

# LESSON 1

## Water and Sanitation for All: Bringing the Issue Home

A High School Unit (Grades 9–12)

## THE BIG PICTURE

TOTAL TIME: 1 HOUR

### Objectives

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Students will:

- Become aware of the centrality of water and sanitation in our daily lives.
- Become familiar with the challenges facing people without ready access to safe water and sanitation.
- Discuss the work UNICEF is doing to bring water, sanitation, and hygiene to children.

### Vocabulary

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The following words may not be daily occurrences in a student's vocabulary. Feel free to use this list as a resource for students to expand their working vocabulary as they encounter these words in this unit.

- CEE/CIS
- Change agent
- Conservation
- Contaminant
- Developing Countries
- Drought
- Feces
- Hygiene
- Industrialized Countries
- Latrine
- Sanitation
- Sustainable development

### Materials Needed/Setup

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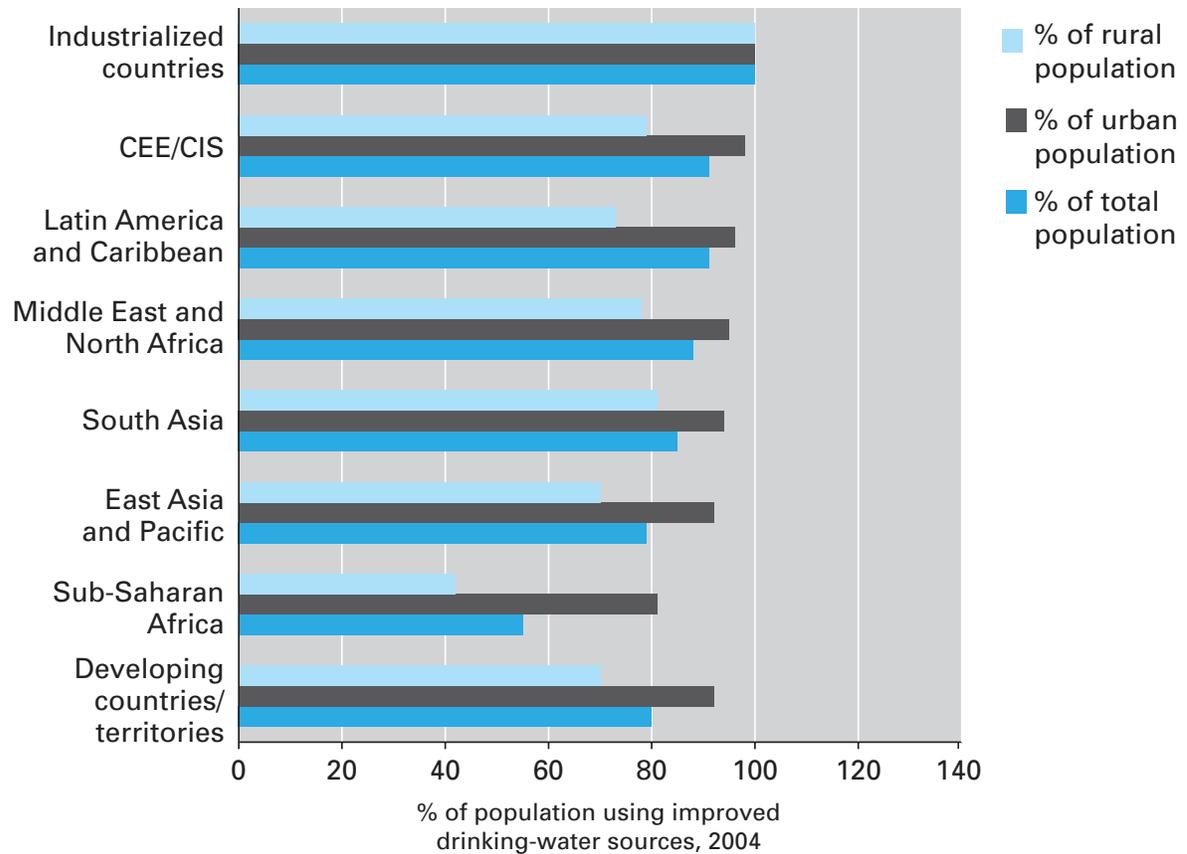
- Handout #1 "Around 80 percent of the developing world has access to improved water sources"
- Handout #2 "Only half of the population in the developing world has access to adequate sanitation"
- Handout #3 "Water, Sanitation and Hygiene (WASH): Links to health, education and development"
- Handout #4 "UNICEF Voices of Youth: Water, Sanitation and Hygiene Fact Sheet"
- Sticky Notes (optional)

