CLEAN DRINKABLE WATER

The Importance of Having Clean Water !

INTRODUCTION

Water is one of the most essential elements for life. About 70% of the human body is made up of water, and it plays a critical role in nearly every bodily function. From regulating temperature to aiding digestion, drinkable water supports our body's systems and helps maintain balance. Without clean and usable water, our bodies cannot perform at their best.

THE ISSUE

Unfortunately, not every person on the planet has access to clean and drinkable water. As of late 2025, approximately 1 in 4 people globally (or 2.1 to 2.2 billion people) lack access to safely managed drinking water. This means roughly 25-27% of the world's population does not have clean water readily available at home.

CLEAN WATER AND SANITATION

A GLOBAL REPORT CARD

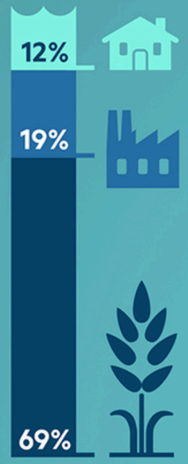
The United Nations (UN) considers access to clean water and sanitation an essential human right. However, over two billion people around the world face obstacles in enjoying this right. The statistics shown here are taken from the UN Sustainable Development Goal 6 Synthesis Report 2018 on Water and Sanitation.

WATER

About **844 MILLION** people lack basic water services, while **2.1 BILLION** people lack clean, safe water available on their living premises.

About **159 MILLION** people around the world collect their drinking water directly from surface water sources such as **RIVERS, DAMS,** or **LAKES**.

AGRICULTURE accounts for about **69 PERCENT** of all freshwater use around the world. The **INDUSTRY** employs about 30 percent of the global workforce, and more than 60 percent of the workforce in sub-Saharan Africa. Other industries account for almost **19 PERCENT** of freshwater use, while **HOUSEHOLD** use accounts for **12 PERCENT** of the global total.

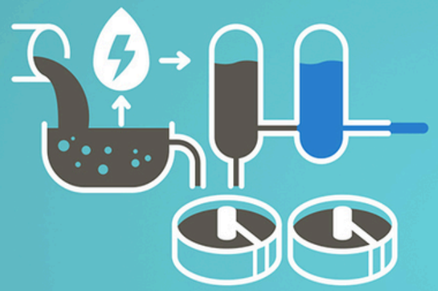


Demand for water for industrial use in **EUROPE** has decreased in recent years; remained at steady but high levels in **NORTH AMERICA**; and increased throughout **AFRICA, ASIA, AUSTRALIA AND OCEANIA, AND SOUTH AMERICA.**

SANITATION AND HYGIENE

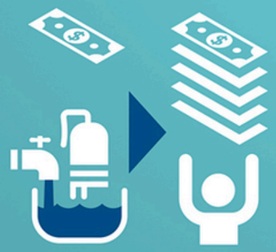
In 2015, about **2.3 BILLION** people lacked basic sanitation services, while **4.5 BILLION** lacked a managed sanitation service involving safe treatment or disposal of sewage.

Nearly **900 MILLION** still practiced open defecation.



The UN estimates that the amount of energy contained within wastewater in the form of biofuel is about 5 to 10 times greater than the energy required to treat the wastewater, which provides incentive to invest in innovative wastewater treatment.

In the world's least developed countries, only about **27 PERCENT** of the population has access to soap and water for hand washing on premises.



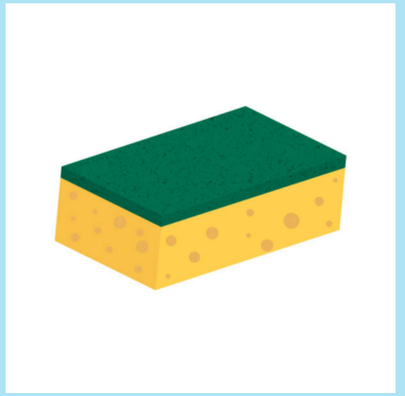
According to the UN, every **$1 US** invested in **WASH** (**WA**ter, **S**anitation, and **H**ygiene) yields **$5 US** in social and economic benefits.

