

# INVESTING IN A WATER-SECURE FUTURE



Our Future Water

CAIA

Climate Markets  
& Investment  
Association



# Investing in a Water-Secure Future

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When we consider it from an economic point of view – water is the single most traded commodity on the planet. It is embedded inside so many things we consume or manufacture.

The global demand for water has been increasing at a rate of about [1% per year](#) largely due to population growth, economic development, and changing consumption patterns. In addition, it will continue to grow significantly for the foreseeable future.

Climate change will increase the numbers of people exposed to water scarcity and flooding risks. By 2025 alone, [1.8 billion people](#) will be living in countries or regions with absolute water scarcity. As the century progresses, the number of people displaced by flooding per annum will increase from the average of 10 million per year between 1976-2005 to [50 million](#) by 2100.

## URBAN CENTRES

Over half of the world's population now lives in urban areas. The [United Nations](#) reports that the number of megacities is projected to rise from 33 in 2018 to 43 in 2030. Megacities are categorised by metropolitan areas with 10 million people or more. However the growth of urban areas in the category below megacities, that is to say with 5 million to 10 million residents, is [25 percent above that of megacities](#). Urbanisation is increasing demand for water resources with large cities estimated to obtain around [78 percent of their water](#) from surface sources, some of which are far away.

## MINI CASE: SMART METER TRIALS IN SINGAPORE

Singapore's Public Utilities Board (PUB) is trialling a smart water network in which the utility will collect detailed data on household water consumption to build customer consumption profiles and identify consumption patterns and trends. The data will then be analysed and provided to customers enabling them to monitor their water usage patterns and better manage water consumption. PUB will also customise its engagement strategy by incentivising customers to conserve water, for instance, setting water-saving goals and tracking the efficiency of their water usage based on their consumption profiles.

## NATURE-BASED SOLUTIONS

Urbanisation is impacting groundwater and surface water quality, while increasing the risk of localised flooding. Water management for cities requires cross-scale smart solutions due to the interdependencies of freshwater, wastewater, stormwater, and flood control in these urban areas. Recognising this, many cities are turning to nature-based solutions (NBS), which is the strategically planned network of natural and semi-natural areas that are designed and managed to deliver a wide range of environmental, economic, and social benefits.

## EXPERT INSIGHT

"Deltares places a high importance on multifunctional green infrastructure to manage resilience to extremes in the Netherlands and worldwide", says Monica Altamirano the Program Manager

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Finance for Adaptive Planning at Deltares, an independent institute for applied research in the field of water and subsurface. Previously Deltares called it “nature-based flood defences” as the focus was on managing too much water, but now droughts are becoming more frequent in the Netherlands. As a result, throughout all Deltares’ research lines including adaptive delta planning, environment, water and subsurface resources, flood risk and infrastructure they look at the potential of NBS for the resilience of systems at large. “Within the research line I lead we aim at closing the implementation gap of water security strategies, where various combinations of green and grey infrastructure come into play”, emphasises Altamirano.

### MINI-CASE: WATERWISE PERTH

Recognising the value of nature in reducing the urban heat island effect and creating liveable, green, and sustainable places, the Government of Western Australia has released the Waterwise Perth Action Plan which sets out the direction for transitioning Perth to a leading Waterwise city by 2030. The Waterwise Perth Action Plan calls for an increase in green space in urban environments through a variety of initiatives, including the Waterwise Greening Scheme. This is a scheme where Waterwise Councils can receive up to AUD 10,000 in funding to support a variety of Waterwise greening initiatives including green street programmes and demonstration Waterwise gardens, for example, reclaimed public open space gardens, all of which provide multiple co-benefits including improving water quality, improving community health and well-being, increasing biodiversity, and cooling local communities.

### UNDERFUNDING OF WATER INFRASTRUCTURE

Prior to COVID-19, there was no shortage of money flowing around the financial markets, but getting funds to flow into low carbon, high resilient water projects or programmes was challenging. For example, according to a UN report, despite rapidly growing investments in NBS, research shows that there is still well below [1% of total investment in water resources management infrastructure](#).

### LACK OF SANITATION ENHANCING COVID-19 RISKS

This underfunding of water infrastructure is putting many countries at worse risk in the COVID-19 crisis, with more than [half the global population](#) living without safely managed sanitation. Good hygiene (soap and water) is the first line of defence against COVID-19, however, around [3 billion people lack basic handwashing facilities](#).



