

# Climate change and pollution

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**Abstract:** Climate change refers to the long-term alteration of temperature and typical weather patterns in a place. This can include changes in precipitation, temperature, and more extreme weather events. The primary cause of climate change is the release of greenhouse gases, such as carbon dioxide and methane, into the atmosphere through human activities, including the burning of fossil fuels, deforestation, and industrial processes. Climate changes lead to changes in precipitation, temperature, wind and humidity patterns and may have extensive effects on living systems, environment and economy. Some climate changes include temperature increase, melting of glaciers and polar ice, sea level rise, decrease in the number and intensity of storms and floods, decrease in the number and intensity of rains and droughts, and changes in wind patterns. This is books and articles review research which is the data collected from scientific books and reliable journals. Climate change can have serious effects on all kinds of life. For example, rising temperatures can lead to more droughts, reduced agricultural production, reduced water resources, increased fire risk, and increased disease transmission. Climatology scientists have come to the conclusion that climate can be changed in all dimensions of time. To deal with climate change, actions such as reducing greenhouse gases, using renewable energy sources, preserving water resources, protecting the environment and sustainable development can be effective. Also, education and public awareness about climate change and solutions to deal with it are also important. This is books and essays review article which is conducted from the domestic and foreign books and articles.

**Keywords:** air, pollution, climate change, gases, factors, soil, water

## INTRODUCTION

Climate change can have serious effects on all kinds of life. For example, rising temperatures can lead to more droughts, reduced agricultural production, reduced water resources, increased fire risk, and increased disease transmission. Also, changes in the pattern may lead to floods, droughts, decrease in drinking water resources and increase the risk of flooding. Climate change is a change in the physical conditions of the earth's atmosphere, including temperature and distribution

of rainfall, which has a wide impact on various aspects of human life. To deal with climate change, actions such as reducing greenhouse gases, using renewable energy sources, preserving water resources, protecting the environment and sustainable development can be effective. Also, education and public awareness about climate change and solutions to deal with it are also important.

**Materials and methods:** In this research, in addition to the fact that the books and journals those exist in the field have been used in accordance with the principles of trustworthiness and academic, itself is review research. The article has tried to use from authentic and methodical books of Geography as the source and references. The data about climate change and pollution is collected from different scientific books and essays and hope to help those who are interested in this field.

### What is climate change?

Climate change is a long-term change in the average weather patterns that have come to define Earth's local, regional and global climates. These changes have a broad range of observed effects that are synonymous with the term (NASA). Climate change refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels like coal, oil and gas (UN). The impacts of climate change on human health are justified by reported increase in changing weather and precipitation patterns responsible for poor water quality, air pollution, changes in land use and ecological variations (Tirivangasi H. M. et al,2021). Today, climate change is recognized and accepted as a big, global and effective challenge. The important point in this case is the consequences of these changes and how to adapt to them, as well as reducing the causes of climate change. Currently, there is scientific and definite evidence about global warming, and the unprecedented increase in temperature on the surface of the earth and the atmosphere caused by human activities is a proof of this. The severe melting of natural glaciers above the high mountains of the world is a sign of the rising temperature. The effects of climate change in different regions of the world depend on the climatic conditions and location of the region, and the inhabitants of different regions of the world are affected by this phenomenon according to their level of vulnerability and their readiness to deal with and adapt to climate change with different intensities. they take. In such a way that some areas become drier and face more droughts, while some areas have more rains and face wetter conditions (Royan; 2013). In general, in arid and semi-arid countries, the phenomenon of climate change has many adverse effects on the society, especially the agricultural sector, and it affects the agricultural production and overall food security of the country. In fact, farmers are the most important group that is affected by the temperature fluctuations resulting from

climate change. They suffer the most damage during the production of agricultural products. Considering the very negative effects of climate change on the quality of human life, new and scientific solutions and methods should be put on the agenda to deal with it. In such a situation, the climatic effects caused by the phenomenon of drought and drought can have many negative or positive effects on the production of agricultural products and food security. As stated, climate change has different effects on different elements of society, including the agricultural sector (Arad, 1998). The 1st world is responsible for the emission of greenhouse gases and ultimately climate change through the process of industrialization whereas the third world suffers (Shingirai S.M,2021).

#### Climate change and its relationship with the environment

Climate change and environment are directly related to each other. Climate change can have serious effects on the environment, and conversely, the environment can accelerate climate change. For example, the increase in temperature and the melting of glaciers and polar ice leads to an increase in the sea level. This increase in sea level can lead to flooding of coastal areas, destruction of marine habitats and threats to marine animals and plants. The transformation of these factors will lead to countless environmental issues, all of which are caused by the fact that space, time, diversity of matter and energy are not considered as resources, and with the increase of types of pollutants in nature, the instability of the global ecosystem is caused. becomes the increase in pollution is due to the industrial society's insatiable desire to use fossil fuel energy. The accumulation of pollutants along with re-feeding and the phenomenon of intensification and mutual effects of the processes cause the instability of the climate and its fluctuations (Jafarpour, 2007).

