

Unit: 4
Rural Water

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Introduction

- A direct relationship exists between water, sanitation, health, nutrition and human well being. The magnitude of the challenge is understood by World Health Organization (WHO) estimates ascribing to about 80% of all sickness and disease to lack of water and sanitation and evidence relating to higher incidence of communicable diseases such as diarrhoea cholera, malaria etc.
- The Sustainable Development Goals have committed the international community to expand international cooperation and capacity building on water and sanitation related activities and programmes, and also to support local communities in improving water and sanitation management. Through Goal 6, the countries of the world have resolved to **achieve universal access to safe drinking water and adequate sanitation and hygiene** to all in the next fifteen years.

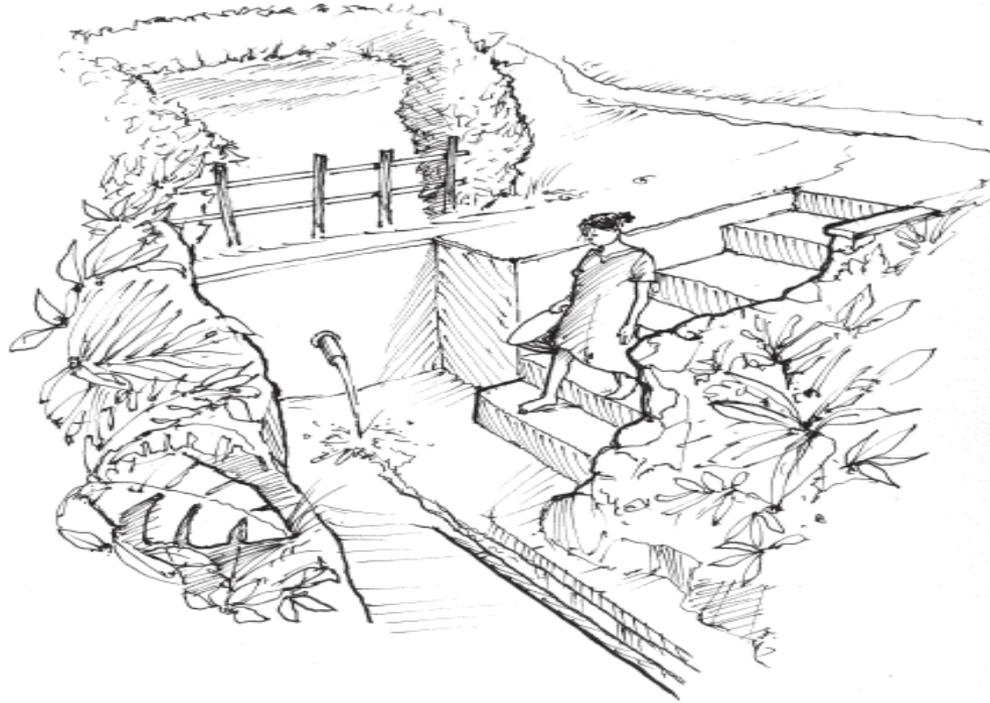
Introduction

- The overall proportion of **Indian** households with access to improved **water sources** increased from 68% in 1992-93 to 89.9% in 2015-16. However, in 2015-16, 63.3% of rural households and 19.7% of urban households were not using improved sanitation facilities (UN).
- the National Rural Drinking Water Programme, and Namami Gange, which aims at the conservation of the River Ganga are two flagship programmes which aim for providing universal access of safe drinking water in India

Sources of water

- Sources of water:
 - Rain
 - Surface water: Oceans, rivers, streams, tanks, ponds and lakes
 - Ground water: Shallow wells, deep wells, springs

Figure 3.2 *Collecting water from a protected spring*



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- Water supply:
 - Traditional sources/system
 - Modern sources/system
- Traditional sources of water supply:
 - Rivers or canals
 - Ponds
 - Lakes
 - Springs
 - Dug wells
- Modern sources of water supply
 - Boreholes
 - Piped water supply
 - Rainwater harvesting
 - Bottled water

