

Groundwater Perspective and Household Water Treatment Storage Systems

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UN Water Conference

Virtual Side Event '2 with 8'

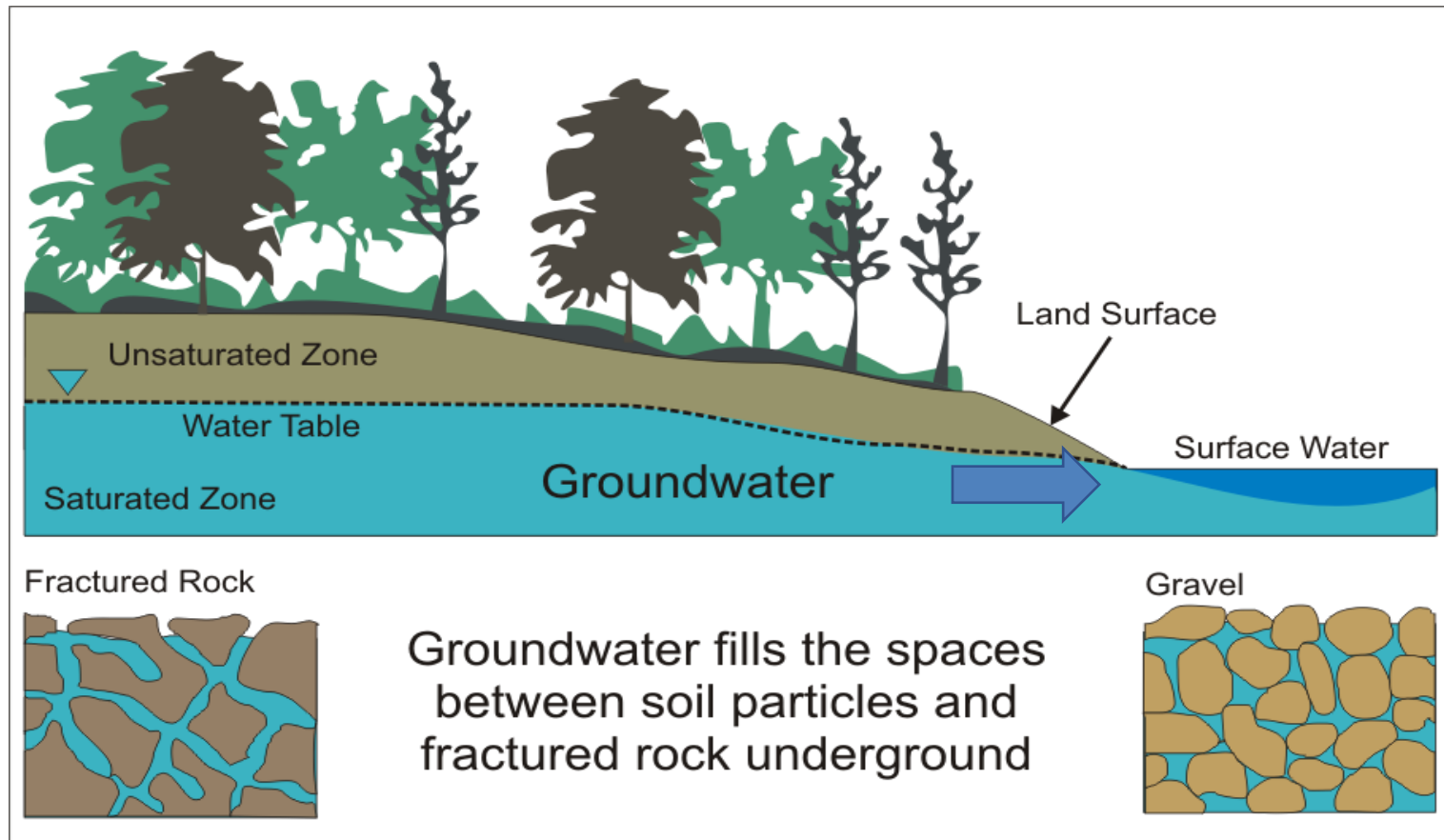
March 21, 2023 at 9 AM EST

recorded



Groundwater is everywhere beneath us

