STOP SUSZY
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GLOSSARY

Issues related to drought risk

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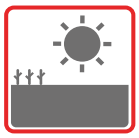
DROUGHT RISK

the probability of drought caused by long-term rainfall deficiency, leading to reduced soil moisture, lower water levels, and negative effects on the environment and economy. It is monitored based on meteorological, hydrological, and soil data.

THREAT OF ATMOSPHERIC (METEOROLOGICAL) DROUGHT

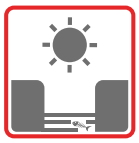


the probability of a lack or a significant deficiency of rainfall in a given area. Its characteristic features are a decrease in air humidity, an increase in average temperatures and increased evapotranspiration – the process in which water evaporates both from the soil surface and through plant leaves.

THREAT OF AGRICULTURAL (SOIL) DROUGHT

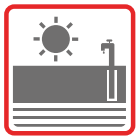
the likelihood of insufficient soil moisture, which may lead to problems with plant growth and make normal agricultural activities difficult.

THE THREAT OF HYDROLOGICAL DROUGHT



the likelihood of a shortage of water resources in rivers and lakes. Its symptoms may be low water levels and flows.

THE THREAT OF HYDROGEOLOGICAL DROUGHT



the probability of water shortage in underground resources. Restoring underground water resources is a long and complicated process, which is why this type of drought is particularly dangerous.

RISK OF THE OCCURRENCE OF DROUGHT

assessment of the possibility of incurring losses in economic sectors and the environment, including aquatic ecosystems and water-dependent ecosystems, as well as indirectly in the social dimension, as a result of drought. The risk of losses resulting from drought is the product of drought risk and susceptibility to losses. Susceptibility to losses should be understood as the vulnerability of an area (environmental, social, economic) to drought, defined by a set of risk element characteristics. The risk elements are the groups of water and environmental users exposed to loss in the event of drought with a specific level of risk of its occurrence. These are groups for which the negative effects of drought should be limited.

DRY YEAR

a hydrological year in which the total precipitation is less than 90% of the average multi-year total, which leads to a water deficit in the soil, streams, and water reservoirs. It can cause atmospheric (also known as meteorological), agricultural, and hydrological drought, negatively affecting water management and the environment.

LOW FLOW

a periodic decrease in the flow in a river, when the amount of water flowing in the channel falls to a conventional limit value or below it and persists for a specified period of time. It is almost always caused by lower than usual supply of rainfall in rivers.

LOW WATER LEVEL

a situation in which the water level in a river falls below a set threshold value, measured against the zero of the water gauge – a conventional reference level on the staff gauge. It may be the result of a long-term lack of precipitation, increased evaporation or limited groundwater supply. Low water levels that persist for a long time may lead to hydrological drought.

WATER SHORTAGE

a phenomenon caused by anthropogenic activity. It occurs when the demand for water exceeds the available water resources. Water shortages very often intensify the effects of drought, leading to extreme forms of drought, characterized by high intensity and long duration.

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WATER DEFICIT

a deficit is considered a situation in which water shortage becomes a significant barrier to human, social and economic development. It is a failure to meet a basic biological need in the form of water consumption, which is necessary for survival, preparation of meals, and ensuring basic hygiene. The occurrence of a deficit also results in production restrictions, decreases the efficiency of agriculture, and disrupts the functioning of various economic sectors.

WATER STRESS

a condition of the organism caused by a lack, excess or contamination of water, leading to disturbances in the balance, function, and structure of plants, animals or humans. In plants, it most often occurs in the case of a water deficit in the soil or difficulties in its uptake (e.g. due to low soil temperature or salinity). In the context of humans, water stress means insufficient or contaminated water that does not fully meet their basic needs.

RESTRICTIONS ON WATER USE/WATER MANAGEMENT

solutions used in sustainable water resource management, aimed at protecting water resources and ensuring the appropriate quality and quantity of water to meet the needs of the population and the economy. When introducing bans and restrictions on water use, water security is ensured, including protection against floods and droughts.

SOIL DEGRADATION

a common phenomenon of reducing soil productivity, or in other words, reducing or destroying its functions and utility values, which negatively affects the ability to retain water, agricultural production, and the functioning of ecosystems. Soil degradation can be the result of both natural processes and human activity, such as intensive agriculture, chemical pollution or erosion. Many processes and phenomena contribute to this, which, by worsening the physical, biological or chemical properties of the soil, negatively affect its fertility and resources. We distinguish the following types of soil degradation: physical degradation, chemical degradation, biological degradation, and geotechnical degradation.

URBAN HEAT ISLAND (UHI)

a climatic phenomenon consisting in the occurrence of higher air temperatures in the city compared to the areas surrounding the city. UHI is formed as a result of the urban structure characteristic of cities, including the dominance of artificial, hardened and impermeable surfaces, a limited amount of greenery and weakened air circulation. Materials such as concrete, asphalt, and brick absorb more sunlight than they reflect, and then give off energy, increasing the temperature in the environment. Additionally, human activity contributes to the increase in air temperature in the city – heating and air conditioning in buildings, car traffic, industrial production. A small amount of vegetation means that the city regulates air humidity worse and does not provide a natural cooling effect through evaporation.

MULTI-YEAR PERIOD

a conventional period of time lasting longer than one year, established based on an annual start and end date. It is assumed that the minimum observation period, on the basis of which it is possible to draw conclusions about the so-called normal values of characteristics, is 30 years, e.g. the multi-year period 1992-2023. In the case of hydrological applications, the multi-year period is counted from November of the initial year to November of the final year (which results from the hydrological cycle).

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