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OUT OF THE ORDINARY

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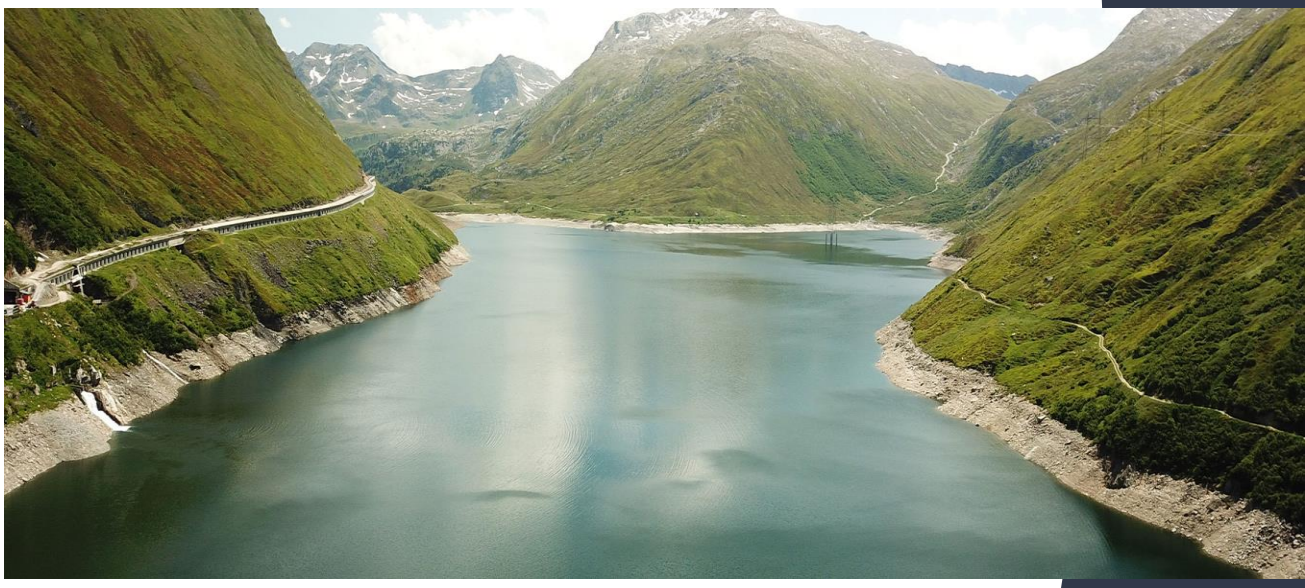
Commodity on tap



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Summer this year in the northern hemisphere seems to only know extremes: either it's a drought, or it's a flood. Every day the news will have at least one new story about extreme weather events, whether it's scorching wildfires in Italy, Greece, Turkey, Oregon and California, or devastating floods in the UK, Belgium, Germany, India and China (and this is by far not an exhaustive list). And regardless of the scenario, people will be talking mostly about one thing: water - there is always either too much, or too little.

In the UK it is easy to take water for granted and treat it as though it is worthless. When you wake up, you brush your teeth, have a shower, make a tea or coffee, perhaps cook a meal, wash the dishes, put on laundry and water your plants despite rain being forecast for the next two weeks. Water seems infinite. Even though it is the most basic resource, water is also the most essential; there can be no life on earth without it. There is a reason why NASA's guiding policy in the search for extra-terrestrial life is to 'follow the water' . But when disasters hit, they can destroy or contaminate entire water supplies and infrastructure, with extremely detrimental effects. Water is finite, and the amount of water available per person is falling.

Given the large amounts of rain we have been experiencing, it might be counterintuitive to think about water scarcity. But bear with me.

Earth's water is always in continuous movement, known as the water cycle, which is the journey that water takes from land and oceans into the air through evaporation, condenses into clouds and through precipitation (rain or snow) falls back to land and eventually runs back to the sea where the cycle starts again . Climate change has been intensifying this water cycle, increasing the rate of precipitation and evaporation, leading to an increase in both wet and dry extremes. One consequence is that the warming temperatures have started to raise the upper limit on the amount of moisture, or humidity, we have in the air, which increases the potential for more frequent and heavier rainfall . This rainfall intensity is not uniform around the globe; whilst some areas will see floods, other parts, such as the Mediterranean, are expected to see the greatest reduction in rainfall.

There are two key types of water scarcity: physical and economic . The first is when freshwater demand outstrips supply and there is not enough water to allow the population and ecosystem to function properly. The second is caused by a lack of investment in water infrastructure and/or the poor management of water resources, essentially making it a money and governance issue.