#### Climate variability and its relationship with natural resources

Climate change and changes in the environment are directly related to each other. Climate change can have serious effects on the environment, and conversely, the environment can accelerate climate change. Climate change leads to an increase in temperature and melting of glaciers and polar ice. This also increases sea level rise. This increase in sea level may lead to flooding of coastal areas, destruction of marine habitats and threats to marine animals and plants (Azimi; 2011). In order to reduce climate change and preserve the environment, natural resources must be used carefully and biodiversity must be preserved. Also, promote the use of clean and renewable sources such as solar and wind energy. Also, the destruction of natural habitats should be prevented and importance should be given to the preservation of protected areas (Malikiar, 2010). Therefore, preserving the environment and reducing the effects of climate change must be done simultaneously and in harmony (Motawaze, 1998).

#### What is Pollution?

Pollution is any change in the components of the environment in such a way that their previous use becomes impossible or the life and benefits of living organisms are endangered (Hashemian, 2013). There are many types of contamination; In this topic, only air pollution, water pollution and soil pollution are briefly mentioned (Melkiar, 2010). Clean air is our life's need, life is impossible without it. If the air is not clean, gradual death will be waiting for us. Polluted air brings various diseases. It is not only our respiratory system that needs healthy air, but our soul also needs clean air (National Environmental Protection Agency, 1392).

#### Air Pollution

Air pollution is the incomplete combustion of fuel that releases harmful gases into the air. Or in other words, air pollution is the presence of one or more pollutants (carbon dioxide, smoke, dust, dust, soil particles, vapors, etc.) in the air, which has changed the first property of the air (usefulness). It causes the air to be polluted (harmful); It is called air pollution (Ahmadzai, 2007). Air is necessary for life and it is needed more than water and food, to understand the importance of air it is enough that "a person can live without food for a few days, but without air he cannot live for more than a few minutes" God Almighty is the important influence of winds He mentions (air) in the life of man in Surah (zariyat) by swearing to the winds, therefore, the air should not pollute this vital substance with smoke and harmful gases because air pollution threatens the health and well-being of humans and all living beings and causes It can cause respiratory diseases and skin cancers (National Environmental Protection Agency, 2011). Most of us live in a world of extremes and lack of moderation, where everything is used in large quantities, clothes, shoes, toys, electrical appliances, home decoration, furniture, bricks, building materials, and so on. ... that the use of all these devices and things can have a significant effect on air changes (air pollution) (Harrington, 2013).

#### Sources of air pollution

The fourth article of the Regulation on Reducing and Preventing Air Pollution, published in 2008, in the official gazette of the Department of Justice of the country, has introduced the sources of air pollution as follows:

1. Vehicles and other motorized vehicles. 2. Factories, factories and commercial, domestic and miscellaneous sources. In this regulation, the distribution and release of any type of air polluting substances exceeding the permissible limit has been declared prohibited and the National Environmental Protection Agency has been entrusted with the task of determining and confirming the permissible limit of air pollution and informing the public through the media. Delivers:

1) Moving resources: resources that are always moving and can be transferred from one place to another. Such as all kinds of transportation, construction, production vehicles, etc. 2) Fixed sources: are sources that cause pollution in a fixed

and resident form in one place. Such as factories, industry, oil refining, thermal electricity, silos, central heating devices, welding devices, paint production factories, bitumen factories, clay dashes, regressions, etc. 3) Scattered sources: These are sources that are located in a certain area and its pollution is not so noticeable, but it can be encouraged by combining with other areas. Such as residential areas, bakeries, bathrooms, carpet moving machines, liquid gas supply sources, oil tanks, sculpting and carpentry machines, saw wood machines, painting, repairs, coppersmiths, etc. 4) Definite or standard sources: all the harmful gases that are present in the air in the form of forms and its excess is dangerous. The existence of these substances in the space is necessary for all living beings, but when its amount exceeds its natural limit due to various human activities, then it becomes harmful. 5) Natural sources: It means the release of various types of pollution by natural systems, such as strong winds, thick fog, floods, plant pollination, earthquakes, volcanoes and natural radiation, masks, etc.