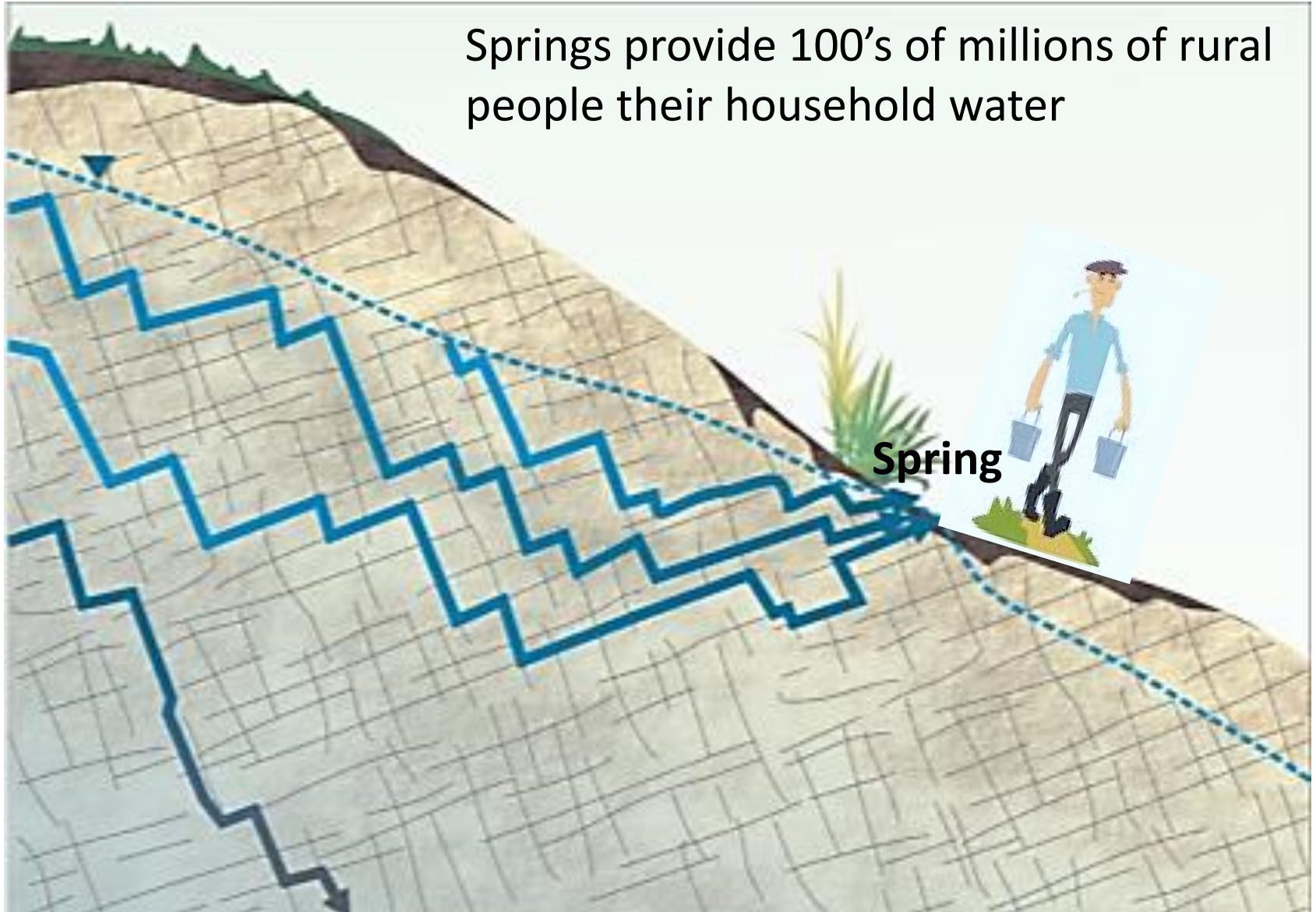
.....accessed by wells, springs and water holes



Nearly all dug wells and water holes have pathogen contamination



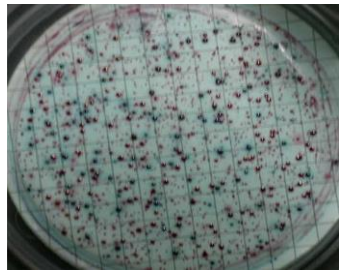
Springs provide 100's of millions of rural people their household water



