



## ENVIRONMENTAL RISK FACTORS of flooding in Pakistan and compare it with the situation in Iran

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### ABSTRACT

*Considering the exponential growth of scientific, technical and industrial in different countries including European and American, and in some cases lack of attention to environmental issues and an infection caused by the above-mentioned activities can be seen that the bold and the significant role that these countries play in global environmental consequences. It is worth noting that countries in emissions play a significant role. As massive floods in Pakistan, fires in Russia, lethal heat in Japan and severe climate change in Canada and Western Europe, have all been the result of stopping the flow of the jet stream over these areas, undoubtedly, if the necessary measures are not done in this regard, Iran will also undergo such incidents. Of the main reasons for floods in Pakistan can be warming and rapid climate changes, and also stipulates if that trend continues, the remaining glaciers will be melt, Pakistan will face in the future with far more critical conditions. The causes of the devastating floods in Pakistan, is the growing industrialization in developed countries, which is the cause of largest environmental pollution to other countries as well. Despite all laws and international conventions signed and ratified by these countries on the prevention of environmental pollution that it follows universally damaging effects of continued lack of compliance control authorities and we are witnessing the non-compliance by authorities and always this non-compliance swiped third world countries that are developing in good coverage.*

**Keyword:**

environmental, flood, climatic conditions, jet stream

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## INTRODUCTION

Flood requires certain conditions and factors, the situation in Pakistan were provided with a large percentage. Now Iran is located in the arid and semi-arid region, seasonal rainfall, steep slopes of the Alborz and Zagros mountain unstable ecosystem ... is ready for flooding that if soil and water resources management, environment and ... are not more reactive than the status quo in this country, there will be floods in the future.

### 1-1- the conditions in Pakistan for the development of flood in August 2010

Of the main reasons for floods in Pakistan can be warming and rapid climate changes, and also stipulates if that trend continues, the remaining glaciers will be melt, Pakistan will face in the future with far more critical conditions. The causes of the devastating floods in Pakistan, is the growing industrialization in developed countries, which is the cause of largest environmental pollution to other countries as well. Despite all laws and international conventions signed and ratified by these countries on the prevention of environmental pollution that it follows universally damaging effects of continued lack of compliance control authorities and we are witnessing the non-compliance by



1-1 geographical map of Iran.

As massive floods in Pakistan, fires in Russia, lethal heat in Japan and severe climate change in Canada and Western Europe, have all been the result of stopping the flow of the jet stream over these areas, undoubtedly, if the necessary

#### A- growing industrialization in developed countries:

Considering the exponential growth of scientific, technical and industrial in different countries including European and American, and in some cases lack of attention to environmental issues and an infection caused by the above-mentioned activities can be seen that the bold and the significant role that these countries play in global environmental consequences. It is worth noting that countries in emissions play a significant role.

#### B- stopping the flow of the jet stream (jet stream change in movement patterns):

authorities and always this non-compliance swiped third world countries that are developing in good coverage.

### 2.1. Review Iranian status quo in floods

Increasing the number of floods in decades 1950s,1960s, 1970s and 1980s was 17, 51, 44 and 95 respectively that the figure in the first half of the seventies increased to 214 keep pace with the ever-increasing exploitation of northern forests. The 421 floods occurred from 1951 to 2001 nearly 74% is related to only the last twenty years (1961 to 2001). It is worth noting that northern forest area has decreased to 22 percent over the past 30 years that 17 percent of it is related to the last 20 years. Deadly floods gush in Golestan province and they are wider compared to Gilan and Mazandaran, suggests the increasing ratio of forest destruction and vegetation compared to the two provinces. Anyway, in temperate regions of the northern slopes of the Alborz Mountains because of the high humidity in the soil and saturation of the air pores and the increasing destruction of rainforests located in the area as well as severe monsoon rains, provides for the development of flood conditions in the region.

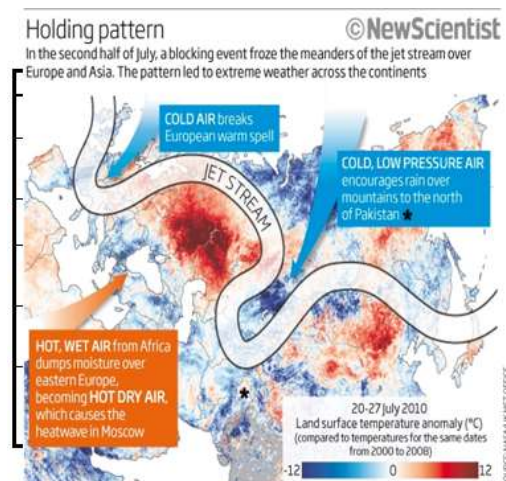
### 3.1. To Compare Iran and Pakistan in terms of environmental and climatic conditions



1-2 - geographical map of Pakistan.

measures are not done in this regard, Iran will also undergo such incidents.