### Water Pollution

Water is the means of life for everything on earth, by it all the creatures of the earth find life, water is considered as a basic part of the life of all creatures, where there is water there is life and where there is no water there is no life and even nature without water, He takes the form of a dead man. Every normal person needs an average of 3 liters of drinking water per day, one acre of land needs 35,000 liters of water for one planting season, water is the driving force behind the economy and progress of countries, and giant commercial and passenger ships go to the aid of water works and produces many benefits for mankind (National Environmental Protection Department, 2013). In the Holy Qur'an, the word (water) is mentioned 63 times and special attention has been paid to it, as if God has made the life of all living being dependent on water, "everything lives from water" or "we have purified and purifying water from the sky." We have sent Water is the embodiment of cleanliness and cleanser of ugliness and pollution and promises the health and well-being of humans and the environment (National Department of Environmental Protection, 2011).

Table (1) degree of pollution in different waters		
No	Water type	total solid and dissolved substances in grams per liter
1	Fresh water	less than 1 gram per liter
2	Salt water	(1-10) grams per liter
3	Salt water	(10-100) grams per liter
4	Salt water	more than 100 grams per liter

Source: Hashemian, 2018, p. 60

The above table shows the degree of pollution in fresh, salty, salty and salt water. If the pollutants in the above-mentioned waters are more than the amount determined in the table, we can say with full confidence that the water is polluted.



Normal (unless they are purified) cannot be used. Pollution of fresh water (drinking water): the permissible limit of elements or chemical compounds in fresh water in milligrams per liter equivalent to PPM.

Along with the increase in population, economic development and change in people's way of life, the need to consume fresh water in various areas of life (drinking, industry, agriculture, health, etc.) also increases.

#### Water pollution and its challenges

The following points can be stated as environmental challenges related to water pollution:

1) Reduced access to clean drinking water due to bacterial contamination of water supplies. 2) A lower percentage of people have access to clean and healthy drinking water sources. 3) Contamination of underground water due to non-standard burial of solid waste and non-standard discharge of sewage. 4) Contamination of water in domestic and urban ponds. Water pollution due to the lack of proper regulation and standardization of domestic and clinical waste and the existence of non-standard pumping stations in cities.

#### Ways to prevent water pollution

1. Enforcement and application of the law in order to protect water from pollution. 2. Development and discovery of healthy urban water supply networks. 3. Digging wells away from household evils. 4. Equipping toilets and household toilets with commodes and connecting them to city sewerage. 5. Avoid throwing household waste in the streets. Preventing the entry of polluted water from factories into flowing waters of streams, seas and underground waters (National Environmental Protection Department, 2014).

#### Soil Pollution

Like air and water, soil is also vital for human life and other creatures. Allah says in the Holy Qur'an: "We spread the earth and placed the mountains on it, and we grew everything balanced on it." we provided the means of livelihood for you and for the creatures that you are not the provider of. There are many verses in the Noble Qur'an and hadiths of the Prophet (PBUH) that point out the vital and important importance of soil, even at the beginning of creation, it connects man with the soil and emphasizes on keeping the soil clean (National Environment Department, 2017).

#### DISCUSSION

Climate change is an acute issue and there are many opinions and views about it. Some people and organizations believe that climate change is the result of human activities, especially the emission of greenhouse gases, and immediate efforts should be made to reduce these emissions. They believe that climate change may lead to serious effects such as rising temperatures, melting glaciers, rising sea levels and changing precipitation patterns.

On the contrary, some other people and organizations believe that climate changes are the natural result of natural processes and cannot be attributed to human activities. They believe that efforts to reduce greenhouse gas emissions are costly and unnecessary, and that the focus should be on adapting to climate change.

These conflicts exist due to the complex and multifactorial nature of climate change, as well as cultural, economic and political differences in different societies. To solve these conflicts, there is a need for more scientific research, cooperation between countries, and comprehensive organizational and political measures.

### CONCLUSION

Today, as a result of human activities on earth, the process of increasing energy and natural resources, various pollutants are released into the environment, the most important of which are: sulfur oxides, carbon oxides, nitrogen oxides, etc. Regarding climate change and pollution, necessary efforts should be made to deal with these issues at the national level. Programs to reduce greenhouse gas emissions and improve air quality should be developed and implemented. Also, special attention should be paid to protecting water resources and promoting sustainable methods of energy use. These measures can help preserve the environment and attract responsible tourists. Natural fertilizers such as the remains of humans, animals, birds, compost and green manure, urine and feces of animals such as cow, sheep, sparrow and bird manure, chemical fertilizers that are made using chemical materials and elements at home. If they are used properly and in the right amount at the right time, they are useful, but the incorrect use of chemical fertilizers not only does not strengthen the soil and increase the yield, but also causes soil destruction, water pollution and disruption of the health of living organisms.

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