall decreased effect of rain. on the other hand, surveying Comparison number of rainy days in two periods 25 years indicate this point that the number of rainy days in recent days relative to same period be for its increased almost 34% , while receipt rainfall in recent year show decreasing process, as in statistical period 1956 – 1980 the number of rainy days decreased and rainfall increased the number of rainy effect in recent days relative to past by reason of in care sing the number of rainy days has been intensified desert condition in area .

Speedy increasing process of average annual temperature and increasing changes in two periods of 25 years resulted that in recent 25 years temperature increased of 18.7 to 19.5 degree and near to 1 Celsius and in 8 years ending to 2005 none of annual

average temperature less of 20 degree. Increasing 1 degree have reminded average temperature in many cases as region changes and followed by it effect of other parameters connected to temperature, it is undeniable intensifying effective condition in desertification process.

In comparison with wind seed and annual rain could reached this point which in all arid period increased the speed of wind and in this way by slow transferring of humid of area on evaporation levels and increasing evaporation and on arid. With regard to decreasing route in recent 25 years and increasing route in speed of wind in the same period and located area in consecutive time period 9 years based on running mean 7 years the case of continuous gradually will increase arid of area as a clue of arid condition.

Key words: Desertification, Arid, region abnormality, khezr Abad.

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