### WATER INVESTMENT OPPORTUNITIES

Technological advances are changing the ways in which water is managed and used, giving rise to a range of investment opportunities. For example, almost [6 billion gallons of treated water are lost](#) in the US every year because of poor infrastructure, which makes this a targeted space for improvement.

The way we use water is unsustainable now. When one considers the long-term horizon and sustainability, the trends that we have today are not sustainable and thus, by definition, they cannot be long term. The climate crisis is putting water infrastructure under increasing pressure and there is an expected investment shortfall in water services and sanitation alone of approximately [USD 1.7 trillion by 2030](#). This gap in the market represents opportunities and the leading companies in water-related markets who are finding solutions to address good water management are likely to become major drivers of global economic growth because they are solving social and environmental concerns.

Exposure to water-related areas of investment can be found in utilities, infrastructure and treatment and efficiency. Utilities range from private water companies to ones that are municipality owned. Infrastructure includes companies that produce pumps, valves and pipes. Treatment and efficiency include companies focused on waste management and technologies (such as water meters) plus environmental support services.

Investment in companies that are developing innovative solutions in sustainable food and agriculture, which has a large water footprint, is also growing. As innovation continues to grow, water investment opportunities will expand as well.



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### TYPES OF WATER STOCKS

For an investor who wants exposure to water, one of the easiest ways to do so is through the stock market. Water stocks can be broadly split into two types. The first is water utilities that are responsible for treating and distributing water to the public. For the most part, utilities operate in regulated markets, which means that its revenue is constrained by economic and financial regulations of some form. While regulation can limit the amount of revenue and profit it can make by selling water, it also makes their income more reliable too and stable businesses are suited to long term investors. Water stocks have tended to pay reliable dividends in the past. The second type are companies that supply the water industry with equipment, technology and services that help improve efficiency and the running of the utilities' network.

[Stocks and exchange-traded funds related to water have rallied this past year](#) before the COVID-19 pandemic sent stock markets crashing down. While we face uncertainty about the negative impacts of the pandemic on the global economy, water security remains a national priority for many countries and companies providing climate-smart solutions aligned with the goals of the Paris Agreement would be a good addition to an investor's portfolio. There are several Water Exchange Traded Funds (ETFs) for exposure to water.

#### MINI CASE: WATER ETFs

Water ETFs allow investors to get exposure to dozens of water industry stocks in one security. When searching for the best ETFs, one of the most important things to look for is a low expense ratio. This is because most ETFs passively track a benchmark index and the category of holdings are often similar. Invesco Water Resources ETF (PHO) is one of the most popular water-themed funds on the market and also the most liquid. It tracks the NASDAQ OMX US Water Index, which is designed to track the performance of companies creating products that conserve and purify water for homes, businesses and industries that are listed in the United States. For a global water exposure, Invesco has another ETF which tracks the S&P Global Water Index (CGW), which consists of approximately 50 water stocks comprised of mid-capitalization. The allocation split is nearly even between domestic US and global companies in water-related businesses.



### GREEN BONDS FUNDING MUNICIPALITIES AND UTILITIES

Green Bonds are financing sustainable, 'green' projects that deliver environmental benefits. [Green Bond issuance has passed USD 200 billion in 2019](#), which is a record amount. In fact, Green Bond issuance has increased more than tenfold in just five years. Sales in green bonds finance everything from sustainable agriculture to clean transportation projects as well as municipalities issuing green bonds to raise funds.

In the global green bond market, the green energy sector has seen the most issuance. However in the [US two sectors dominate the municipal green bond market: transportation and water infrastructure](#). The largest issuers are mostly in coastal states, including New York and California.

Maintaining water infrastructure is expensive and one of the prime reasons for utilities to raise debt. In addition, with climate change bringing more extreme weather events, the raising of debt to preserve and restore natural flood defences is a cost-effective way for cities and regions to mitigate and adapt to climate change.

