

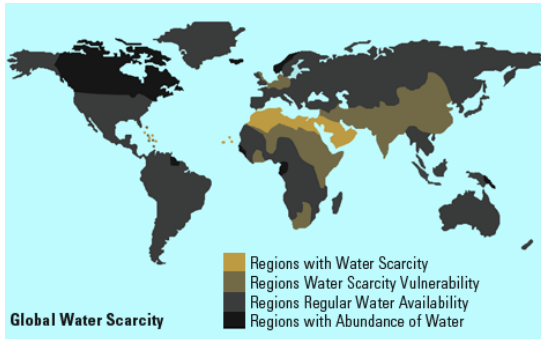
## Introduction to global water scarcity

For many people, water has never been a big story in their lives. This is because they live in communities that have good water supply systems. They turn on the tap and clean water flows, every day of the year. This makes it very difficult for people to appreciate how precious water is.

Water is life. Plants, animals and humans all depend on this invaluable natural resource for life. Besides this, water is used in moving waste, cleaning and sanitation, manufacturing, construction and farming. Almost every human activity you can think of involves some use of water.

Water covers more than 70% of the earth's surface, so how can there ever be scarcity? Less than 3% of water on earth is fresh water, and the bulk of this is trapped in snowfields and glaciers and not easily accessible. The rest form the seas and oceans and cannot be used in the same way as fresh water. Only a tiny fraction (0.014%) is surface water in the form of rivers, lakes and swamps.

Naturally, the 3% should be enough for all humans and animals on earth, but unfortunately, many factors have caused a major upset in the flow and use of fresh water and has caused massive crisis in many regions of the earth.



But why should you care?

We should care because a lot of the factors that cause water scarcity are broadening and becoming more complex and uncontrollable. This means if we do nothing in terms of preserving and using it wisely, it is only a matter of time that all regions shall begin to experience water crisis and all the problems that come with it.

### Did you know...

🌍 Experts say that a person in a developed country having a five-minute shower uses more water than the average person in a developing country slum uses for an entire day.

## What makes up Fresh Water?

In simple terms, fresh water is water that has little or no dissolved salts and dissolved solids. This excludes sea or marine waters and [brackish water](#). All over the world, water comes in other forms such as ice-sheets, glaciers, lakes, ponds, rivers, streams and icebergs. The quantities found in every geographic area may vary.

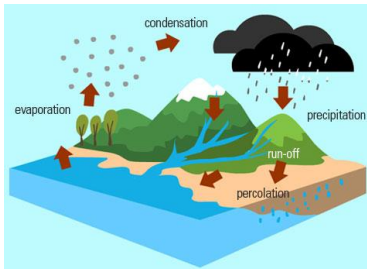


Fresh water may be still or fast flowing. Still fresh water is known as '**Lentic systems**' while flowing fresh water is known as '**Lotic Systems**'. Others come from underground as ground water in aquifers and underground streams.

Where does all fresh water come from?

Fresh water comes from precipitation from the atmosphere, usually in the form of rain, mist and snow. When these fall, they find their way into streams and rivers which run down from mountain tops to low-lying areas. Eventually, they end up in the sea or ocean. Because much of atmospheric water ends up falling into our water bodies, it is important that we keep an eye on the chemicals that find their way into the atmosphere via air pollution.

But how does water end up in the atmosphere in the first place? This can be explained in a model called [The Water Cycle](#).



### The Water Cycle

Water is a renewable resource. Its' Cycle (also known as the hydrologic cycle) is simply the journey water takes as it circulates from the land to the atmosphere and back again.

With the help of the diagram below, let us see how the cycle works:

Let us start this cycle with **precipitation**. This is water that start as tiny water droplets, and become larger drops that fall from the sky (atmosphere) in the form of snow, rain and due.

Precipitation creates **run-off**, which adds to flowing water and end up in rivers, streams, lakes, lagoons and seas. Some of the water also **percolates** (seeps through the soil) and into underground water.

The collected surface water then **evaporates** (turns into gas) and ends up as water vapor in the atmosphere. **Condensation** occurs and the water vapor it turned into rain-bearing clouds. In addition to that, plants absorb moisture, which also evaporates from the leaves into the atmosphere. This means there is more evaporation in regions with more water bodies and massive vegetation and tend to have more rain bearing clouds.

Rain bearing clouds then release the water in the form of precipitation and the cycle begins again.

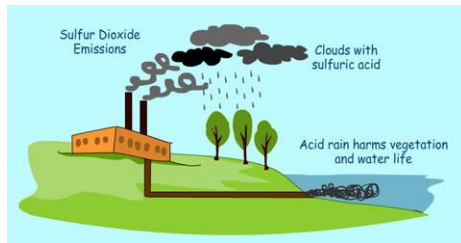
## Causes of water scarcity

Here are some important causes of water shortage:

### ● Population expansion

Just 50 years ago, the total number of people on earth has doubled and continues to grow. This is a result of larger family sizes and access to better health care and lifestyles. This means that use of wholesome water for drinking, cleaning, cooking and sewage has tripled. Humans are a lot more careless in recent time, and we waste more water than ever before. This has placed a lot of pressure on the same amount of water that we have.

### ● Urbanization



Cities are growing and expanding more than ever before. Cities also tend to hold more people than towns and villages. This means there is an increased need to take care of sewage, cleaning, construction and

manufacturing.

### ● Pollution

Water, air and land [pollution](#) together contribute to the reduction of water quality. Sewage, oil discharges from industries, waste dumping into water bodies, radioactive waste from mining activities as well as dirty water from sanitation work in hospitals, hotels, oil companies, mining, schools and restaurants all end up polluting our waters. Water contamination and wastage from some mining industries through Hydraulic Fracturing (fracking) has also been a worry for many people.

### ● Vegetation destruction and Deforestation

Trees help prevent excessive evaporation of water bodies. They also enrich and condition the climate. This means the [destruction of forests](#) by fire, logging and farming has exposed soil moisture and water bodies to the sun's intense heat, leaving them dried out.

### ● Climate change

All over the world, places that used to have lots of rainfall do not have enough again and dry places suddenly are getting colder and wetter. Both cases result in clean water shortage because less rainfall means less water, and excessive rains cause flooding and which brings all sorts of debris and destroy water treatment installations.

