

We’re sucking our water world dry

Ignoring the sustainable limits of our fresh water supply will have grave consequences, warns **Arjen Hoekstra**, and the remedies will be hard to swallow

You came up with the idea of the water footprint. What is it?

The water footprint is the total volume of fresh water used in the making of products such as food, clothing or energy. People also have personal water footprints, because we consume these products and of course use water in our homes. Countries, too, have their own water footprints.

Why is this something we need to measure?

People may feel that water is in plentiful supply – after all, nearly three-quarters of the planet is covered in it. But just 1 per cent of that is fresh water available for our use, and all of that stems from precipitation. The annual rainfall on the continents is finite, so if we continue to use this resource faster than it is replenished, and pollute our limited supply so that much of it is no longer fit for use, we are heading for crises in many parts of the world.

What happens when we use up water faster than it is replenished?

The dwindling Aral Sea in central Asia is a classic example of wrong-headed planning. Until the 1970s it was one of the largest lakes in the world. Then huge investments were made to divert water from its tributaries to grow cotton, as well as wheat and rice. Today the Aral Sea has largely dried up. It’s simple: if you use more water than the volume flowing in the rivers, you leave less and less water in the region.

Where else are problems developing?

Some places are already over the edge. In Yemen, groundwater levels have dropped by tens of metres due to over-abstraction for irrigation. This affects water and food security, and fuels instability in the region. In Turkey,

damming the headwaters of the Tigris and Euphrates, for hydropower generation and agriculture, is reducing water flows to downstream countries like Syria and Iraq.

But beyond clear problems like these – which are already taking a toll on nature and poorer people living in politically unstable, water-short regions – many more problems are hidden, because it can take a few decades before repeated annual shortages eat into existing water reserves.

How does food impact our water footprint?

All food has a big water footprint, because agriculture is the largest water consumer. Grains generally have a water footprint in the order of 1000 litres per kilogram. Beef is, on average, 15,000 litres per kilogram. Both are big numbers but you can see that meat is in a league of its own. So your diet, and particularly how many animal products you eat, has a big impact on your personal water footprint.

How significant is the water we use at home?

In Europe, the average consumer’s domestic use is typically only 1 to 2 per cent of their total water footprint: the vast majority relates to the products you consume. Not only is the water used at home a relatively small amount, but it can also be mostly recycled. That means it isn’t reflected in your water footprint: you take it from the aquifer or the river into your house and take your shower, and afterwards the water is largely returned to the aquifer or the river. Activities like watering your garden contribute to your footprint, but in general, home use is rather meagre.

So why all the fuss over domestic water use?

Because it is politically easier to direct campaigns about water scarcity towards the

PROFILE

Arjen Hoekstra is a professor of water management at the University of Twente, the Netherlands, and founder of the Water Footprint Network

public. The real solution lies in agriculture: about 90 per cent of our global water footprint relates to food. About one-third relates to the production of feed for the animals we consume. In California, for instance, the state’s biggest water use is for feed crops. Meanwhile, you have this drought going on, and all of the time the focus is on how terrible it is to have a drought. But the real focus should be on how stupid it is to have such a big water demand in a region where droughts are fully expected.

We are still in the mode of blaming things on nature, but drought is a normal

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phenomenon that happens everywhere from time to time. The frequency may even increase with climate change. If you base your economy on a level of water use which is way too high, you will ultimately get into big trouble.

So what can the average person do, if cutting back on water use at home is not so helpful?

Showering more quickly doesn’t help to solve the impending water crisis, but it still makes sense because you’ll use less energy, which is better for the climate. But really we need to go

to a world where eating less meat is seen as a logical way to reduce the pressure on the environment. This is really the elephant in the room. Nobody’s talking about it.

On a societal level, we could set maximum sustainable water footprints for river basins, agree on those politically, and then make sure that you don’t give permits to use more than that. Another way to make sure that water is not being overexploited or polluted is to put its real value into the price of products. Because it’s a public resource, this can only be done by taxing.

“Pay more taxes and eat less meat” is a hard message to sell.

That’s why governments and companies always focus on efficiency improvements instead: no one can deny the benefit of producing the same with less water. But this will not be enough, not by a long way. You can use less and less water per unit of production, but if your population is growing and your consumption booming, then that is simply not sufficient.

How is the UK doing in terms of water use?

Because it imports so many goods, three-quarters of the UK’s water consumption is actually outside of its borders. And about half of that usage is not sustainable. For example, the UK imports rice and olives from southern Spain and sugarcane from Pakistan, regions where water is overexploited. This means groundwater levels are declining and rivers dwindling or drying up. That’s bad news for

“It’s stupid to have big water demand in California, where droughts are fully expected”

the exporting countries and for the UK, because these food sources will ultimately fail.

In terms of the broader region, Europe is the biggest net importer of water-intensive commodities in the world, much of it from water-scarce regions. In fact 40 per cent of Europe’s water footprint is outside the continent. A large part of that is unsustainable.

How can Europe improve sustainability?

We in northern Europe should realise that we are actually quite well off with water, and ask why we import water-intensive goods from water-scarce areas. It doesn’t make sense that we produce so little of our own food.

Isn’t this an inevitable effect of global markets?

Yes. We lose our own agriculture because elsewhere you have free water, cheap land, cheap labour. But it is not truly cheap; it is at the expense of the people over there, their land and their water. And in the long run, our own food supply is at risk. We need to change the rules of the market by discriminating in favour of sustainable production. It is a global challenge for agriculture, power generation, trade and economics, which we must work together to address. It’s a big deal, and it will only get bigger. ■

Interview by Sean O’Neill