### 4.1. To examine the causes of flood in different countries and regions of the world in comparison with the recent flooding in Pakistan



Meteorologists believe that the severe weather changes and torrential rains occurred due to changes in the movement pattern of the jet stream. The rapid flow of air exists at a

height of 7 to 12 km from the atmosphere and is moving from West to East, and shifts its direction alternatively by powerful waves and torsional waves from north to south that are called deposited waves. In recent weeks, visible changes have occurred in the normal flow of the jet stream. Studies show that air flow has been suspended always moving toward the East and moved with the climate system. This phenomenon is due to the strong deposited waves in the West which have stopped the flow of the jet stream in the East. In most cases, the flow of the jet stream is more powerful, but when the deposited waves have overcome, jet stream stops and this is the starting point of very unexpected weather conditions. This coincided with the onset of monsoon rains in Pakistan and have caused severe floods in the country. The factor can bring all of these things, is still unknown for meteorologists. Maybe greenhouse gas concentrations with the expansion of the high temperature areas cause the current problems or this all changed because of the reduction in the origin of the solar activity. There is evidence that show decreased solar activity during the summer can lead to change in jet stream flow. Late June and last July, the jet stream has been stopped over parts of Asia and continental Europe. The map above shows the climate change as a result of the interruption. Cold and low pressure flow over Pakistan intensified the monsoon rains. 9-year mean temperature difference is marked with red and blue light. Blue spectrum shows difference to the mean  $-12^{\circ}\text{C}$  and red range shows  $+12$  degrees.

Iran	Pakistan	Environmental and climatic conditions	Row
☒	☒	Being located in arid and semi arid belt of the Earth	۱
River based in the northern slopes of the Alborz	Indus River along the north-south to the length of 900 km.	How to establish the river flows	۲
In the northern parts of relatively dense	Scattered and incoherent	Vegetation of the area	۳
Monsoon rains in northern areas	Monsoon rains along the Indus River for 4 months	Atmospheric precipitation	۴
1648198 square kilometers (two times in Pakistan)	803 940 square kilometers	Geographic area	۵
78543632 people	159663429 persons (2 against Iran)	Population	۶

### 6-1- Recommendations

In order to prevent floods or to minimize damage, it is necessary:

- take action to prevent deforestation and desertification in flood prone areas of the country.
- Explain and understand the causes and origin of floods.
- Integrated flood management plan including how land use change and develop comprehensive flood program.
- Planting of trees and shrubs on the slopes.
- to prevent overgrazing in forests.
- How to steer clear stream and river routes with the lowest risk of floods.
- Using the experiences of national and international organizations in the field of forecasting and minimize the damage caused by the emergence of flood.
- The financial support of institutions and organizations (accident insurance) to compensate for damages.
- Extensive and coherent studies by international organizations.

### C- off-season rains (summer rainfall):

Monsoon rains valley usually in certain seasons of the year and there is a variable time period for this precipitation. From the evidence it appears that Pakistan seasonal rains have happened due in the off-season and in a shorter period of time that ecological ecosystem cannot cope with the atmospheric precipitation and resulting in massive flooding in Pakistan.

### 5-1- Conclusion

According to the documents and investigations and listed in the article mentioned, several factors contributed to the creation of Pakistan floods that universal effect is of the main reasons for the intensification of natural and unexpected disasters and environmental pollution around the world that reflect a lack of attention and applied management on environmental issues in all countries and in this particular case was in Pakistan. The important result of this treatise global partnership deal with environmental pollution that In this context, countries should be on implementing commitments and the provisions stipulated in international conventions (such as the Kyoto Protocol) and try their best to use. Another result of this article, there are geographical and climatic similarities between Iran and Pakistan that is not a far-fetched in the absence of sustainable management of natural resources such floods in our country.

- Forming an expert panel to review and identify risks of floods and river flooding.
- preventing anything from interfering with relevant organizations.
- Culture Promotion and public awareness on how to deal with natural disasters such as floods.

### References

1. Articles of the National Student Conference on soil and water resources in Shiraz - 2004
2. "The warming and rapidly changing climate is the main reason for Pakistan's flood." - AFP - 06/06/2010
3. The paper predicts and causes floods - green space and environment news of Iran 23/05/2010
4. Paper: "flood, global warming, forest and gasoline, which one is more important?" - The Environmental Watch Site of Iran.
5. "Review of the causes of the worsening flood in Iran" - Mohammad Khosravi shahi, 2008.

6. "The floods in Pakistan and fires Moscow has a common origin" - M. Hamidi - 05/21/2010.
7. "The prevalence of infectious diseases among flood victims in Pakistan – Aftab newspapers - 06/01/2010.
8. [www.civilica.com](http://www.civilica.com)