India is suffering from the worst water crisis in its history*.

Beneath the Surface

The State of India's Water 2019

1 cup coffee **132** Litres

What is virtual water?

Virtual water refers to the water included in the production of everything we eat, buy and wear. The amount of water that it takes to create a product is its water footprint. For example, take your morning cup of coffee, of about 125 ml of actual water. The water used to produce the ground coffee, from irrigating coffee plants and processing the beans, is more than 1,000 times that amount, at 132 litres or nearly seven 20-litre buckets full[1].

WWW.WATERAIDINDIA.IN

As many as one billion[2] people live in areas of physical water scarcity, of which

600 million are in areas of high to extreme water stress

0.2 million people die every year due to inadequate access to safe water

6% of GDP will be lost by 2050 due to the water crisis

WaterAid

*Source of all stats in pink: http://niti.gov.in/content/composite-water-management-index-june-2018-0

Blue water is used in irrigation, drawn from lakes, rivers and from groundwater sources below our feet.

Green water in this context is soil moisture.

Grey water is the amount of polluted water associated with the production of all goods and services.

Blue, green and grey water

The water footprint of any item is made up of three different types of water. 'Green water' in this context is soil moisture; 'blue water' is used in irrigation, drawn from lakes, rivers and from groundwater sources below our feet. And 'grey water' is the amount of polluted water associated with the production of all goods and services.

Rain-fed crops are largely dependent on rain and do not compete for water with household or industry, but are more vulnerable to drought and are likely to have lower yields, resulting in a lower income for the farmer. Blue water for irrigation comes from the same water sources that provide for household use. When demand is high and reserves are limited, it's critical to balance these demands to protect the amount of water for basic use. Groundwater is like a hidden savings bank with a low interest rate: whatever is taken out will eventually trickle back in through the ground, but often at a slower rate than humans are drawing it. Overuse of groundwater erodes its natural ability to even out the vagaries of cyclical drought and provide a reliable back-up or timely recharge. Around two-thirds of global freshwater extraction is used for irrigation[3].

40% **of the population will have no access to drinking water by 2030**

2x **By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people.**

70% **of our water is contaminated**

Virtual water in day-to-day life

Agriculture

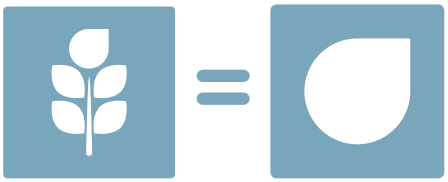
Wheat and rice are the two most important and highest water-guzzling crops that India produces. Rice is the least water efficient grain and wheat has been the main driver in increasing irrigation stress. Replacing rice and wheat with other crops like maize, millets, sorghum mapped to suitable geographies could reduce irrigation water demand by one-third[4].

Though replacement of rice and wheat crops is challenging, in an ideal scenario, choice of crop needs to be matched with ecology and the amount of water available in the area it is being produced in.

- India accounts for almost one-fourth of the total groundwater extracted globally, more than that of China and US combined[5].
- India also uses the largest amount of groundwater – 24% of the global total[6].
- India's rate of groundwater depletion increased by 23% between 2000 and 2010[7].
- India is the third largest exporter of groundwater – 12% of the global total[8].

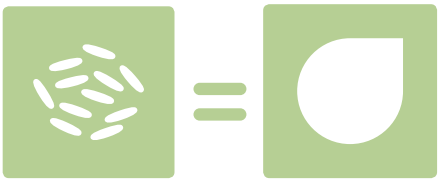
From farm to table in India[9]

One kg of wheat requires an average 1,654 litres of water



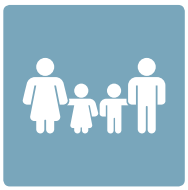
1 kg wheat = **1,654** litres*

One kg of rice requires an average 2,800 litres of water



1 kg rice = **2,800** litres*

*can vary depending on geography and climate



The **water footprint** of a **rice-eating family of four** that consumes 1kg of rice per day.

1 x 30^{days} x 2,800^{ltrs} = 84,000^{ltrs} of virtual water

+ 5^{lpcd} x 4^{people} x 30^{days} = 600^{ltrs} of virtual water

Based on the cooking standard as per government of India (5lpcd per person per day).

So, just for rice, a family of 4 consumes approximately 84,600^{ltrs} of virtual water in a month.

In 2014-15, India exported 37.2 lakh tonnes of basmati[10]. To export this rice, the country used around 10 trillion litres of water, meaning India virtually exported 10 trillion litres of water.

Actual water in day-to-day life

The following norms are adopted by the Government for the rural and urban water supply schemes

55 lpcd	70 lpcd	135 lpcd	150 lpcd
Rural[11]	Towns without sewerage[12]	Cities with sewers/ proposed[12]	Mega cities with sewers/ proposed[12]

A rural fact

In rural areas, the government standard to supply 55 litres per capita per day does not take into account that a large number of rural households own livestock and need water for their drinking and washing needs. Moreover, in the absence of household level piped water supply and metering, it is difficult to monitor the quantity of water received by each household. This in turn, makes it challenging to estimate the per capita needs of rural households.

As droughts become frequent, they not only create severe problems for a rural population dependent on surface water for daily and agriculture use, but availability of water for livestock is severely affected as well. In 2016, around 3,000 animals[13] died in Mahoba district of Uttar Pradesh, the largest producer of wheat in India and the second-largest producer of rice after West Bengal[14], when it faced a drought.

India is currently ranked

120

among 122 countries in the water quality index

- **84% rural households do not have piped water access.**
- **88% of households have clean water close to home but 75% of households do not have drinking water available on premises.**

So what can we do

As citizens, be aware of not just visible water consumption but also virtual water footprint. Use water in all forms judiciously. Encourage **re-use of water**. Use and promote **sustainable fashion**.

As governments and institutions, promote better agriculture practices that encourage water efficiency mapped to geography and climate. **Regulate groundwater use** and promote groundwater recharge measures. **Promote and implement rainwater harvesting** practices at all levels.

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