

## Measuring Your Impact 14

### Gaining Access to Safe Water and Proper Sanitation

One of the main causes of diarrheal disease is the transmission of pathogenic microorganisms through contaminated fresh water. One way to compare countries is to assess the percentage of a country's population that has access to technologies that ensure safe water and sanitation (defined by the World Health Organization as improved water sources and improved sanitation). Based on the data in the table below, answer the following questions.

Country	2000 % Total population with sustainable access to improved drinking water sources	2006 % Total population with sustainable access to improved drinking water sources	2000 % Total population with sustainable access to improved sanitation	2006 % Total population with sustainable access to improved sanitation	2000 Deaths among children under five years of age due to diarrheal diseases (%)	Water Footprint* (m <sup>3</sup> /capita/year)  Global Average= 1,240m <sup>3</sup> /capita/year	% Water derived from outside of the country
United States	99.0	99.0	100.0	100.0	0.1	2,483	19
China	80.0	88.0	59.0	65.0	11.8	702	7
India	82.0	89.0	23.0	28.0	20.3	980	2
Japan	100.0	100.0	100.0	100.0	0.4	1,153	64

\*Water Footprint is defined by the Water Footprint Network as “the volume of water needed for the production of goods and services by the inhabitants of the country.”

Sources: Water Footprint Network, <http://www.waterfootprint.org/?page=files/home> ;  
World Health Organization Core Health Indicators.

- (a)
- List the countries in order from the highest to lowest percentage of deaths among children under five due to diarrheal diseases.
  - How does this ranking compare with access to improved drinking water sources and improved sanitation for the year 2000?
  - For each country, use the 2006 data to predict deaths among children under five due to diarrheal diseases.
- (b) Based on your answers to (a), how could each country reduce the death rate due to diarrheal diseases of children under five years of age?

- (c) For each country, calculate the ratio of its water footprint to the global average. Based on the definition of water footprint, state a relationship between the ratios calculated and water pollution.
- (d) Even if each of these countries was able to achieve zero water pollution, discuss two reasons why poor water quality could still be a problem.