Even at “improved” spring sources, E. Coli concentrations are commonly high

....at surface improvements generally do not
reduce pathogens

- Example ...after First Rain,
- E. coli = 120/100 ml



>2 Billion People Without Safe Drinking Water

Water poverty: contaminated water and not enough water

Most household drinking water sources are contaminated or are insecure

Pathogens
contamination
is common in
household
wells
even in
developed
countries

In Canada, USA and Europe
1/3 of household wells show
pathogen contamination

Based on standard e-coli and
coliform bacteria tests

Nearly all due to faulty seals

Household wells

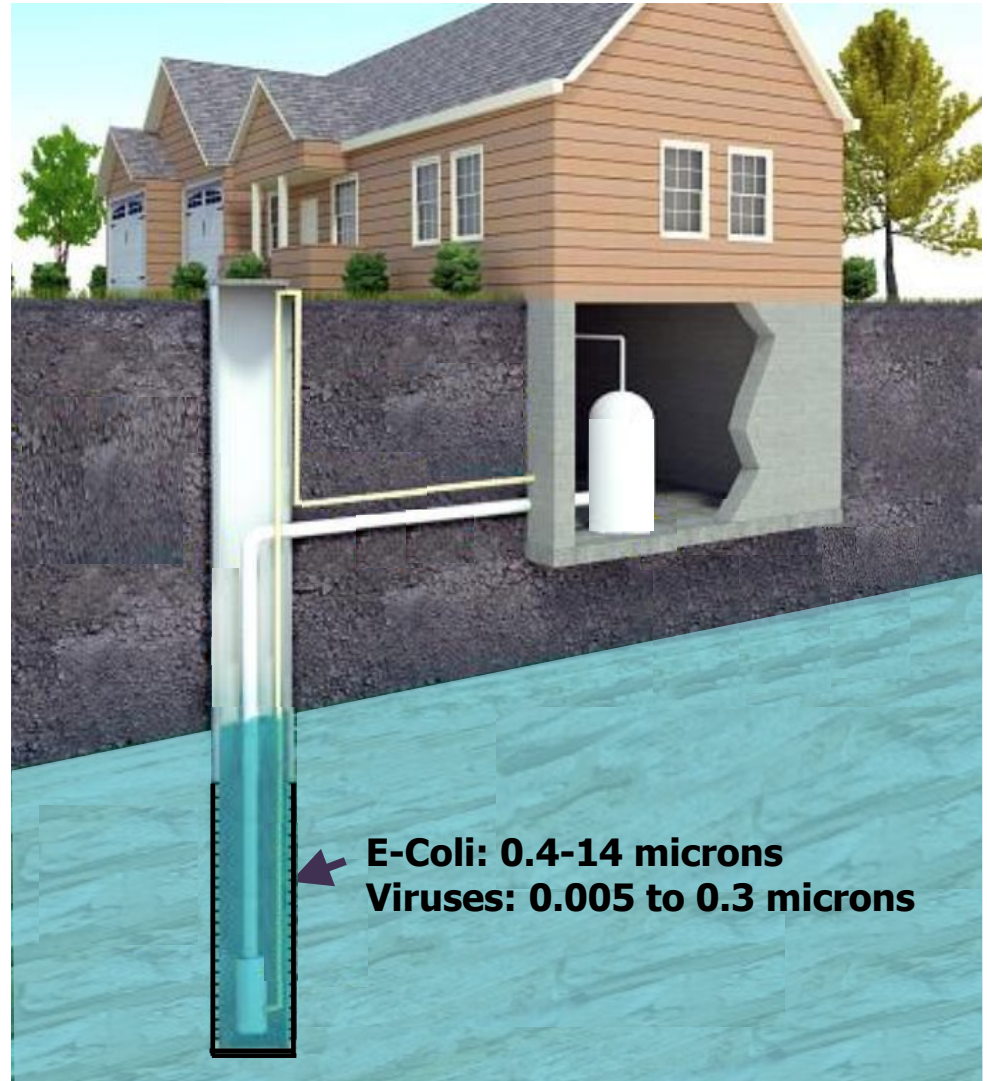
Typical designs in developed countries



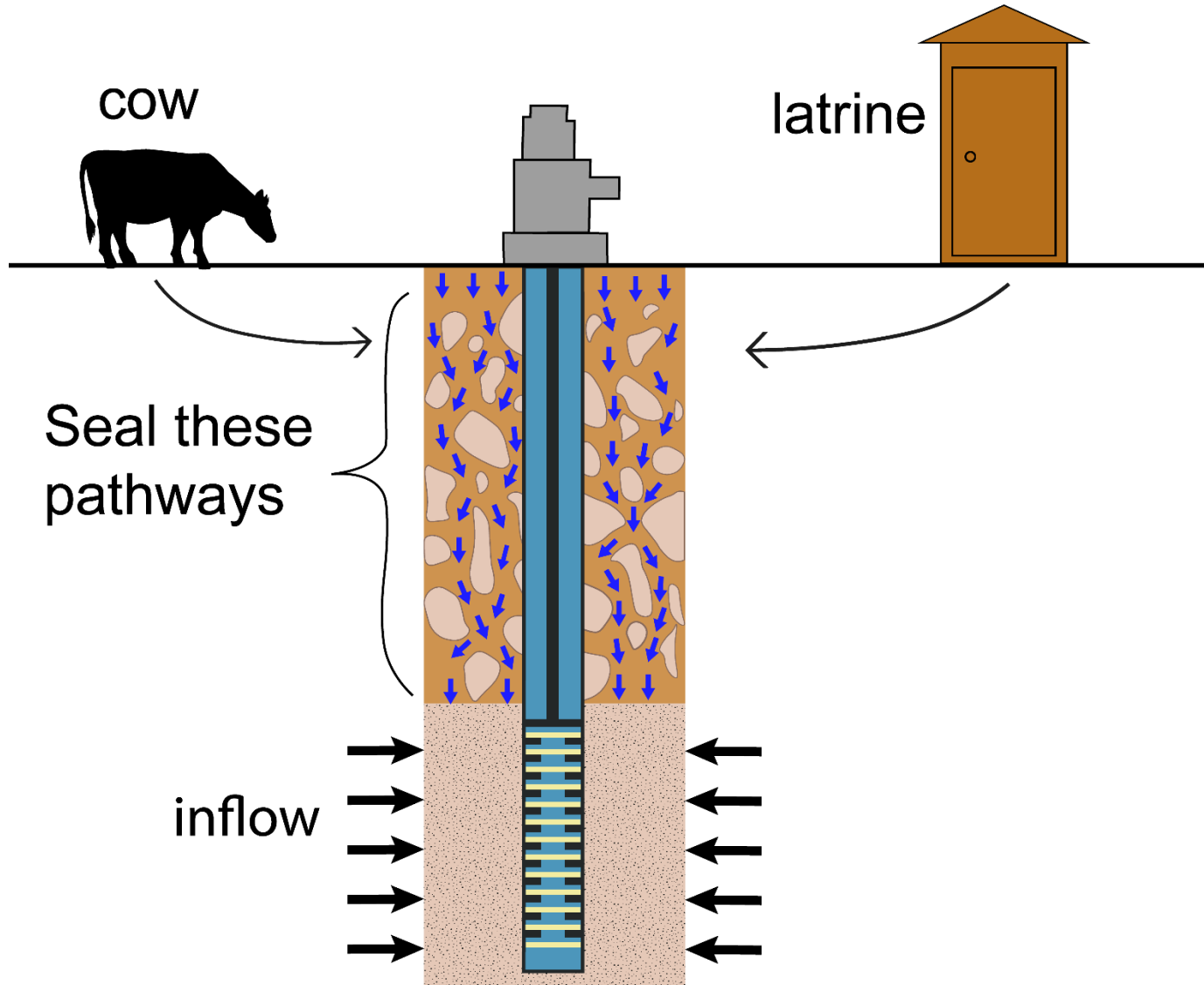
Private household wells in developed countries:

Commonly show pathogen contamination....