## Directions

1. **(10 minutes)** Begin the class by projecting two graphs, Handout #1 “Around 80 per cent of the developing world has access to improved water sources” and Handout #2 “Only half of the population in the developing world has access to adequate sanitation”. Ask students what they notice? What conclusions can they make from the graphs? Is there a discrepancy between regions? Why? What type of impact can a lack of clean water and proper sanitation have on a region and country?
2. **(30 minutes)** Assign the students Handout #3 “Water, Sanitation and Hygiene (WASH): Links to health, education and development” to read. Prior to the reading explain to the students that they should be thinking about the impact of poor sanitation and unsafe drinking water on society and possible causes and solutions. After students have read the text conduct a Think, Pair, and Share activity. Allow a minute or two for students to individually *think* about what they read, then pair students to discuss key pieces of the reading, and lastly have groups share with the class.
 

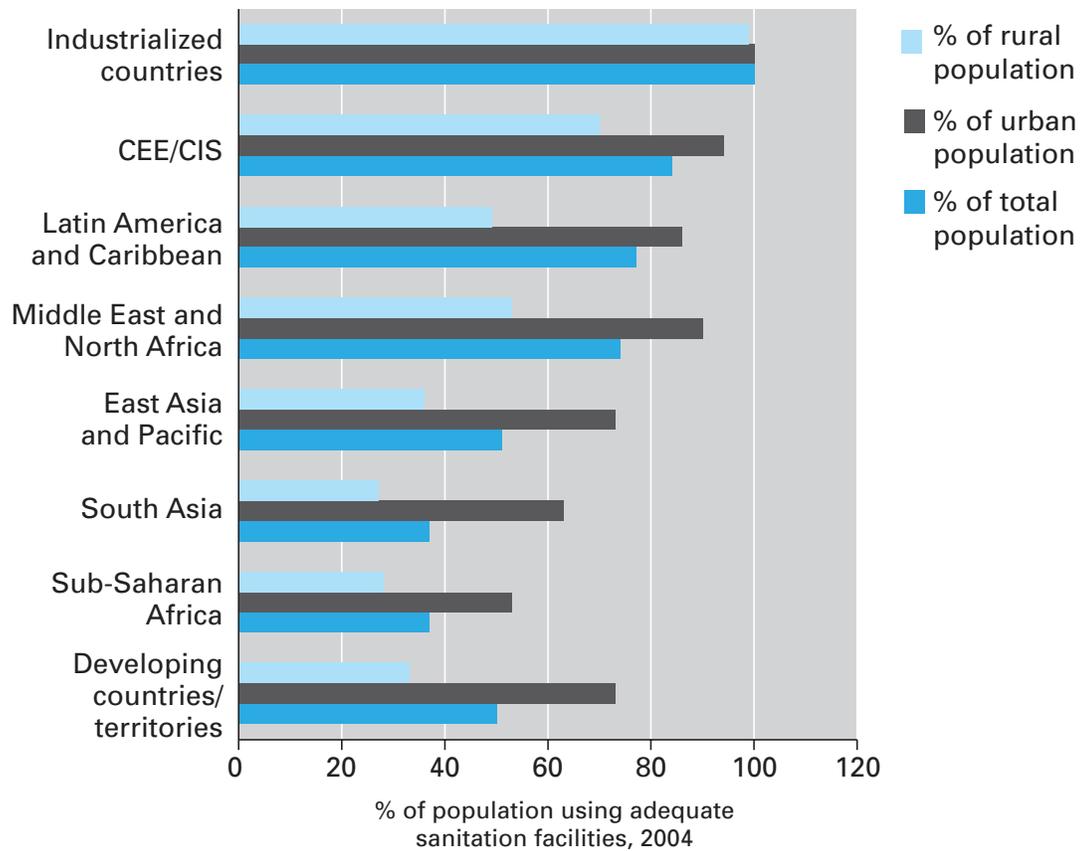
**Handout #4 “UNICEF Voices of Youth: Water, Sanitation and Hygiene Fact Sheet” has been provided as an educator and student reference tool.**
3. **(15 minutes)** Introduce students to UNICEF’s work to address poor sanitation and unsafe water by watching a UNICEF video found at <http://www.youtube.com/user/unicef?blend=1&ob=4> (UNICEF’s YouTube Channel) or <http://www.teachertube.com/videoList.php?pg=videonew&cid=44&sid=45> (TeachUNICEF’s TeacherTube Channel). Students should be prepared to provide examples of how UNICEF is responding to this crisis.
4. **(5 minutes)** Provide each student with two sticky notes and ask them to write one thing they learned from the lesson and one question they have. Ask the students to place these on the wall as they leave the classroom (students could also write their responses on a piece of chart paper). Use student responses to reflect on their understanding and to inform future instruction.
5. **Homework:** Have students locate an electronic or print article that identifies a local, state or national water and/or sanitation issue. If students do not have access to the Internet, print a few examples for distribution. Some possible website and/or news sources might be:
  - Chesapeake Bay Foundation: <http://www.cbf.org/Page.aspx?pid=1000>
  - National Public Radio: <http://www.npr.org/>
  - National Science Foundation: <http://www.nsf.gov/>
  - PBS News Hour: <http://www.pbs.org/newshour/>
  - U.S. Environmental Protection Agency: <http://www.epa.gov/>
  - U.S. Geological Survey: <http://www.usgs.gov/>

