

# 6

# CLEAN WATER AND SANITATION



## ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

**Water, water everywhere?** Well, not quite. Improving access to clean drinking water, sanitation and hygienic facilities needs to be addressed for a large portion of our world. This goal not only focuses on human consumption of water, but the quality and sustainability of water resources worldwide. This goal addresses access to water, managing our impact on water sources, protecting our ecosystems and supporting our communities to improve sanitation management.

### TARGETS

- Ensure that everyone has access to safe and affordable drinking water.
- Ensure that everyone has access to adequate sanitation (safe sewage disposal and good waste management), as well as public education on healthy hygiene habits.
- Monitor and reduce contamination of water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, and increase recycling and safe reuse of water.
- Improve water use, developing new systems and resources to reuse it and address water scarcity.
- Increase awareness among communities to involve them in water and sanitation management.
- Protect and restore water-related ecosystems including mountains, forests, wetlands, lakes, rivers and aquifers.

“ Although we take it for granted, sanitation is a physical measure that has probably done more to increase human lifespan than any kind of drug or surgery. ”

**Deepak Chopra**  
Author and public Speaker



## LEARNING OBJECTIVES

- 1 Learners will understand the causes, effects and consequences of water pollution and water scarcity around the world.
- 2 Learners will understand unequal water distribution and the lack of access to safe drinking water and sanitation facilities.
- 3 Learners will gain an understanding of integrated water resource management and other strategies for ensuring the availability and sustainable management of water, sanitation and natural-disaster management.
- 4 Learners will communicate and participate in strategies and activities that help reduce and prevent water pollution, ensure water access and implement water saving measures.
- 5 Learners will be able to question socio-economic differences and gender disparities in the access to safe drinking water and sanitation.
- 6 Learners will be able to contribute to water resource management and reduce their water footprint at the local level.

## CURRICULUM CONNECTIONS

### Media

How are water issues reported in the media? What angle do you think is important to focus on?

### Environment

What are the main water sources in your community? What are the biggest challenges to water quality and quantity? What are the biggest threats to our world's water sources?

### Poverty, wealth and power

How is access to clean water a poverty issue? Locally? Nationally? Internationally?

### Indigenous Peoples

What are the challenges for Indigenous People regarding access to safe and clean water? How are individuals and communities taking a stand?

### Oppression and genocide

How has control over water been used as a tool of oppression? How have people resisted this oppression?

### Health and biotechnology

What technologies have helped ensure access to water? How have these advances helped efforts to get clean water?

### Gender politics

How is access, or lack of access, to water and sanitation a gendered issue?

### Social justice and human rights

How are people around the world exercising their right to water?

### Peace and conflict

How do people get clean water in times of conflict? What might some barriers be? What environmental impacts to water are caused by conflict?



## THE BIG QUESTIONS

### 1 Where did it begin?

- Over two-thirds of Earth's surface is covered by water. However, as our population grows, we are putting increased pressure on our planet's freshwater resources through our activities and consumption.
- One of the biggest problems is **water pollution**. Pollution happens when substances build up in our water to such an extent that they cause problems for animals, people and our ecosystems. Human activity causes waste, which can severely impact our water ecosystems. Sewage, fertilizers, wastewater, chemical waste, radioactive waste, oil and plastics can end up in our waterways if we don't manage them properly.
- Insufficient water caused by pollution, conflict, distance to water sources, overuse of water and drought impacts our lives and the health of our planet. When there isn't enough clean water to use, health, resistance to disease, hunger and hygiene are all affected and can hinder a person's ability to escape the **cycle of poverty**.
- Warming temperatures, changes in precipitation, runoff and rising sea levels, erosion, drought and **salinization** are becoming large problems for our water resources because of climate change. For the sake of our society and our planet, we need to protect water sources.

### 2 Why does this issue matter?

- **Access to clean water is still an issue**  
Around 1.8 billion people are using a source of drinking water that has fecal contamination, and 2.4 billion people lack access to basic sanitation services such as toilets or latrines. **Water scarcity**, or the lack of sufficient available water resources to meet our needs, affects more than 40 per cent of the global population.<sup>1</sup>
- **Our water is stressed**  
37 per cent of countries are experiencing high to extremely high levels of **water stress**, including Cyprus, Jamaica, Qatar, Singapore and the United Arab Emirates.<sup>2</sup> When water stress occurs, demand for water exceeds the available amount during a certain period. This can deteriorate the quantity and quality of freshwater resource through aquifer over-exploitation, pollution or the drying out of rivers.
- **We're the problem and solution**  
Environmentally, more than 80 per cent of wastewater resulting from human activities is discharged into rivers or seas without any treatment, leading to various forms of pollution.<sup>3</sup> When we manage our water sustainably, we can improve our food and energy production, preserve our water ecosystems and their biodiversity and take action on climate change.



