



# DRIP, DRIP... DRIP

# DRY

**Y**es, that's right folks, it's not just oil that is running dry, so are our taps! An ever-increasing global population combined with our insatiable appetite for water consumption could be bringing an end to the era of cheap water. Ecologists have started adopting the term 'peak water' - the point where, like the concept of 'peak oil', the world has to confront a natural limit on something once considered virtually infinite. Fresh water as a resource is currently limited, in fact, only 1% of the world's water is accessible, fresh and suitable for human consumption. This is unevenly distributed by season and location, and much of it is polluted. So what's the solution? With oil it's pretty clear - find other sources of fuel, preferably sustainable ones, and reduce the global demand. With water it isn't as simple as that. We need water to survive - we can't find an alternative, renewable, life-sustaining liquid - it doesn't exist. We have to reduce our consumption, improve our water management and conservation, and utilize advancing technologies to harvest new sources of water - and we have to do it soon.

## how many elephants can you fit in a taxi?

The water issue stems from a problem that could be described as cultural, certainly biological, and undoubtedly the fault of human beings - the population problem. Water is not running out, as such, there are just a lot more of us to share it now. Since 1900, the world population has tripled, and water consumption has increased more than six-fold. Fresh water demand in cities and industries has doubled during the past 20 years, and it is predicted to do so again before 2050. And there is a more sickening element to the world's water problems - every individual human being is equal in his or her biological need for water - without it, we die. Yet water consumption is anything but equal. The average European consumes 200 litres of water every day, whilst the average person in the developing world uses just 10 litres. And 884 million people around the world still lack access to safe water; that's around one in eight people! We haven't managed to solve the problem of water access for an eighth of the population yet, and we are already facing the prospect of running out. The water problem is vast and complex but the solutions are pretty simple - waste less water and use less water - if we can do that, problem solved.

## how much water do you use?

Statistics vary on global water usage by sector, but they all have the same basic conclusions; agriculture is by far the biggest consumer of water in the world, followed by industry, and then us - domestic consumers. The latest

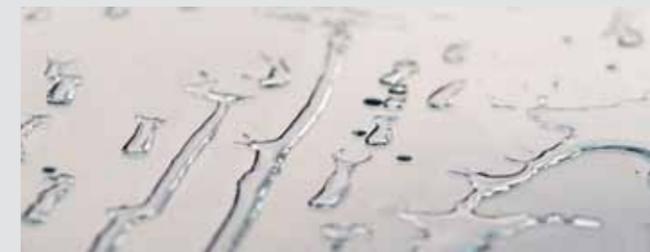
reports suggest we consume around 150 litres per person, daily, in the UK. Yet, that figure can be multiplied around thirty times, when you take 'virtual water' into account, that is, water used in the production of imported textiles and foods. For example, how many litres of water are used in the production of beef? Around 16,000 litres of water for a kilo of cotton, and 40 litres for one slice of bread. I think you get the picture - consumer demand and global consumption of, well, pretty much everything, is dependent on water. It seems that the Western world is so far removed from the production processes involved in both food and goods, that the average consumer is simply unaware of these facts. I had absolutely no idea how much water it took to produce our food - currently around 200,000,000 litres per second to produce the world's food - and I'm pretty confident I'm not in the minority - at these consumption rates, no wonder we're running dry!

It is difficult to digest the contrast between the Western world's prolific consumption of water, for that woolly winter jumper or tender rib-eye steak, and the millions of people worldwide who don't even have fresh water to brush their teeth. It is the

Waterwise ([www.waterwise.org.uk](http://www.waterwise.org.uk)) is a UK NGO, which focuses on decreasing water consumption in the UK, and building the evidence base for large-scale water efficiency. I spoke with Managing Director, Jacob Tompkins, about the chances of solving the water problem before it's too late, "The challenges are enormous but yes, we are optimistic about solving the water problem," Jacob explains. "The solutions are low-tech and accessible - waste less water! A combination of changes in behavior and water efficient technology should enable us to live within our means."

Before we get into the plethora of technologies and applications that can help reduce the use and waste of water, let's reflect on some pretty simple habits we can adopt to help reduce our water footprint. A running tap can waste over six litres per minute, so turn off the tap while brushing your teeth! Similarly, fix your dripping taps - they can waste thousands of litres a year. Ensure there is a full load in the dishwasher and washing machine. Take a shower instead of a bath. Wash fruits and vegetables in a bowl of water, rather than under a running tap. Use any leftover water to feed houseplants. Use a watering can or hose to water your

**Fresh water is fast becoming a scarce commodity and even some parts of the UK are now classed as being under "water stress". We need to improve our water management systems, and quickly. Better efficiency, less waste and improved harvesting technology are vital. Luke Bell turns on the tap and discovers how cheap, accessible water could soon be a thing of the past!**



**only 1% of the world's water is accessible, fresh and suitable for human consumption**

responsibility of the developed world to address the water issue. We have the technology, the wealth and the flexibility to change the way we use water. Oh - and don't think it's just the deserts and hot countries that are facing water shortages - some parts of the UK are already facing real problems - in fact, in England, the South East has less water available per person than Sudan and Syria!