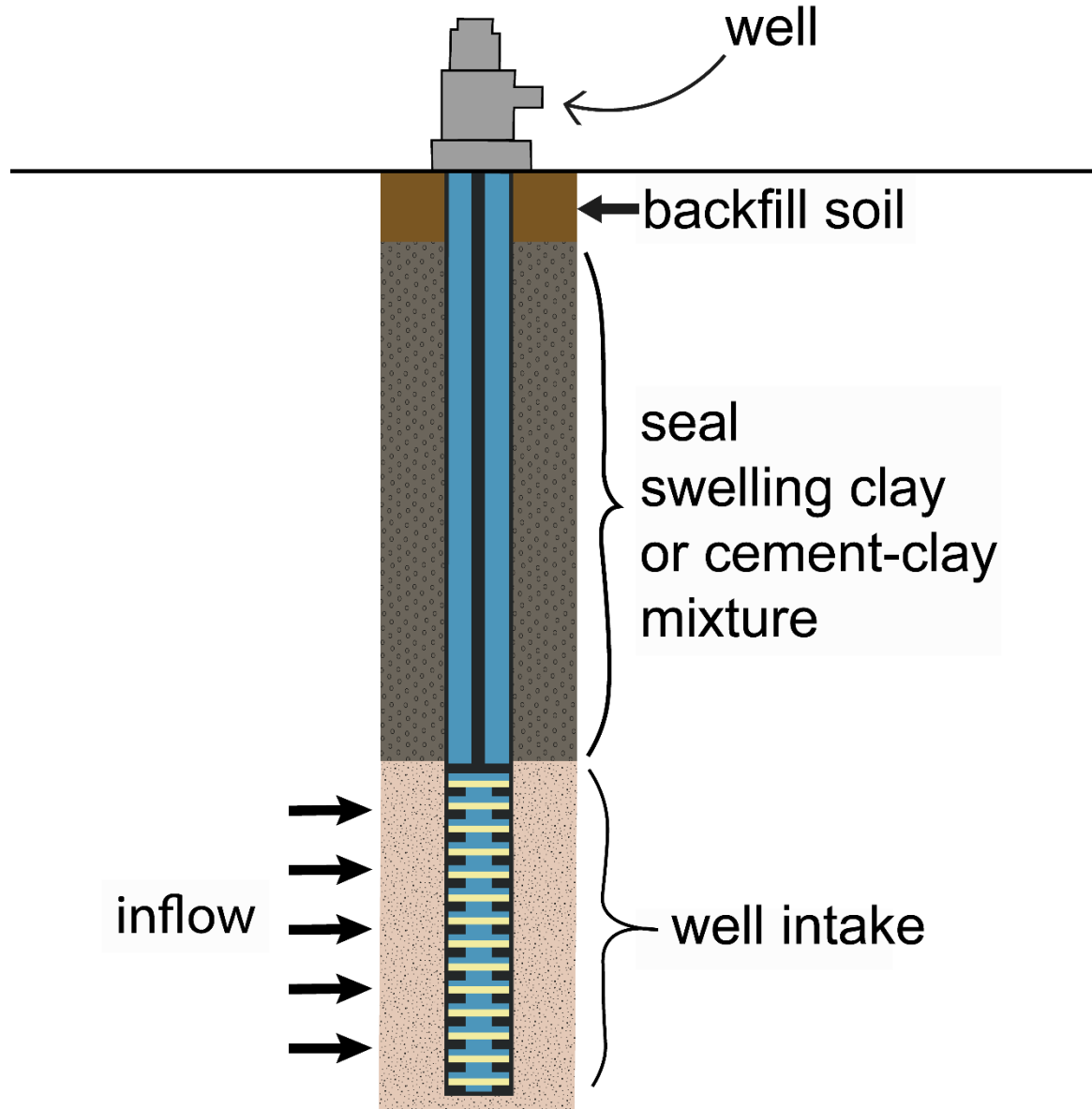
Household water treatment is needed



Most well seals Have pathways from surface



Components of a Water Well




Wells in developing countries:

Most wells are unsafe based on pathogen testing.

Why do so many wells have pathogen contamination?

Requirements for success.....