NATIONAL GEOGRAPHIC

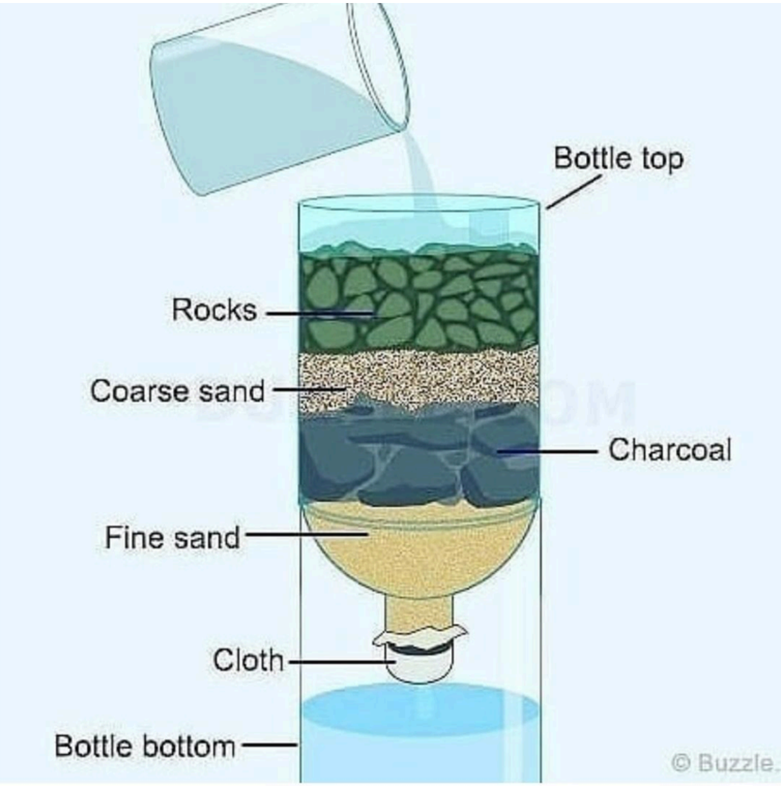
CREATIVE CONCIENCE

This idea was created to target water and sanitation. The idea aims to improve access to cleaner water using simple natural materials that you can find anywhere, and also create a new device to improve how taps and faucets are designed.

THE BIG IDEA



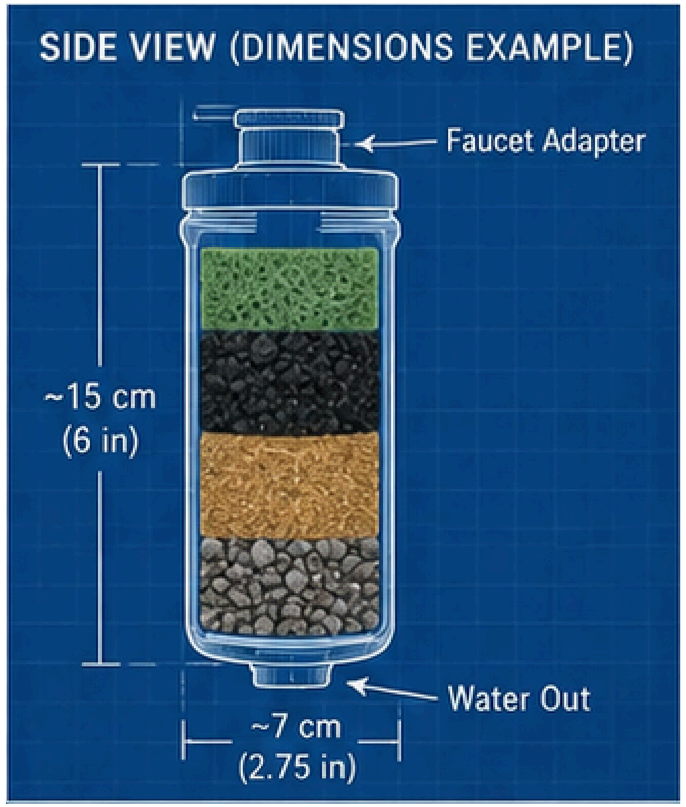
A CHEAP, EASY WAY TO HAVE DRINKABLE WATER



This contraption has been proven to be very effective in tests in the YouTube video by Clay Hayes, titled “How effective are CHARCOAL & Sand Water Filters? Let's find out!” The issue is that most of the time, this contraption takes up a lot of space and isn’t as useful as it could be. Also, it does not kill all bactiria there fore it is also commonly suggested to boil the water too after being filtered out.

Why not miniaturize it?

THE SOLUTION



By creating a smaller version of the filter system within a faucet adaptor, it can be screwed onto any faucet or tap in the world, similar to a garden hose attachment. With this adaptor fitted, you will have filtered water ready to be boiled and ready to use. Using rough calculations, each adaptor

DIY FAUCET WATER FILTER

CLEANER WATER USING SPONGE, CHARCOAL, SAND, AND ROCKS

CROSS-SECTION VIEW

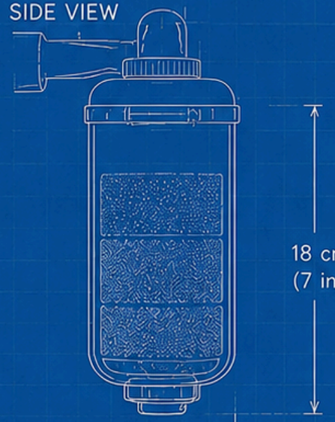
HOW IT WORKS

Water flows downward through each layer of the filter. Each material removes different types of impurities, resulting in cleaner, clearer, and better-tasting water.

LAYER ORDER (TOP TO BOTTOM)

1. ROCKS (supports layers & prevents clogging)
2. SAND (filters fine particles)
3. CHARCOAL (removes chemicals & odors)
4. SPONGE (traps larger particles)

SIDE VIEW



MATERIALS NEEDED

- Clean container (filter housing)
- Sponge (cut to fit)
- Activated charcoal (small pieces)
- Clean sand
- Small rocks or pebbles
- Mesh screen or cloth (optional)
- Faucet adapter
- Sealant tape (Teflon tape)

NOTES

- Replace sponge and charcoal every 2–4 weeks.
- Rinse sand and rocks thoroughly before use.
- For best results, use clean source water.

SOLUTION

COST

Using rough calculations, each adaptor would cost:

- **Budget version: about $10–$15**
- **Better quality version: about $20–$30**

Material	Example	Estimated Cost
Activated charcoal	Activated Carbon Water Filter Media	$6–$12
Clean filter sand	Sand 20kg	$4–$8
Small rocks / gravel	Aquarium Gravel	$4–$7
Dish sponge	Kitchen Sponge 2 Pack	$1–$3
Plastic housing / bottle	Reused bottle or small container	Free–$5
Faucet adapter	Hardware store adapter	$5–$10

Thank you