## waste not, want not

Those old sayings never cease to ring true do they? Water waste is another major issue - but it is also part of the solution. Water is used inefficiently nearly everywhere. In agriculture, for example, only around a third of water withdrawn for irrigation actually reaches the crops. The rest soaks into unlined canals, leaks from pipes, or evaporates into thin air. The same is true for domestic water usage. About one third of the water each person uses on a daily basis is wasted - but technology is seeking to rectify that.

garden plants, rather than a sprinkler. Try a bucket and sponge to wash your car, rather than a hose or commercial carwash. These are small and simple suggestions, but with the opportunity to make a huge difference. If we can tackle the problem of water waste in the home, there is no reason why we can't tackle it in industry and agriculture. If we can tackle water waste as a whole, then we have taken a massive step towards the sustainability of our water supply.

## soluble solutions

Recent UK building regulations now state that water efficiency is a legal necessity in all new buildings. The government is encouraging the industrial and retail sectors to manage their water consumption more effectively, and there are increasingly more initiatives sprouting up, to address the issues of water conservation and management in the UK and worldwide.

There are all manner of gizmos and gadgets available to help you save water in your home and garden. Each year, Waterwise award the 'Waterwise Marque' to products that reduce water wastage, or increase awareness of water efficiency. Over 60 Marques have been awarded to date. Cistern displacement devices for your toilet can save around 1-3 litres per flush, and are available free of charge from your local water supplier. Gadgets such as the 'Water Pebble' can help you save water when showering. There are 2-way bath plugs available, which allow you to choose between draining your water and recycling it. Or maybe even a shower timer, to encourage you to shave a few minutes off your morning shower?

Fay and Ben Billingham took on the Save Water Swindon campaign, a project encouraging local residents to try and save 20 litres of water a day. "We'll be taking showers, not baths, keeping a jug of water in the fridge and not run the tap, and we're installing a water butt to collect rainwater," Fay enthused as they prepared to start the challenge. Their first step was to fix the broken shower - a bath can use as much as 90 litres of water, whilst their new shower uses just 7 litres per minute. They were also given a free timer to help them cut down shower time. The Swindon area is currently classed as 'water-stressed', meaning there is more human demand for water than nature can sustain. The Save Water Swindon project is seeking to redress the balance. Campaign ambassador, Kevin McCloud explains, "Save Water Swindon is an ambitious campaign that will set a precedent for how large-scale water efficiency in existing homes can be achieved - with benefits for homeowners and the environment. Water is a scarce resource and takes a huge amount of energy to process."

### rainwater harvesting

As well as improving the efficiency of our water systems and reducing waste, there are many products now on the market to help homeowners harvest their own source of water - rainwater. And in the UK, we have plenty of that! It is estimated that by using rainwater for toilets, washing machines and gardens, we could save around 50% on mains water usage. The government is taking steps to encourage rainwater harvesting with new building regulations stating that, "...for any new dwelling the potential wholesome water consumption by persons occupying it must not exceed 125 litres per person per day."

