

## **FAQ's**

### **1. Discuss importance of water resources.**

Water resources are sources of water that are useful or potentially useful to humans.

It is important because it is needed for life to exist.

Many uses of water include agricultural, industrial, household, recreational and environmental activities.

Virtually all of these human uses require fresh water.

Only 2.5% of water on the Earth is fresh water, and over two thirds of this is frozen in glaciers and polar ice caps.

Water demand already exceeds supply in many parts of the world, and many more areas are expected to experience this imbalance in the near future.

It is estimated that 70% of world-wide water use is for irrigation in agriculture.

Climate change will have significant impacts on water resources around the world because of the close connections between the climate and hydrologic cycle.

Due to the expanding human population competition for water is growing such that many of the worlds major aquifers are becoming depleted.

Many pollutants threaten water supplies, but the most widespread, especially in underdeveloped countries, is the discharge of raw sewage into natural waters.

### **2. What are the different sources of fresh water?**

**Fresh water** is naturally occurring water on Earth's surface in ice sheets, ice caps, glaciers, icebergs, bogs, ponds, lakes, rivers and streams, and underground as groundwater in aquifers and underground streams. Fresh water is generally characterized by having low concentrations of dissolved salts and other total dissolved solids. The term specifically excludes seawater and brackish water although it does include mineral-rich waters such as chalybeate springs.

The term fresh water does not have the same meaning as potable water. Much of the surface fresh water and ground water is unsuitable for drinking without some form of purification because of the presence of chemical or biological contaminants.

The source of almost all fresh water is precipitation from the atmosphere, in the form of mist, rain and snow. Fresh water falling as mist, rain or snow contains materials dissolved from the atmosphere and material from the sea and land over which the rain bearing clouds have traveled. In industrialized areas rain is typically acidic because of dissolved oxides of sulfur and nitrogen formed from burning of fossil fuels in cars, factories, trains and aircraft and from the atmospheric emissions of industry. In some cases this acid rain results in pollution of lakes and rivers.

In coastal areas fresh water may contain significant concentrations of salts derived from the sea if windy conditions have lifted drops of seawater into the rain-bearing clouds. This can give rise to elevated concentrations of sodium, chloride, magnesium and sulfate as well as many other compounds in smaller concentrations.

In desert areas, or areas with impoverished or dusty soils, rain-bearing winds can pick up sand and dust and this can be deposited elsewhere in precipitation and causing the freshwater flow to be measurably contaminated both by insoluble solids but also by the soluble components of those soils. Significant quantities of iron may be

transported in this way including the well-documented transfer of iron-rich rainfall falling in Brazil derived from sand-storms in the Sahara in north Africa.

### **3. What is importance of ground water?**

**Groundwater** (or **ground water**) is the water present beneath Earth's surface in soil pore spaces and in the fractures of rock formations. A unit of rock or an unconsolidated deposit is called an aquifer when it can yield a usable quantity of water. The depth at which soil pore spaces or fractures and voids in rock become completely saturated with water is called the water table. Groundwater is recharged from, and eventually flows to, the surface naturally; natural discharge often occurs at springs and seeps, and can form oases or wetlands. Groundwater is also often withdrawn for agricultural, municipal, and industrial use by constructing and operating extraction wells. The study of the distribution and movement of groundwater is hydrogeology, also called groundwater hydrology.

Typically, groundwater is thought of as water flowing through shallow aquifers, but, in the technical sense, it can also contain soil moisture, permafrost (frozen soil), immobile water in very low permeability bedrock, and deep geothermal or oil formation water.

Polluted groundwater is less visible, but more difficult to clean up, than pollution in rivers and lakes. Groundwater pollution most often results from improper disposal of wastes on land. Major sources include industrial and household chemicals and garbage landfills, excessive fertilizers and pesticides used in agriculture, industrial waste lagoons, tailings and process wastewater from mines, industrial fracking, oil field brine pits, leaking underground oil storage tanks and pipelines, sewage sludge and septic systems.

#### **4. Discuss the main conflicts caused by water resources across the globe.**

**Water conflict** is a term describing a conflict between countries, states, or groups over an access to water resources. The United Nations recognizes that water disputes result from opposing interests of water users, public or private.

Water has historically been a source of tension and a factor in conflicts that start for other reasons. However, water conflicts arise for several reasons, including territorial disputes, a fight for resources, and strategic advantage. These conflicts occur over both freshwater and saltwater, and both between and within nations. However, conflicts occur mostly over freshwater; because freshwater resources are necessary, yet limited, they are the center of water disputes arising out of need for potable water and irrigation. As freshwater is a vital, yet unevenly distributed natural resource, its availability often impacts the living and economic conditions of a country or region. The lack of cost-effective water supply options in areas like the Middle East, among other elements of water crises can put severe pressures on all water users, whether corporate, government, or individual, leading to tension, and possibly aggression. Recent humanitarian catastrophes, such as the Rwandan Genocide or the war in Sudanese Darfur, have been linked back to water conflicts.

Water conflicts occur because the demand for water resources and potable water can exceed supply, or because control over access and allocation of water may be disputed. Elements of a water crisis may put pressures on affected parties to obtain more of a shared water resource, causing diplomatic tension or outright conflict.