#### MINI CASE: SAN FRANCISCO'S GREEN BONDS FUNDING GREEN INFRASTRUCTURE

Since issuing its first green bond in 2015, the San Francisco Public Utilities Commission (SFPUC) has sold more than USD 1.4 billion in certified green bonds for all three of its enterprise utilities: Water, Wastewater, and Power. Impacts to date include the use of green infrastructure to divert stormwater from treatment plants. In total, SFPUC is constructing eight flagship green infrastructure projects, one in each of the city's urban watersheds to test green technologies and evaluate their long-term effectiveness in decreasing the amount of stormwater going into the combined sewer system during large storms, reducing localised flooding, and protecting the water quality of the Bay and Ocean.



#### MINI CASE: ANGLIAN WATER FINANCING A GREENER FUTURE

In 2017, Anglian Water issued the first-ever public sector Green Bond at the London Stock Exchange valued at GBP 250 million. With the rate of return set at 1.625% and a maturity of 2025, all Anglian Water's capital expenditure qualifies as eligible expenditure for the Green Bond. However, the water company will select some of its largest, innovative schemes to be funded through the initiative including innovative water abstraction, drought and flood resilience schemes, progressive water recycling, and water resources management projects.

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### CROWDING IN THE PRIVATE SECTOR

The private sector has sustainable and ESG investing in mind. The private sector also has the knowledge to test what is working in their assets plus know how to maintain them with efficiency and continuously look for ways to optimise effectiveness. In the water sector, governments can crowd in private sector expertise, insight, and investment if they set up regulatory frameworks combined with long term plans to mature a market for green and hybrid infrastructure for the next 10-15 years. "The private sector could play a role on design and thinking models that are sustainable, efficient and very effective to accelerate learning. The public sector needs to go beyond and shape water investment with external parties," concludes Altamirano.

### CONCLUSION

Water is embedded in nearly everything we consume or manufacture. However, global demand for water is increasing due to population growth, economic development, and changing consumption patterns. Climate change will increase the numbers of people exposed to water scarcity and flooding risks. Urbanisation is also increasing demand for water. With freshwater, wastewater, stormwater, and flood control needing to be managed in an integrated manner, cities are turning to smart water networks to better manage water consumption as well as NBS to manage excess stormwater. Nevertheless, this shift is hampered by a significant investment shortfall in water resources management infrastructure. This underfunding of water infrastructure is putting many countries at worse risk in the COVID-19 crisis. There are a variety of paths investors can take in helping create a water-secure world including investing in water stocks of either water utilities or companies that supply the water industry, water ETFs as post-COVID-19 water security will remain a national priority for many countries, and green bonds used to finance a variety of water resources management projects. Overall, to scale-up investments and create a water-secure world, governments can crowd in private sector expertise, insight, and investment to ensure future water investments are smart, sustainable, and resilient.



Robert C. Brears, Founder of Our Future Water

Robert is the author of *Urban Water Security*, *The Green Economy and the Water-Energy-Food Nexus*, *Blue and Green Cities: The Role of Blue-Green Infrastructure in Managing Urban Water Resources*, *Natural Resource Management and the Circular Economy*, *Climate Resilient Water Resources Management*, *Developing the Circular Water Economy*, and *Nature-Based Solutions to 21st Century Challenges*. He is the editor of the *Climate Resilient Societies* book series with Palgrave Macmillan. Robert is a contributing author for the World Bank's *Water Blog*, *Asian Development Bank's Blog*, *United Nations Industrial Development Organization's Making It Magazine*, and *Green Growth Knowledge Platform*. He has published widely on water security, water resources management, and related issues, and has conducted field research around the world, including Antarctica. He is Founder of Mitidaption, Mark and Focus, and Our Future Water.



Margaret-Ann Splawn, Executive Director at Climate Markets & Investment Association

Margaret-Ann is the Executive Director of the non-profit Climate Markets & Investment Association (CMIA), a membership organization with the mission to stimulate a shift in the direction and scale of private and public financial flows into investments which are consistent with the objectives of the Paris Agreement. Before joining CMIA Margaret-Ann provided carbon origination, advisory, risk management and procurement services to compliance entities with carbon exposure in the EU Emissions Trading Scheme. Margaret-Ann has over twenty years experience in financial markets trading at a number of leading brokerage firms in bonds, interest rate swaps & options and credit default swaps. She holds a MSc in Environmental Policy and Regulation from the London School of Economics and is a Fellow at the Royal Geographical Society.