## Around 80 Percent of the Developing World Has Access to Improved Water Sources\*



\*Source: State of the World's Children 2008 <http://www.unicef.org/sowc08/statistics/charts.php>

## Only Half of the Population in the Developing World Has Access to Adequate Sanitation\*



\*Source: State of the World's Children 2008 <http://www.unicef.org/sowc08/statistics/charts.php>

## Water, Sanitation and Hygiene (WASH): Links to Health, Education and Development\*

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Clean water is the most fundamental necessity for life. Similarly, everyone needs basic sanitation. These things are essential to health and human dignity, but:

- More than a billion people do not have access to safe drinking water.
- More than two and a half billion people do not have a sanitary way of getting rid of excreta (urine and feces).
- Up to a third of disease globally is thought to be caused by environmental factors such as polluted water and air.

Children are particularly vulnerable to disease. This is because children's bodies are not fully developed, so they have less resistance to illness. Also, in proportion to their weight, young children breathe more air, drink more water and eat more food than adults do, so they take in bigger doses of any contaminants.

### WASH and Health

Poor sanitation, unsafe water and unhygienic practices cause millions of children in the developing world to suffer needlessly from disease. Water- and sanitation-related disease, despite being preventable, remains one of the most significant child health problems worldwide.

Diarrhea is the most serious of these diseases, alone killing 5,000 children a day. Children in developing countries typically have four to five bouts of diarrhea a year. Even when they don't kill, these diarrhea episodes can physically and mentally stunt children, affecting them for the rest of their lives. By weakening children, diarrhea increases mortality rates from other opportunistic diseases, including ARI (acute respiratory infections). ARI and diarrhea together account for two-thirds of all child deaths worldwide.

Millions of other children are made sick, weakened or are disabled by other water- and sanitation-related diseases and infections including cholera, malaria, trachoma, schistosomiasis, worm infestations and guinea worm disease. And in a growing number of countries, natural or man-made pollution of water sources with dangerous contaminants threatens millions of people.