## 3 Who and what are affected?

- **Children**

Diseases related to water and sanitation are among the major causes of death in children. More than 800 children die every day from diarrheal diseases linked to poor hygiene.<sup>4</sup> In addition, children are often responsible for fetching water to use in their homes, often making day-long trips and sacrificing their education to support their families.

- **Women**

In many countries, collecting water is women's work. Much of their time is spent finding adequate water resources, which can take time away from paid work or education. At home, school, or work, lack of adequate sanitation can impact health, safety and dignity for many women. A lack of access to water and sanitation can make it hard for women within a cycle of poverty to escape as they may not be able to attend school or earn an income.<sup>5</sup> This lack of access can heighten the **double burden** or **dual burden** effect that women in the Global South often face.

- **Indigenous Communities**

Many Indigenous communities do not have access to clean water and sanitation. The Neskantaga First Nation in northern Ontario has had a boil-water advisory, meaning water must be sterilized before drinking, for more than 20 years. About 73 per cent of First Nations water systems are at high to medium risk of contamination, with more than 160 water advisories in nearly 120 First Nations communities in Canada.<sup>6</sup> Investment in sanitation and water purification are a high priority to ensure the health and well-being of Indigenous Peoples on and off of reserves.

- **Ecosystems**

Water pollution is catastrophic for our water ecosystems. Close to 40 per cent of America's rivers and 46 per cent of America's lakes are too polluted for fishing, swimming or aquatic life.<sup>7</sup> In Canada, nearly all 167 **sub-watersheds** are currently subject to some form of environmental pollution, some with multiple threats, and more than half of these sub-watersheds have experienced a significant loss of ecosystems.<sup>8</sup> When we are careless with our disposal of waste, when we overconsume, when we introduce chemicals and waste into our water supply, when we disrupt a land's natural environment, or there is an occurrence of invasive species, our environment pays the price. Organisms die, food chains are disrupted and ecosystems can be destroyed.



## 4 What needs to be done?

- Progress has been made to increase access to clean drinking water. In 2015, 6.6 billion people, or 91 per cent of the population, used an improved drinking water source, an improvement from 82 per cent in 2000.<sup>9</sup> Adopting an **integrated water resource management** approach helps promote coordinated efforts to develop and manage water resources to maximize their social and economic benefits while ensuring the sustainability of our ecosystems.
- In 2015, an estimated 663 million people were using unimproved water sources or surface water, and in 2012, it was estimated that 1.8 billion people were exposed to drinking water sources contaminated with fecal matter.<sup>10</sup> Investing in wastewater treatment can help improve ecosystem health and improve the quality of water we drink and use daily.
- Ongoing access to safe drinking water and adequate sanitation services are some of the most effective ways to prevent disease and improve human health.
- Integrating a gender-sensitive approach to water management can have a positive impact on the effectiveness and sustainability of interventions to conserve water resources. Involving different genders in the design and implementation of interventions can lead to new solutions for water problems which can also improve gender equality, clean water access for all, the effectiveness of government interventions and also make projects more sustainable.
- Identifying water scarcity and water pollution through education and awareness can help fight ignorance or passive positions on the issue. If we don't have enough clean water, we won't survive. This is every global citizen's issue. By challenging our community and leaders to remain accountable and active, we can address this issue by 2030.

“Anything else you're interested in is not going to happen if you can't breathe the air and drink the water. Don't sit this one out. Do something.”

**Carl Sagan**  
American astronomer  
and author



## CONNECTION TO THE OTHER GOALS



Access to sanitation facilities, closer proximity to clean water sources and improved resilience against droughts and floods impact all of us, but particularly impact women and girls. By finding solutions to water security and sustainability that are considerate of different gender experiences, we can improve our impact on the environment and empower our girls and women in the process.



Building sustainable cities, ending hunger, taking action against climate change and improving our health and well-being are all connected to accessing clean water. It is important to see how our actions and attitudes are interrelated with our environment and our water.