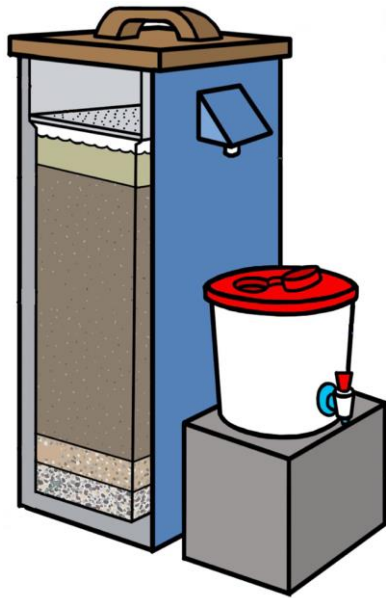
knowledge and
care for success

good seal
composition

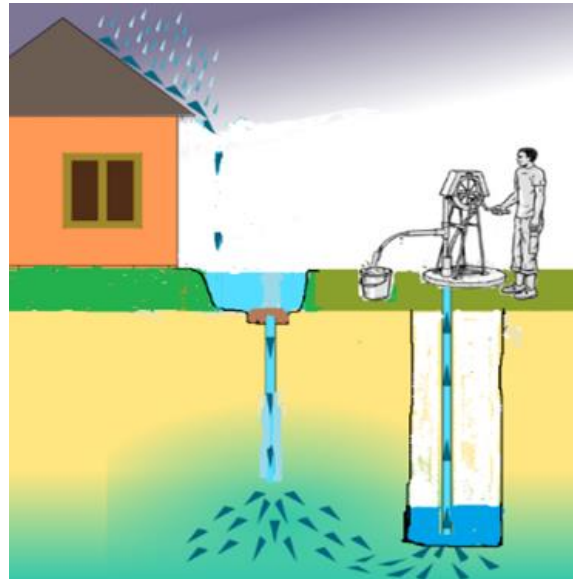
seal emplaced
properly at
appropriate depth

Three components to solving rural water poverty.....filters are essential

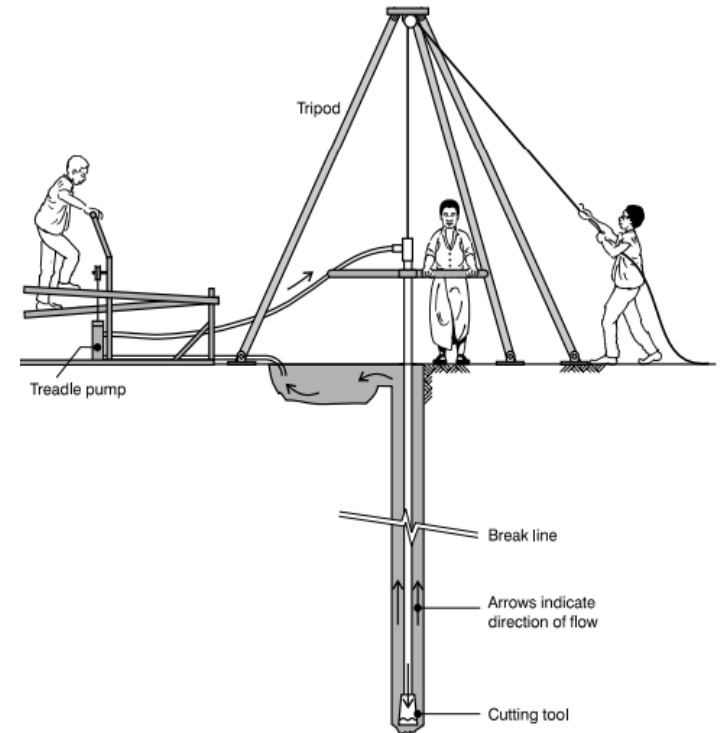
Point of use
water filters



Rainwater
harvesting



Drill small
household wells



HWTS is essential because all water sources should be viewed as insecure... testing is nearly always inadequate

There are a large range of treatment options including Boiling, Chlorine, Filters



Call for Action

At the Stockholm water week 2022 the Dutch water envoy Henk Ovink called for innovation and ACTION NOW, game changing ideas

Based on that call, a small group of people formulated the bold idea

2with8

The Groundwater Project

Education is the solution based on free knowledge...translations

Hundreds of books to be published in many languages

New focus on developing countries

..... Book on well seals in progress



www.gw-project.org

Many translations

PDF downloads in **174** countries