

Climate Change and Its Signs in Iran

(with Emphasis on the Need to Pay More Attention to the Conditions of Developing Countries)



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Sudden rainfalls and drought are two examples of the most noticeable fluctuations in Iran's climate, which seems to repeat and persist, indicating the occurrence of the phenomenon of "climate change" in Iran. This is not just happening in Iran, but it also occurs in neighboring countries. However, the crisis of climate change, as well as the unsustainable expansion of developing countries due to economic-political problems, is causing intensified environmental crises in these countries.

Although industrial development has brought progress, prosperity, comfort and convenience for human beings from several aspects, it has not only brought no achievements for the global environment, but has also become a factor in the destruction and distortion of the earth's order. The phenomenon of "Mechanization" from the 18th century made mankind a powerful force to gain the power of any kind of alteration on the earth, and made its own artifacts, including machinery, waste, garbage, polluted gases and other cases, spread to a large extent. This is where life in the environment was compromised.

Now, with more than two centuries of industrial domination over societies, climate change or global warming has become a global challenge and a major threat to the earth's environment, while according to experts from the field, the main reason is the increase in industrial activities of humans. The speed of human activities is so much that natural phenomena do not even

have the opportunity to "self-help" and their condition is getting worse every day. According to the experts in the field of geology, natural phenomena and climate have the power to self-regulate in normal conditions or recover and return to normal conditions in the case of any threats or getting out of the natural system. Increases in temperature, melting of polar ice, rising free water levels, and irregularities in climatic phenomena are among the most important consequences of climate change.

Some signs of climate change in Iran

The environment is not limited to borders, and all of the world's nations are linked to each other on the planet. Accordingly, Iran has suffered from climate change along with other countries of the world, and at the present the signs of climate change can be observed in Iran. So far, representatives of the Intergovernmental Panel on Climate Change (IPCC) from the World Meteorological Organization in Tehran have also described the negative consequences of the intensification of these phenomena for the future of Iran's economic and social development.

Increased atmospheric anomalies

Increasing atmospheric anomalies such as sudden rainfalls, severe storms, droughts and rising temperatures have been observed in some parts of Iran for several years. Snowfall in the southern and central cities of the country after 50 years, severe cold and hailstorms in the bloom season of trees, heavy rainfall in Mazandaran, Gilan, and other regions are some of the signs of irregularities in the country's climatic conditions. In general, sudden and heavy rain, heavy snowfall, very cold weather, snow in hot and dry regions, rain falls in wet and mountainous areas, the

average temperature rise of some cities in recent years can be considered as examples of significant changes in the climate in Iran.

Moreover, in recent years we have seen hard and destructive winters in the northern cities of Iran or experienced temperatures exceeding 40 degrees Celsius in mountainous cities; the phenomena which are considered unusual for these cities. Professor Kurdavani, an Iranian geographer approving the occurrence of fluctuations in the climate and pointing to the massive drought in Iran, has considered the emergence of these conditions as the result of extreme development in nature, among which the excessive digging of deep and semi-deep wells during 1961 and afterward could be mentioned.

What is certain is that the phenomenon of climate change in Iran has left significant impacts. Climatic abnormalities such as storms, long-term droughts and trends in temperature and rainfall variations in the country indicate the depth of the effects of climate change. In this regard, only sea level rise is not a sign of climate change, but in real terms, signs of this phenomenon can be observed all over the country.

Change in the country's rainfall pattern

The increasing number of deserts, the change of the country's precipitation patterns, the loss or decrease of the snow reserves of the mountainous and glacial areas, the increase in temperature and the decreasing trend of rainfall were clear and meaningful factors that indicate the occurrence of climate change all moving in the negative direction.

Iran's rainfall in the last 12 years has been lower than normal, and events such as depletion of Lake Urmia, Zayandehrood, Karkheh and Karoon rivers and the drying of some of the wetlands were in part related to drought, and in the other part, due to unsustainable development. Iran's rainfall has come to 166 mm since October 2017, which has dropped significantly compared with the same period last year. The latest figures recorded at the country's barometric stations indicate that the country's rainfall has reached 166 mm since October 2017 representing a decrease of 26.5 percent compared with the same period last year. Of the six main water basins of the country (Caspian Sea, Persian Gulf and Oman, Lake Urmia, Central plateau, eastern border, and Garagum), the Persian Gulf and Oman have had nearly 40% decrease of precipitation compared with last year experiencing the worst conditions.

The unprecedented drop in rainfall in recent years along with heavy rains in some periods of time indicates the collapse of ecosystem balance due to climate change.

The provinces of Hormozgan, Sistan and Baluchistan, Kerman, Fars and Bushehr usually receive the least amount of precipitation in the country. However, according to studies, the provinces of East Azerbaijan, West Azerbaijan, Kurdistan, Kermanshah, Zanjan, and Golestan seem to be experiencing better conditions than other provinces in the past year compared to last year.

Land subsidence in Iran

Another important issue related to the climate change crisis and its impact on the surrounding environment is the issue of land subsidence in Iran; an issue that has become a concerning dimension these days. According to one of the officials from the land drainage department of the Road, Housing, and Urban Development Research Center of Iran, the phenomenon of land subsidence has endangered the safe and sustainable development of Tehran. Also, according to other experts and sources of domestic news, in addition to observing land subsidence in the south and southwest of Tehran, Varamin, Shahriar plain, Qom and Imam Khomeini airport, in most of the plains of Iran there is a land subsidence. Many lines of roads, airports, railways, and oil and gas pipelines have suffered collapses and have been split in smooth paths. It goes without saying that the excess consumption of well water and the excessive issuance of permission to dig wells along with the adoption of irrational practices in agriculture are other factors that exacerbate subsidence of land in southern Tehran and plains.

Certainly, the effects of the climate change crisis are observed in Iran, as in other countries. Undoubtedly, Iran, as a developing country that has been geographically placed in one of the world's most tense regions, needs more attention to promote and implement the principles of sustainable development. This important issue is true for other countries in the region as well as for countries with similar status, while it is hoped that the international community will take measures in coordination with the less developed as well as developing countries to combat climate change.

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