

Water Scarcity

Clean water is essential for human life but is a relatively limited resource and unevenly distributed in the world.

Only about 2.5% of Earth's water is freshwater, and of that freshwater even less is obtainable and usable for humans. This puts over 400 million people in regions with water shortages.

Water scarcity occurs when the amount of water withdrawn from lakes, rivers, or groundwater is so great that either 1. water supplies aren't adequate to satisfy human and ecosystem needs or 2. it results in increased competition between water users and other demands. Access to water does not necessarily mean water security because many sources today are still [unimproved sources](#) of water which can be unsafe or inconsistent, and therefore corresponds with water scarcity.

Water scarcity can be caused by any of the following:

- arid climate or drought
- poor water quality
- groundwater depletion
- pollution

pathogens and disease

climate change

Many of these causes are closely tied to human habits and can be prevented through healthy practices and organizational action.

These ▶▶ [instructions for saving water](#)◀◀ provide some ways in which those habits can be formed.

Unimproved Sources

Unimproved sources of water are unprotected from outside contamination.

▼ Types of Unimproved Water Sources

Unimproved sources can be considered unimproved because they are either contaminable or unreliable sources to consistently provide for consumers.

The following table compares unimproved sources of water and improved sources of water through examples.

▼ Table 1: Water Sources: Unimproved and Improved

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Source Type	Examples
Improved Sources	household connection, public standpipe, borehole, protected dug well, protected springs, rainwater collection
Unimproved Sources	unprotected well, unprotected spring, rivers, ponds, bottled water, vendor- provided water, tanker truck

Today, 80% of people rely on wells , 16% rely of other improved sources, and 4% of people rely on unimproved sources for their everyday water.

How To Prevent Water Scarcity

These instructions support sustainable water supply globally and locally by explaining ways in which people can save water and prevent scarcity.

Approximately 400 million people live in regions with water scarcity. The following tasks are ways to act against water scarcity. They are arranged in order from the most widespread and global actions and impacts to the most local actions and impacts in prevention of water scarcity.

1. ▶▶ **Support projects that build improved water sources.** ◀◀

Projects for improved water sources include those that build sanitation facilities, water pipelines, wells, boreholes, and other protected water systems. They can be supported through direct financial support or through government and social action to support them.

When improved water sources are financially supported and built, people gain regular access to clean, local water and therefore overcome water scarcity issues.

2. ▶▶ **Use water budgeting tactics to ensure regional water**

supply.◀◀

A water budget is the addition of precipitation, surface water, and groundwater entering a hydraulic system and the subtraction of evaporation outflow, surface water outflow, and groundwater outflow in a specific area.

Using this equation, governments and organizations can manage regional water usage to the budget that they have based on water entrance and outflow in certain areas.

This step requires action on the institutional level and citizen support of responsible water budgeting.

The result of water budgeting tactics will allow institutions to direct citizens in how much water they have to use regularly and how they can use it most efficiently to prevent scarcity.

3. ▶▶ Prevent global climate change.◀◀

Preventing global climate change prevents water scarcity because climate change causes warmer climates and droughts. Actions that prevent global climate change may include support of government actions that help people and the environment or changing personal habits to be less impactful on climate. ▶ Habits and regulations that prevent global climate change often naturally use less

water than those that cause climate change.◀

Following this step will result in more consistency of climate and access to water and it will allow for the building of clean water systems that will last generations.

4. ▶▶ Prevent water pollution.◀◀

Water pollution is one of the main reasons that people lack access to safe water. Preventing pollution will decrease wasted water and increase clean water for local and regional communities. This step includes personal actions that avoid harsh chemicals, nutrient pollution, septic contamination, and other forms of groundwater and surface water pollutants.

Prevention of water pollution conserves the few water sources that have potential to be used by humans and prevents long-lasting damage to those ecosystems.

5. ▶▶ Limit personal water usage.◀◀

Personal water usage can be limited by cutting shower time, using efficient appliances, strategically planning water usage, and other water management practices.

These can be personal decisions or those enforced by the state, like the following example in Cape Town, South

Africa.

Cape Town experienced drought in 2017 that forced citizens to decrease water consumption, or else they were to run out within a small time period. The citizens successfully reduced consumption by one-half in several years through slow, adaptive water restrictions, reduction of water pressure in buildings, and through outreach campaigns. This exemplifies the possibilities of personal water reduction to reduce scarcity.

Reducing personal water usage lessens the local demand for water and therefore increases the water budget and decreases water scarcity.