“ The water is female; water is life and so we as women must stand with the water. We stand in prayer and in civil disobedience. We stand because we must protect our children and grandchildren. ”

**LaDonna Brave Bull Allard**

Lakota historian, activist and founder of Standing Rock resistance camp



## Consequences of inaction

- If we do not do anything about our world's water qualities and quantities that are at risk, the costs will be huge for our society and our economy. Without proper sanitation infrastructure, worldwide, more than two million people will continue to die every year from diarrheal diseases. Poor hygiene and unsafe water are responsible for nearly 90 per cent of these deaths and mostly affect children.<sup>11</sup>
- When we fail to invest in water and sanitation, we are losing out on 4.3 per cent of sub-Saharan African GDP. The World Bank estimates that 6.4 per cent of India's GDP is lost due to adverse economic impacts and costs of inadequate sanitation.<sup>12</sup>
- Without better infrastructure and management for our water resources, millions of people will continue to die every year and there will be further losses in biodiversity and ecosystem resilience, undermining prosperity efforts towards a more sustainable future.

## REFLECTION AND ACTION QUESTIONS

- 1 How do you feel about the issue now that you know more about it?
- 2 How might this issue have been prevented? What could have been done differently?
- 3 How has this problem changed over time? Where do you see it going in the future?
- 4 What questions do you still have?

“We forget that the water cycle and the life cycle are one.”

**Jacques Cousteau**  
French explorer  
and conservationist



## RESOURCES

### How to take action

- **Understand your impact.** Be careful what you throw down the drain or in the toilet—it all ends up in our oceans, rivers, and lakes—nobody wants to be swimming in your leftover paints or fertilizers.
- **Use water wisely.** Read this list of more than a hundred ways to conserve water from [Water - Use It Wisely](#). Challenge yourself and your community to try these practices and see the difference one person can make.
- **Shorten those showers.** We all have a part to play in using less water. Start by taking shorter showers. Make yourself a playlist of songs that is about six minutes long—when the music stops, time to get out of the shower. Turn off the tap between brushes and conserve water by reducing unnecessary flushing.
- **Get active and get vocal.** Learn about water scarcity and water pollution issues in your community and explore how water insecurity, privatization, or pollution are impacting your community. Identify what needs to change and who you can ask to help change that. Talk to your representatives and leaders and let them know you care about water. Join a cause like [World Water Day](#) or [World Toilet Day](#) and make some waves.
- **Talk about it.** Sanitation might be taboo or make people sheepish, but it is also important to break down the stigma, particularly for girls and women. Challenge people and help spread awareness about how water access affects everyone uniquely, yet is a fundamental right.
- **Get informed.** Understand the impacts of large corporations on water sources around the globe. Learn more about divestment efforts in your region and take a stand!
- **Participate in a water walk fundraiser awareness campaign.** For a period of time, track how much water you use and how long it takes you to get it. Or, put a policy in place where water must be filtered or gathered from a common area to simulate the challenges of collecting water every day. Learn more from this [video](#).





## Educational resources

- The World's Largest Lesson page for Goal 6 has downloadable comics, posters and lesson plans [here](#). [Clean Water For All](#) is a lesson plan (ages 8 to 14) that addresses water pollution through brainstorming, group work and physical demonstrations.
- National Geographic has several lesson plans, activities, and more covering various topics available [here](#). Explore the site and search for water related units and lessons. Learn more about water pollution and see how it is impacting our planet in this [video](#).
- Try [AMANZI](#), an activity for all ages that takes 60 to 90 mins. AMANZI explores water access issues, allowing students to take on the role of families who experience barriers in accessing clean water.
- [Walking For Water](#), an activity from Development and Peace, explores global disparity through unfair division of the world's resources. It is appropriate for all ages, in groups of 12 to 40 people.
- Use the [Students Rebuild: Water Challenge](#) curriculum kit to explore how water is a basic need and how millions lack access to clean water around the world. Built as a three-day lesson in partnership between Global Nomads Group, Charity Water, and Students Rebuild, the kit focuses on the global water crisis using activities such as a water walk, case studies and calculating personal water use.
- Discover [Operation Water Drop](#), [Operation Water Pollution](#), [Operation Community Water Footprint](#), [Operation Water Health](#) or [Operation Water Spirit](#), initiatives and kits developed by the [Safe Drinking Water Foundation](#). These kits help students of all ages test their local drinking water, learn about water pollution, calculate how much raw water is used personally and communally, investigate waterborne illnesses and contaminated water and understand Indigenous cultures and beliefs related to water issues.
- Use the [Lake Winnipeg Water Stewardship](#) curriculum guide from Manitoba Education. The document guides educators through a variety of big ideas, supporting principles and phases that allow students to connect with water issues. Designed for Grade 8 students, this resource allows students to gain a deeper understanding of water systems and concepts related to sustainable development.