Figure 3.3 *Handpump on a borehole*

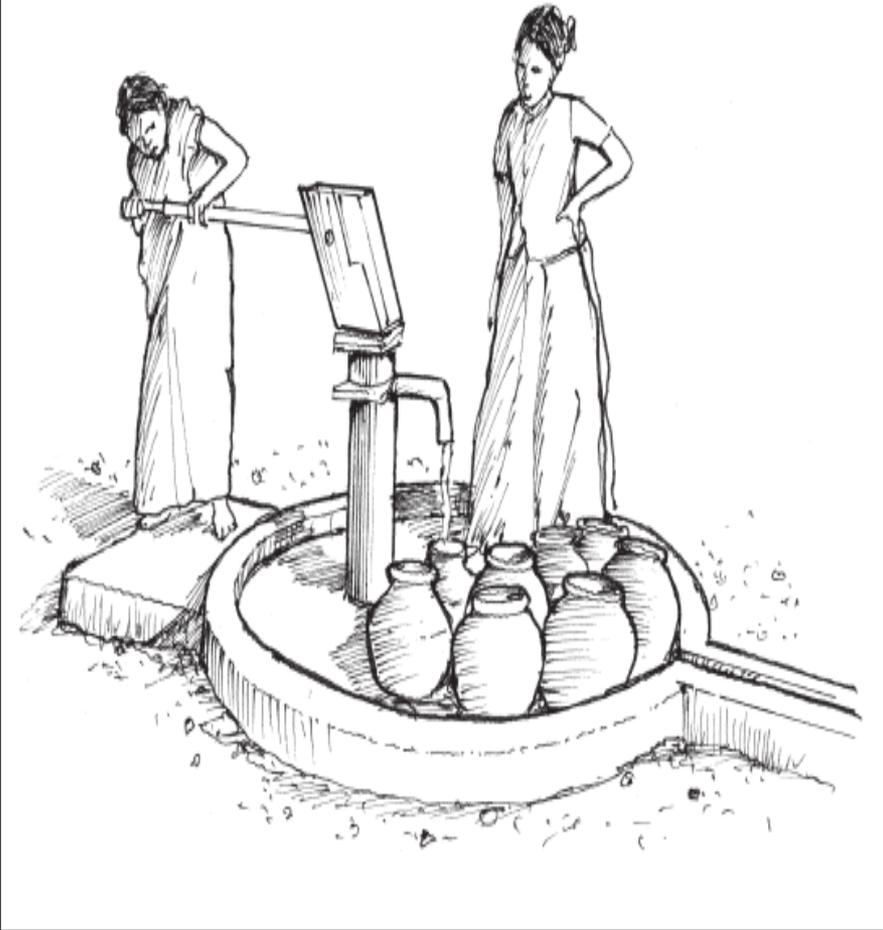


Figure 3.4 *Single standpost with surround*

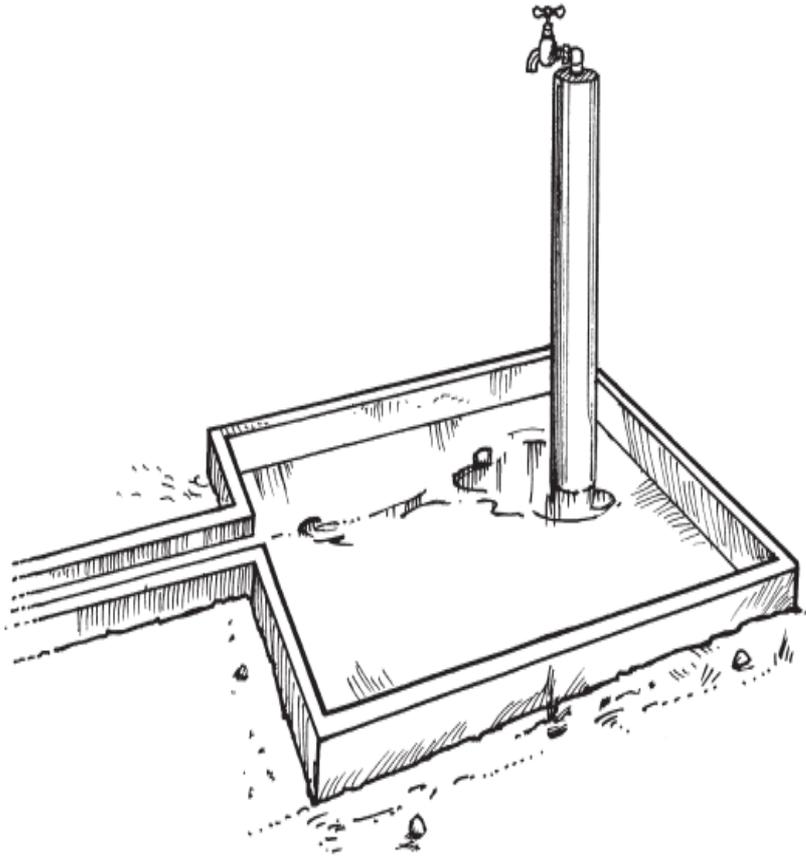
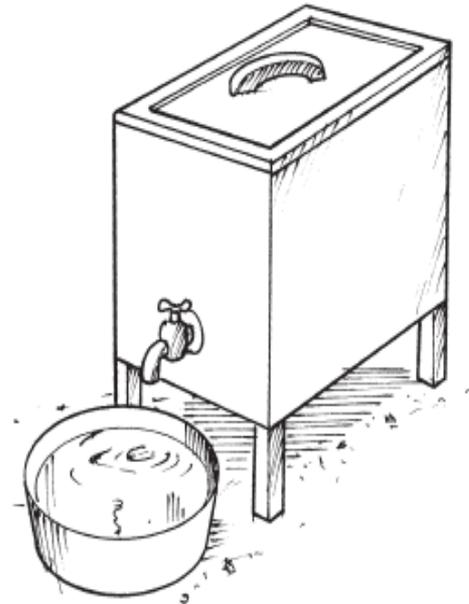


Figure 3.5 *Household storage container*



Concept of Safe Drinking water and household water treatment

- **Drinking water** or **potable water** is a water safe enough to be consumed by humans or used with low risk of immediate or long term harm.
- In most developed countries, the water supplied to households, commerce and industry meets drinking water standards, even though only a very small proportion is actually consumed or used in food preparation. Typical uses (for other than potable purposes) include toilet flushing, washing and landscape irrigation.
- Sometimes the best option for improving water quality is to treat water in the home, by boiling, filtering, chlorinating or leaving the water to settle.

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- Means to treat water at home
 - Boiling
 - Canvas filters
 - Candle filters
 - Disinfection (Chlorination, solar radiation etc.)
 - Settling
- Safe Handling of water
- Monitoring water quality
 - Microbial quality
 - Sanitary inspection
 - Chemical quality

Cont'd...

- Managing community water resources
 - Preventing over-pumping of ground water
 - Water conservation