



Fresh Water Use: Overview

A turn of a tap. A cold glass of water. A quick flush of the toilet. These small moments are so seamless that most of us never give them a second thought. But behind these everyday routines lies a striking global reality: less than 1 percent of all the water on Earth is clean and accessible fresh water that we can use. While water covers more than 70 percent of our planet, 97 percent of it is salty ocean water, and much of the rest is frozen away in massive glaciers.

That tiny fraction of fresh water fuels every person, farm, factory, animal, energy grid, and smartphone across the globe. From the crops growing in rural fields to the tech centers keeping our apps running, fresh water is the quiet engine behind almost everything in modern life.

This is where the real challenge comes in: our global population is steadily growing, but Earth's total fresh water supply is limited. Nature is not making any new water. As our global family expands, our collective appetite for resources skyrockets. More people mean we need to grow significantly more food, manufacture more clothes, generate more power, and build more technology. Every single one of those things requires a massive amount of water behind the scenes.

When our water demand outpaces what local rivers, lakes, and underground wells can naturally refill, serious problems start bubbling up. Shortages can trigger dangerous public health crises, ignite intense legal battles over who legally owns a river, or force young students to walk miles in the heat every single day just to carry a jug of water home instead of going to school.

The United Nations tracks these interconnected challenges through its [Sustainable Development Goals \(SDGs\)](#), most notably Goal 6 for clean water and sanitation. Ensuring fair fresh water access is also critical for achieving zero hunger (Goal 2), promoting good health and wellbeing (Goal 3), and reducing global inequalities (Goal 10) as our population grows.

Picture waking up tomorrow in charge of your community's entire water supply. How would you ensure every home, farm, school, and business has enough clean water to thrive as more people keep moving in? Balancing those needs is one of the biggest puzzles of our time. Put your problem-solving hat on, get creative, and read through the subtopics below to start exploring!

Narrow Your Focus

Fresh water use is a broad topic that encompasses a lot of challenges, but your video can only be 60 seconds. Rather than taking on the entire topic, we recommend focusing on one part of the topic (a subtopic).

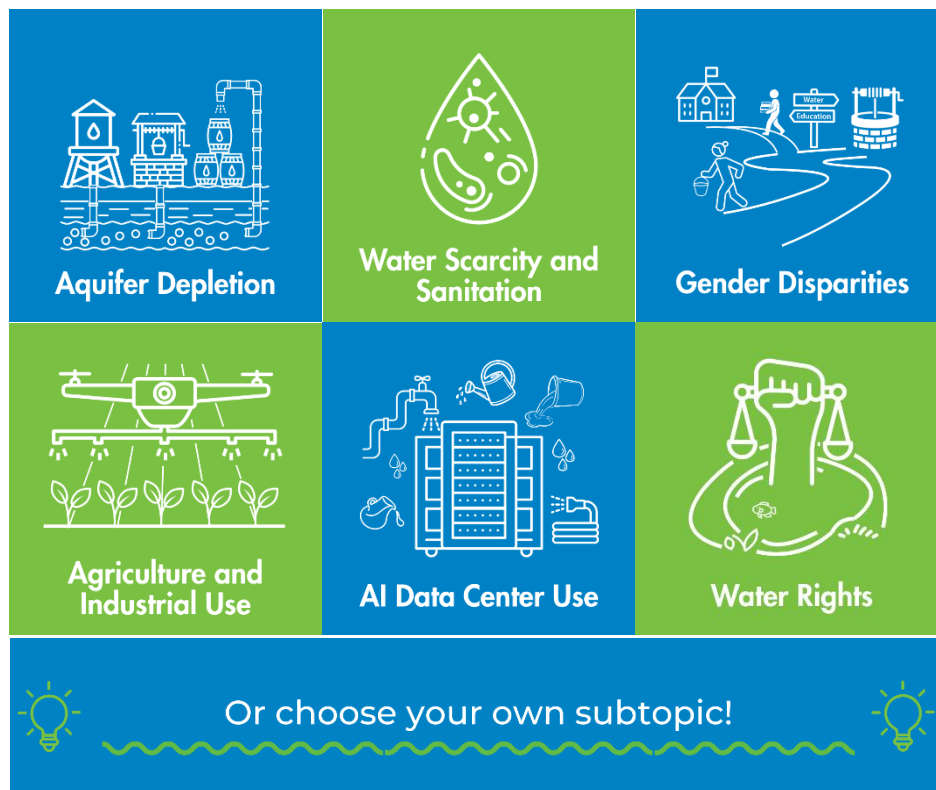
We've put together a list of suggested subtopics and credible sources. Each subtopic has a thought-provoking question to get you thinking. But there are many other subtopics, questions to think about, and credible sources on fresh water, so don't limit yourself to what is included here.