## CASE STUDIES

### 1 Water and Sanitation for the Urban Poor (WSUP)

Organizations like Water and Sanitation for the Urban Poor (WSUP) are working with local water and sewage companies to improve water quality and access for Kenya's poor. In 2013, 52,000 low-income residents were able to benefit from the investment in new water pipelines located within the community, rather than on private land, allowing residents to save money, time and energy for other essential tasks.

### 2 Standing Rock Sioux Tribe Reservation

In 2016, members of the Standing Rock Sioux Tribe reservation and protesters gathered together to resist the development of the Dakota Access Pipeline.<sup>13</sup> Protesters were resisting the pipeline's close proximity to sacred land and its impact on the quality of water sources for the reservation. The protests were an act of environmental stewardship and an expression of concerns about the land and drinking water in the face of development.

### 3 Maarifa Centres

In Kenya, Uganda and Tanzania, Maarifa Centres are popping up in rural areas to help farmers share information and collaborate on solutions for drought and crop failure. In Swahili, 'maarifa' means 'knowledge'. These centres are built out of shipping containers and offer wi-fi and information and communication technology (ICT) to help farmers learn new techniques and manage water shortages. They also actively support the involvement of women in agriculture.

### 4 Emmanuel International Canada

Emmanuel International Canada is working in Malawi to provide clean water and improve sanitation in 92 rural communities. The project involves drilling eight boreholes, digging 24 shallow wells, rehabilitating 60 non-functional water points and constructing 3,576 improved sanitation facilities. Communities are being taught improved hygiene practices and will be helped to form water point committees.



### 5 Hope International Development Agency

Hope International Development Agency is working in the Philippines and Ethiopia to promote health and self-reliance for rural families to access clean water, benefit from agricultural training and increase their food security. Through health and hygiene education, communities are building their capacity to pipe in clean water and improve their resilience to climate change.

### 6 Canadian Lutheran World Relief

In collaboration with the Lutheran World Federation, Canadian Lutheran World Relief is working to improve the access and provision of potable water for South Sudanese refugees in the Tierkidi Refugee Camp in Ethiopia. This project seeks to increase access to potable water for approximately 12,000 South Sudanese refugees through the construction of three shaded water yards for two identified schools and connecting them to the permanent water system in Tierkidi Refugee Camp.

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## End notes

<sup>1</sup> <http://www.un.org/sustainabledevelopment/water-and-sanitation/>

<sup>2</sup> <https://www.wri.org/blog/2013/12/world%E2%80%99s-36-most-water-stressed-countries>

<sup>3</sup> [http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6\\_Why-it-Matters\\_Sanitation\\_2p.pdf](http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6_Why-it-Matters_Sanitation_2p.pdf)

<sup>4</sup> [https://www.unicef.org/media/media\\_92918.html](https://www.unicef.org/media/media_92918.html)

<sup>5</sup> <https://www.youtube.com/watch?v=ZkStObhWjnl>

<sup>6</sup> <https://canadians.org/fn-water>

<sup>7</sup> <http://eschooltoday.com/pollution/water-pollution/important-water-pollution-facts.html>

<sup>8</sup> <https://www.theglobeandmail.com/news/national/canada-fresh-water-review-1/article35262579/>

<sup>9</sup> <https://sustainabledevelopment.un.org/sdg6>

<sup>10</sup> <https://sustainabledevelopment.un.org/sdg6>

<sup>11</sup> [http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6\\_Why-it-Matters\\_Sanitation\\_2p.pdf](http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6_Why-it-Matters_Sanitation_2p.pdf)

<sup>12</sup> [http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6\\_Why-it-Matters\\_Sanitation\\_2p.pdf](http://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/6_Why-it-Matters_Sanitation_2p.pdf)

<sup>13</sup> <http://standwithstandingrock.net/>