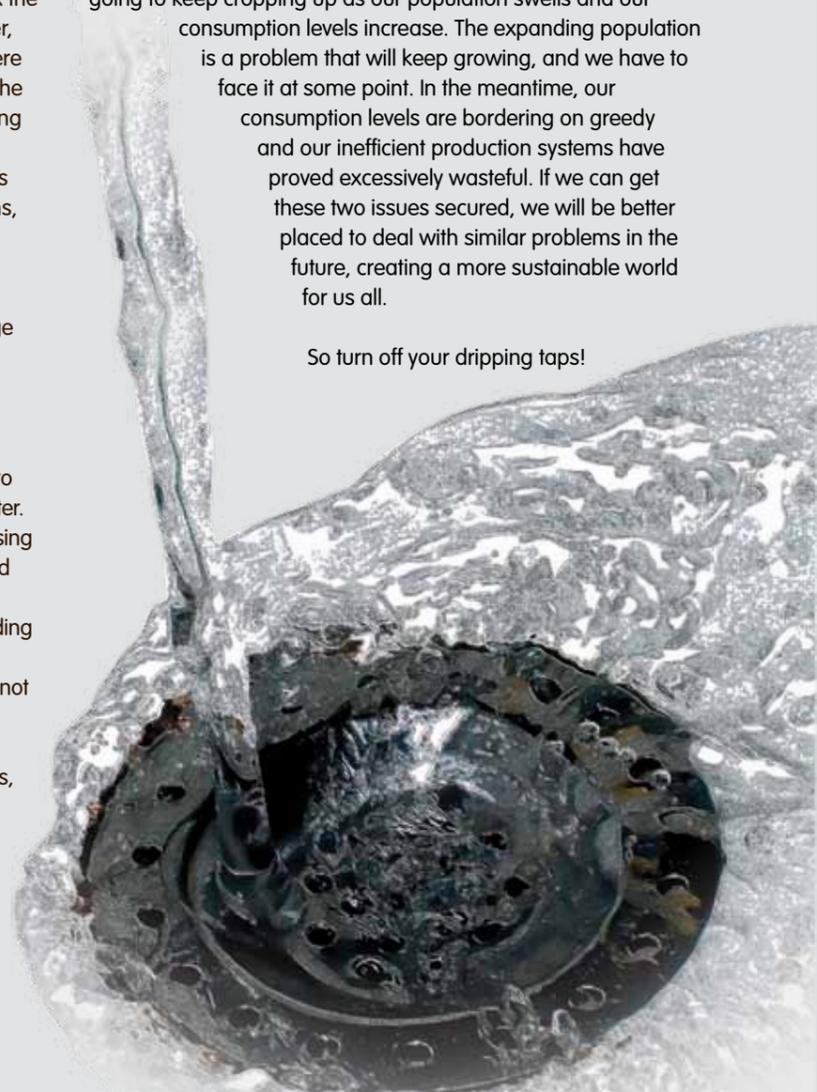
Water is divided into wholesome and unwholesome categories, and rainwater is listed as suitable for flushing toilets, washing and irrigation. There are obvious financial advantages for utilizing rainwater, and it is hoped the government will soon introduce an added incentive scheme, as they have with wood-fuel heating and other renewable energy solutions. There are a variety of harvesting systems available, suitable for home, garden or commercial use, and the new gravity fed or solar powered systems negate the need for an electric pump.

### bigging up water management!

On a larger scale, there are also ways to improve conservation and management of water in agriculture and industry. Swales and cisterns can be used to catch excess rainwater and store it for the dry season. Drip irrigation systems have proven to be far more water efficient, as they provide a steady, low-pressure flow of water into the soil directly surrounding a plant's root system. Australia is one of the countries leading the way in improving water efficiency in agriculture. Drip irrigation systems were employed in the cotton farms of the Namoi Valley for a 4-year trial period. The trial showed average cotton yields were higher, and water savings substantial. Max Lange installed a fixed sprinkler system on 26 hectares of his dairy farm in Attunga. The experiment doubled his milk-yield and used a third of the water. There are many more case studies like this, which are well worth a read at: [www.savewater.com.au](http://www.savewater.com.au)

Peak oil and, now, peak water - problems just like these are going to keep cropping up as our population swells and our consumption levels increase. The expanding population is a problem that will keep growing, and we have to face it at some point. In the meantime, our consumption levels are bordering on greedy and our inefficient production systems have proved excessively wasteful. If we can get these two issues secured, we will be better placed to deal with similar problems in the future, creating a more sustainable world for us all.

So turn off your dripping taps!



**FRANKWATER.COM**  
clean water saves lives



every 20 seconds, a child dies from water related diseases

500,000 people have access to clean safe drinking water through FRANK Water projects since 2005

Our projects use the most appropriate, effective and sustainable water filtering technology available. Once a project is set up, it is run and maintained by the local community providing clean safe water to up to 10,000 people per project.



**BE PART OF THE SOLUTION**

find out more at our website: [WWW.FRANKWATER.COM](http://WWW.FRANKWATER.COM)



**Kernowrat**  
PRACTICAL SOLUTIONS

01841 533808 - [info@kernowrat.co.uk](mailto:info@kernowrat.co.uk)



Waterless Compost Toilets

[www.kernowrat.co.uk](http://www.kernowrat.co.uk)



Water Filtration and Purification Systems

**waterpebble**

Save 1000s of litres of water a year!



shower timer

Reduce your daily shower &

Save Time,

Save Water,

Save the Planet!

For more information visit: [www.boa-waterpebble.com](http://www.boa-waterpebble.com)

**boa**  
formed for function