As you conduct your [research](#), make sure to keep a [works cited list](#) of where you get each fact. Be sure to check that your [sources are credible](#). We will ask for your sources if you are a finalist.

As a reminder, your video must do three things:

- **Explain your subtopic focus and how it relates to fresh water**
- **Connect how human population growth impacts your topic**
- **Provide a sustainable solution**

Click on the example subtopics below to start your research and spark ideas for your video.



Looking for more resources to help you plan your video?
Check out the [video project organizer](#) (full version) or the [video project guide](#) (shorter version).

Aquifer Depletion

Thought-provoking question: What happens when we drain Earth's giant underground water tank?

Deep underground aquifers hold most of our drinking water, but humans pump them dry far faster than nature refills them. As booming populations in dry regions over-extract groundwater for farms and cities, we risk permanently draining these subterranean reserves for future generations.

- More than half of the world's 37 largest aquifers are depleted past critical tipping points without natural recharge. (Read more: [United Nations University](#))
- Over-pumping underground aquifers causes irreversible land subsidence. Sections of the San Joaquin Valley in California have sunk by nearly 30 feet. (Read more: [U.S. Geological Survey](#))
- NASA GRACE satellite mission sensors track subtle gravitational changes on Earth to map invisible groundwater depletion from orbit. (Read more: [NASA](#))
- Deep agricultural wells in rural Kansas and Texas are withdrawing ancient Ogallala Aquifer water that took over 10,000 years to accumulate. (Watch: [Vox/YouTube](#))
- Fossil aquifers locked deep underground hold prehistoric water that will never naturally replenish once pumped out. (Read more: [Groundwater Foundation](#))

Water Scarcity and Sanitation

Thought-provoking question: *What if getting a drink of water meant walking four miles in the scorching heat?*

Millions of families lack clean drinking water or toilets because rapid urban population growth easily outpaces city infrastructure. When dense neighborhoods are forced to rely on unsafe water, waterborne illnesses spread quickly, turning plumbing delays into severe public health crises.

- Over 2.2 billion people globally lack safely managed drinking water at home, while 3.5 billion lack access to a safe toilet. (Read more: [United Nations SDGs](#))
- The total urban population facing acute fresh water scarcity worldwide is expected to double to nearly 2.4 billion by mid-century. (Read more: [UNESCO](#))
- Families living in informal settlements without plumbing often pay private water truck vendors up to 10 times more per liter than connected high-income households. (Read more: [Water.org](#))
- Diarrheal diseases caused by contaminated water and unsafe sanitation remain a leading killer of children under five years old worldwide. (Read more: [Our World in Data](#))
- Fewer than half of the schools in the world's least developed countries have basic handwashing facilities with soap and water available to students. (Read more: [WHO/UNICEF Joint Monitoring Programme](#))

Gender Disparities

Thought-provoking question: *Why does water scarcity impact girls and women the hardest?*

Around the world, women and girls spend a collective 250 million hours every single day doing one grueling task: walking miles back and forth to gather clean water for their homes. In water-stressed regions with high birth rates, a growing household means much higher daily water demands. Because of traditional cultural roles, the burden of collecting that extra water falls on the shoulders of women and school-aged girls. When a community's population grows without proper water infrastructure, girls are forced to drop out of school and women miss out on jobs to keep their families hydrated, holding back the education and economy of the entire population.

- Around 1 million girls in Afghanistan are barred from attending secondary school. (Read more: [UNICEF USA](#))
- In sub-Saharan Africa, women and girls carry out over 80 percent of the water collection duties for families living without piped plumbing. (Read more: [UN Women](#))
- A standard jerrycan used for water collection weighs approximately 40 pounds when full, causing chronic physical strain and spinal injuries in young girls. (Read more: [The Guardian](#))
- Primary school attendance rates for adolescent girls jump by up to 15 percent when communities install a clean water source within a 15-minute walk. (Read more: [Global Citizen](#))
- Involving women directly in the governance and planning of local water systems makes those water facilities up to seven times more effective and long-lasting. (Read more: [World Bank Blogs](#))

Agriculture and Industrial Use

Thought-provoking question: *How much water is hiding in the clothes you wear and the food you eat?*

Your clothes can take around 3,700 gallons of water to produce, and just one cheeseburger lunch can take almost 1,000 gallons. As the global population grows, soaring demand for food and clothing forces industrial farms and factories to consume 70 percent of accessible fresh water, rapidly draining lakes and rivers.

