

Droughts: Notes for UPSC Geographahy

Drought is a phenomenon that comes under geography in the strict sense of the word but has reverberations across various fields. This is because droughts affect the livelihood and economies and even lives of people affected by it. Hence, it assumes importance for the UPSC exam. In this article, we talk about droughts for the [IAS exam](#).

Definition of Drought

The term 'Drought' in simple words is the absence of water for a long period of time, at a place where it is considered abnormal as compared to its usual conditions. The distribution of water on the earth's surface is not even. Some places have lots of freshwater e.g. rivers, lakes, lagoons, ponds etc. and they are continuously replenished by rainfall and water from underground.

If a region that has had lots of [rainfall](#), goes for a couple of weeks without rains, and people, animals and plants begin to experience a bit of dryness, it can be called a drought. Drought can be defined as a relatively long time where there is not enough water than there usually is, as a result of dry weather, to support human, animal and plant life. Droughts become an issue only when it begins to affect water supply for irrigation, municipal, industrial, energy, and ecosystem function. Severe droughts can have serious consequences.

When drought is declared:

Recently, the government of England has formally declared parts of England. It was declared after a period of prolonged hot and dry weather.

The declaration of drought serves as a recognition of the water scarcity situation and the need for proactive measures to manage water resources effectively.

Implications of the declaration: The declaration abridges various actions and regulations to address the water scarcity issue and ensure the sustainable use of available water resources.

- **Water Companies' Drought Plans and Restrictions:** Water companies are required to have a drought plan in place, outlining the restrictions they may implement on their customers during a drought. These plans serve as guidelines for managing water supplies efficiently and responsibly.
- **Drought Orders and Permits for Water Management:** During a drought, water companies have the option to apply for drought orders and permits. This helps ensure a more sustainable water supply during times of scarcity.

- **Restrictions on Non-Essential Water Use:** To conserve water during a drought, restrictions can be imposed on non-essential water use. This includes measures such as limiting water usage in commercial car washes and swimming pools.
- **Restrictions for Farmers:** Farmers may face restrictions on water usage for spray irrigation. These measures are intended to balance the water needs of agricultural activities with the overall water availability in drought-affected areas.
- **Government Intervention in Industrial and Food Processing Water Use:** The government can impose restrictions on water use in industrial manufacturing or food processing sectors.
- **Conservation Measures in Dry Conditions:** In drought conditions, Natural England, the government's conservation advisory body, may restrict access to certain areas, such as national nature reserves, if there is a risk of fire caused by dry conditions. These measures aim to protect valuable natural habitats and prevent wildfires, which can be exacerbated during periods of prolonged hot and dry weather.

Types of Drought

There are three types of droughts known to the scientific community:

1. Meteorological drought occurs when there is a prolonged time with less than average precipitation. Such type of droughts can be triggered by a high level of reflected sunlight and above-average prevalence of high-pressure systems, winds carrying continental, rather than oceanic air masses.
2. Agricultural droughts affect crop production or the ecology of the range. This condition can also arise independently from any change in precipitation levels when either increased irrigation or soil conditions and erosion triggered by poorly planned agricultural activities cause a shortfall in water available to the crops.
3. Hydrological drought is brought about when the water reserves available in sources such as aquifers, lakes and reservoirs fall below a locally significant threshold. Hydrological drought tends to show up more slowly because it involves stored water that is used but not replenished. Like an agricultural drought, this can be triggered by more than just a loss of rainfall.
4. Socio-Economic Drought refers to the abnormal water shortage that affects socio economic condition of a region.

Drought in India

- Drought-prone districts in India comprise nearly 1/6th of this country in terms of area. These areas receive an annual rainfall of around 60 cm or less.

- These situations can be attributed to human malpractices such as recent year drought conditions have become recurring due to reasons as climate change, overuse of water resource, pollution, urbanization, etc.
- Drought is declared by the respective State Governments taking into account rainfall situation, crop growth, etc.

Consequences of Drought

The effects of droughts can be divided into three groups: environmental, economic and social.

- Environmental effects: Lower surface and subterranean water-levels, lower flow-levels (with a decrease below the minimum leading to direct danger for amphibian life), increased pollution of surface water, the drying out of wetlands, more and larger fires, higher deflation intensity, [loss of biodiversity](#), worse health of trees and the appearance of pests and dendroid diseases.
- Economic losses: Economic consequences include lower agricultural, forests, game and fishing output, higher food-production costs, lower energy-production levels in hydro plants, losses caused by depleted water tourism and transport revenue, problems with water supply for the energy sector and for technological processes in metallurgy, mining industries and disruption of water supplies for municipal economies.
- Social costs include the negative effect on the health of people directly exposed to this phenomenon (excessive heat waves), a possible limitation of water supplies, increased pollution levels, high food-costs, stress caused by failed harvests, etc. This explains why droughts and freshwater shortages operate as a factor which increases the gap between developed and developing countries.

Effects vary according to vulnerability. For example, subsistence farmers are more likely to migrate during drought because they do not have alternative food sources. Areas with populations that depend on water sources as a major food-source are more vulnerable to famine.

Frequently Asked Questions Related to Drought

Q. What are the four types of Drought?

As a result, the climatological community has defined four types of drought:

- 1) Meteorological drought
- 2) Hydrological drought
- 3) Agricultural drought
- 4) Socioeconomic drought.

Q. Is a drought a natural disaster?

Droughts are major natural disasters for many parts of the world. Dry areas, where the precipitation pattern is markedly seasonal, or is otherwise highly variable, are the most susceptible. Unlike most other natural disasters, drought onset is difficult to identify.