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\*Source: UNICEF Voices of Youth [http://www.unicef.org/voy/explore/wes/explore\\_1847.html](http://www.unicef.org/voy/explore/wes/explore_1847.html) and UNICEF Water, Sanitation and Hygiene [http://www.unicef.org/wash/index\\_healthandeducation.html](http://www.unicef.org/wash/index_healthandeducation.html)

### **WASH and Education**

A high percentage of children suffer from intestinal infections caused by parasites as a result of poor hygiene and inadequate sanitation. Parasites consume nutrients, aggravate malnutrition, impede children's physical development and result in poor school attendance and performance. Household chores, such as fetching water, keep many girls out of school. Also, the lack of separate and decent sanitation and washing facilities in schools discourages girls from attending school full time and forces some to drop out. The majority of the 121 million school-age children not in school are girls.

### **WASH and Development**

Poor water and sanitation exact a heavy economic cost in terms of health spending, loss of productivity and labor diversion. If everyone in the world had access to basic water and sanitation services, the reduction in diarrheal disease alone would save the health sector \$11.6 billion in treatment costs and people would gain over 5.6 billion productive days per year. When the potential economic gains of providing basic, low-cost water and sanitation facilities are added together, the developing world could save as much as \$263 billion a year.

### **WASH and HIV/AIDS**

Promoting improved hygiene practices and increasing access to water and sanitation facilities helps to reduce opportunistic infections among people living with HIV/AIDS. Better access to facilities also reduces the burden on households caring for AIDS-affected family members. Less time spent on fetching water allows caregivers – who are usually women and girls – more time and energy for coping with the disease or for working outside the home. Appropriate sanitation also helps to ensure that AIDS sufferers, many of whom experience severe bouts of diarrhea, have access to clean and private facilities.

Action on these problems produces results. In particular, improved sanitation and water sources, combined with information about hygiene and how to prevent infection, dramatically improve the health of communities.

The urgency for this kind of action is recognized in the Millennium Development Goals. Governments have promised to make sure that no development will damage the environment. More specifically, they have committed themselves to halving, by the year 2015, the proportion of people in the world without safe water and 'improved sanitation'. At current rates of progress, we will miss the sanitation target, but we will meet the water target.

## UNICEF Voices of Youth: Water, Sanitation and Hygiene Fact Sheet\*

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- Up to one-third of global disease is caused by environmental factors, such as polluted water and air, according to estimates by United Nations agencies and the World Health Organisation.
- Just over a billion people still do not have access to safe water. However, good progress has been made since 1990: about the same number of people have gained access to safe water, improving the global total who have access from 77 percent to 83 percent.
- In proportion to population size, the regions with the least access to safe water are the Pacific islands (48 percent of people do not have access) and sub-Saharan Africa (42 percent do not have access). The percentages of people without access are much lower in Asia, ranging from 12 percent in Western Asia to 22 percent in Eastern Asia. However, because the population of the Asian regions is so large, these percentages represent a huge number of people: 674 million, which is about two-thirds of the global total without access to safe water.
- Access to sanitation is worse. An estimated 2.6 billion people — 42 percent of the world's population — do not have access to improved sanitation facilities (household connection to a clean water supply). The lowest rates of access are in sub-Saharan Africa (64 percent are without access) and South Asia (63 percent).
- In the Millennium Development Goals, governments promised to halve the proportion of people without access to safe water and improved sanitation by 2015. At current rates of progress, we will meet the water target, but we will miss the sanitation target by half a billion people.
- Poisonous chemicals in the environment are responsible for about 2 percent of all deaths by injury in developed countries, and 5 percent in developing countries, the United Nations Environment Programme says.
- Diarrheal diseases caused by dirty water and poor sanitation claim the lives of 1.8 million children a year, and seriously damage the health and development of millions more.
- In major emergencies, the two most deadly health risks are insufficient or unsafe water and inadequate sanitation, which cause disease outbreaks. So providing safe water and adequate sanitation is critical.
- Water-related diseases are preventable, and simple measures work, such as washing hands with soap and water after contact with feces, and before eating.
- The safe disposal of feces (so that they do not get into the water supply or contaminate the environment in other ways) is equally crucial in the battle against diarrhea.

\*Source: UNICEF Voices of Youth [http://www.unicef.org/voy/explore/wes/explore\\_1856.html](http://www.unicef.org/voy/explore/wes/explore_1856.html)