- Agricultural irrigation accounts for roughly 70 percent of all fresh water withdrawals globally, climbing up to 90 percent in low-income economies. (Read more: [World Bank Blogs](#))
- Everyday items like jeans, chocolate, and cotton all carry a hidden water footprint used to grow, make, and transport them. (Read more: [Water Footprint Network](#))
- Virtual water is the invisible volume of water required to produce a product, which travels across borders whenever goods are traded. (Watch: [TEDx Talks/YouTube](#))

- The average human eats and wears between 500 and 1,300 gallons of virtual water every single day through daily food and fashion choices. (Explore your impact: [Water Footprint Network](#), [Water Footprint Calculator](#))
- Global agricultural production must increase by 50 percent by mid-century to feed a population reaching nearly 10 billion people. (Read more: [FAO](#))
- Liquid surface water in all lakes, rivers, and streams makes up only 0.3 percent of the planet's total fresh water. (Watch: [TED-Ed/YouTube](#))

AI Data Center Use

Thought-provoking question: *Did you know that asking an AI tool to generate a picture or write a story takes a physical drink of water?*

Streaming videos and using AI tools require massive servers that generate intense heat and consume millions of gallons of cooling water. As population growth increases daily tech use, data centers draw heavily on local water supplies, competing directly with communities for clean drinking water.

- AI data center use is projected to consume as much water as entire nations. (Read more: [TIME](#))
- Major tech companies release real-world data tracking how they manage the millions of gallons of water required to cool regional server farms. (Read more: [Google Sustainability](#))
- Computer science researchers break down how submitting an AI prompt uses real water behind the scenes to keep data centers running. (Read more: [The Markup](#))
- Policy reports examine how local water grids handle the arrival of massive server farms as tech demands surge. (Read more: [Global Action Plan](#))
- Data centers often use evaporative cooling towers, a process that relies on large volumes of water evaporating to keep servers from overheating. (Read more: [Veolia Water Technologies](#)). However, many newer facilities are adopting “closed loop” cooling systems that recycle water, which dramatically cuts down their overall water consumption. (Read more: [Environmental and Energy Study Institute](#))

Water Rights

Thought-provoking question: *If a river flows right through your neighborhood, can a stranger living hundreds of miles away legally stop you from using it?*

Many communities face a paradox where a major water source flows nearby, yet they are prohibited from accessing it because other stakeholders were granted legal entitlements. These legal rights were written when human populations were smaller and water felt infinite, but today, as cities contain millions of new residents, our legal systems are stuck in the past. A booming modern city can find itself in a severe water crisis because an outdated

treaty guarantees the entire river to a neighboring territory, forcing us to look at what happens when rapid population growth collides with rigid laws.

- The Imperial Irrigation District in southern California holds legal rights to more water from the Colorado River water per year than Arizona and Nevada combined. (Read more: [PBS News](#))
- The landmark 1922 Colorado River Compact legally divided the river by using flow estimates recorded during an unusually wet decade, legally over-allocating more water than the river yields today. (Read more: [Colorado River Compact Documentation via Native American Rights Fund](#))
- Over 260 major river basins globally cross international borders, creating complex geopolitical conflicts over upstream dam construction. (Read more: [National Geographic](#))
- Western U.S. water law operates under the doctrine of prior appropriation, commonly known as "first in time, first in right." (Listen: [Civics 101 Podcast](#))
- Upstream mega-dams built along the Nile River have created intense international legal friction between Ethiopia, Sudan, and Egypt. (Read more: [Council on Foreign Relations](#))

Choose Your Own Subtopic

Thinking of your own subtopic can be challenging if you don't know where to start. We've put together a guide to help spark some ideas. Follow the path below to come up with a subtopic that is personal and meaningful to you, so it stands out from other entries.



What do you already know?

Before doing your research, write a prior knowledge list of everything that comes to mind when you think about fresh water use and availability. Include any books, articles, podcasts or videos where you learned about fresh water and anything you remember from them.



What is happening in your community?

Has your community experienced a fresh water crisis? How did it affect you, your friends, family, and neighbors? Is this incident becoming more common than in the past? Are there other areas around the world impacted by this same crisis?



How can you start your research?

Look back at your prior knowledge list about fresh water use. Is there anything else you want to know? What questions do you have about how fresh water use and availability affect your local and global communities? Start looking for credible sources, search for answers, explore more about fresh water, and see where your research takes you!

The 60 Second Check



Your video can only be a maximum of 60 seconds. Can you:

- Explain the problem clearly?
- Show how population growth is connected to the subtopic?
- Propose an innovative, realistic solution?