The importance here is freshwater. Freshwater is naturally occurring water that is not salty and can be found in, for example, rivers, lakes, streams and the ice caps. It is essential for both people and wildlife, as it provides the water for drinking, agriculture, irrigation, industry and power generation. Even though water covers over 70% of the planet, only 2.5% of that is freshwater, of which less than 1% is currently accessible. Saltwater, which is found in the oceans and seas, has, as the name suggests, a much higher salt level and as such has limited industrial use. Whilst desalination is possible, it is both very energy-intensive and expensive, which means that we continue to rely on freshwater for most of our processes.

You can go weeks without food, but only days without water. It has been estimated that demand for freshwater may outstrip supply by 2040 and that half of the population may live in areas with water scarcity. In fact, fourteen of the world's 20 megacities are already experiencing water scarcity or drought conditions . As such, freshwater is quickly establishing itself as a universal security risk that is causing famine, terrorism, increases in inequality and

disease. This means that we need to focus on reducing the use of freshwater, as well as its pollution, protect against risk of damage to freshwater systems and infrastructure, and look for new ways to secure the water supply. No easy task!

Water scarcity is not an isolated problem; it is a global phenomenon. Economic growth is exacerbating the risk of water shortages as boosts to wealth lead to increased demand for products, which require more water to produce. Think about it – all economic sectors need water. Agriculture alone accounts for roughly 70% of water use worldwide . Water is needed for energy generation; mining, manufacturing and construction use it for cooling; service industries rely on it and we need it for public water supply. We use it in the clothing sector to make material, we need it for furniture, books, buildings and toys, and water is one of the major commodities used in the pharmaceutical industry. The export of oil, minerals and metals also requires enormous amounts of water – often as much as is needed to mine and process the metal in the first place. This kind of water is often referred to as virtual water, because you tend to forget what you don't see – but it is just the same as the water you drink.

CDP has estimated that the financial impact of not dealing with water-related climate risks currently amounts to $301bn, which is "five times higher than the cost of addressing them". Of course, in comparison to carbon emissions, it is more difficult for companies to track water scarcity and the related risks and many companies underestimate their water consumption by up to five times its true cost. Whilst many companies may have access to data on their own water usage, they are often unaware of the operational risks they may be facing in sourcing and in their supply chain, which often accounts for as much as 90% of the water used in production. Indirect costs of water scarcity (as well as floods!) can also be found in supply chains, as dry riverbeds can effectively halt water-based trade routes and flooding can cause irreparable damage. With water resources dwindling and climate change causing more water-related extreme weather events, companies need to step up their game to address the risks, build resilience and explore opportunities.

Beyond risk management, CDP has also estimated that water-related opportunities for businesses are estimated at $711bn and rising, as the prospect of water shortages could make it a precious commodity. For example, technological innovations can help farmers manage the nutrients they put in the soil, so they don't become water pollutants. More organisations are starting to look for ways to solve for both water quantity and quality, and for technologies that can move storm water away from infrastructure to reduce potential damage. Investing more in natural infrastructure can help protect communities from water shortages, as well as water-related disasters. Developing water saving/reuse measures, adopting flood emergency plans and securing alternative water supplies through water-smart product developments will offer opportunities for transformation in the manufacturing and materials sectors. There is basically a pool of opportunities out there.

Of course, water also carries some substantial regulatory and political risks. A government's failure to meet its citizens' basic needs can spark protests and even be the cause of war, making it a core foreign policy challenge as future wars may no longer be about

oil, but water. But all this does is underpin the fact that companies must prioritise water usage and limit water contamination in their business practices and look to invest in ways that can help them manage to do so.

One last thing before I let you go: have you heard of the diamond-water paradox? Adam Smith described it in The Wealth of Nations, essentially trying to figure out the irrationality of why something that is essential to human life is so cheap, whilst something that is just decorative is so costly. Yes, there is abundance vs subjective valuation, and marginal utility vs total utility. But I wonder whether in time the paradox might solve itself with some of Smith's favourites: the market forces of supply and demand.

Economic Commentary

FTSE 100 weekly winners

Flutter Entertainment Plc	11.8%
Informa Plc	7.5%
Aviva plc	6.8%
Prudential plc	6.4%
Admiral Group plc	5.8%
SSE plc	5.1%
CRH Plc	4.7%

FTSE 100 weekly losers

Hargreaves Lansdown plc	-9.4%
Rio Tinto plc	-6.3%
Just Eat Takeaway.com N.V.	-5.4%
M&G Plc	-4.8%
International Consolidated Airlines Group SA	-4.5%
Phoenix Group Holdings plc	-4.4%
Abrdn plc	-4.3%

FTSE 100 index, past 12 months

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