

## Water in Emerging Markets – from challenges flow opportunities

- Demographic changes are stressing global water supplies to alarming levels; emerging markets will be hardest hit
- Water is a key catalyst in supporting global and local economic growth
- Necessity is pushing innovation in new water treatment and re-use technologies across the globe
- Water's impact across multiple SDGs makes it ideal for investors seeking to maximize sustainability impact

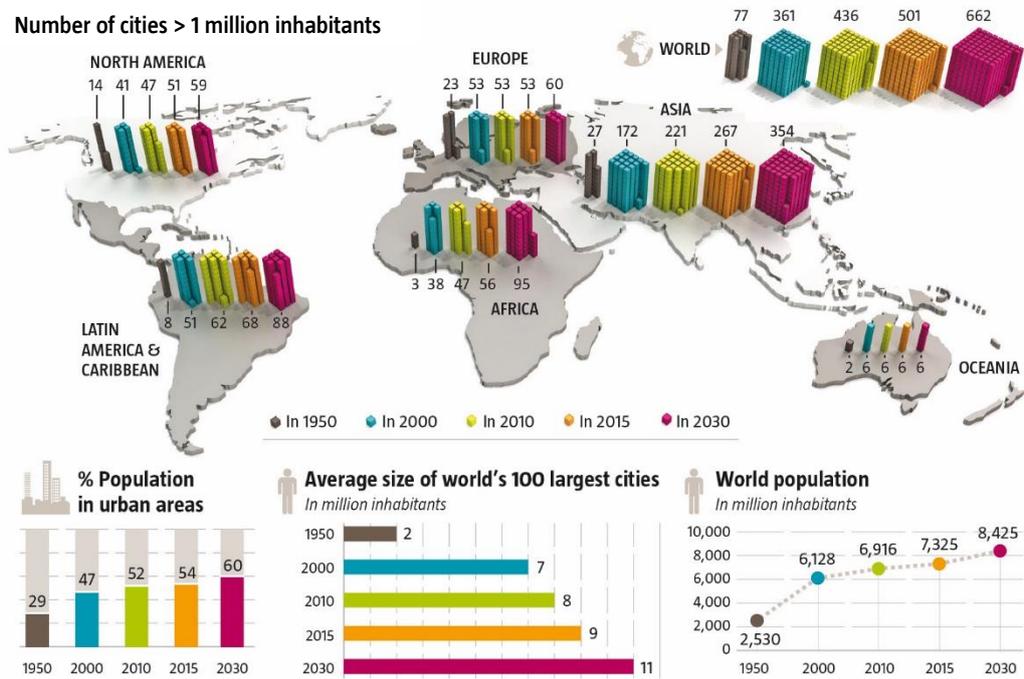


Population growth, increased urbanization and improving living standards lead to more intense water consumption

Water is clear and transparent yet full of contrasts. As a molecule and as a resource, it can bond—and it can polarize. It is seemingly abundant—yet critically scarce. Its value is priceless—yet it is wasted daily. While water scarcity has always been an issue for arid climates, across the globe more and more regions are maxing out reserves and threatening human health, local development and global economic growth. Currently, two billion people are living in areas of excess water stress.<sup>1</sup> Without change, demand for water will exceed supply by 40%.<sup>2</sup>

## Accelerating global and local demands

Figure 1: Demographic Trends—more people, more cities and more in emerging markets



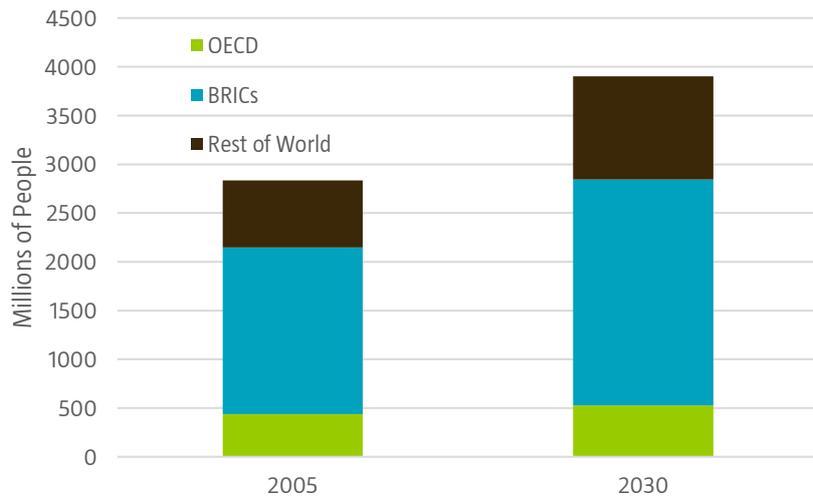
Source: United Nations' Department of Econ & Social Affairs Population Division, World Urbanization Prospects, 2014 Report

Global challenges like population growth, rapid urbanization, climate change, and rising living (and water) standards guarantee that water challenges will only exacerbate. The UN predicts a global population of 8.4 billion by 2030.<sup>3</sup> As populations grow, water consumption and water waste increases. More food must be produced—and not just rice, wheat and potatoes but water-intensive varieties like beef, chicken and pork. In parallel, people are shifting from rural to urban centers increasing demands on utilities to support life and industry. By 2030, 60% of the world's population will be in cities— most of these will be in emerging markets (See Figure 1).<sup>4,5</sup>

### Submerged in risk

No region can escape these secular trends. By 2030, nearly half of the global population will live in areas marked by severe water stress.<sup>6</sup> But effects are more intensely amplified in emerging markets. As populations grow, roughly 60% of those living in high stress levels will be in BRICS countries (see Figure 2).<sup>7</sup> Add to this the disproportionate impact of climate change in these regions. Ninety percent of all natural disasters are water-related.<sup>8</sup> Floods and droughts are becoming more frequent and more severe across the globe—but developing countries lack the infrastructure to buffer the devastating impact on public health and regional economies.

**Figure 2: BRICS populations — most affected by water stress**



Source: Fidelity research, OECD

Moreover, most developing markets are typically dominated by agricultural activities on farms that are ill-equipped, inefficient, and excessively polluting. As much as 90% of total water consumption among some developing countries is for agriculture—whereas the global total is closer to 70%.<sup>9</sup>

**Figure 3: How water is used**

#### Water use by sector

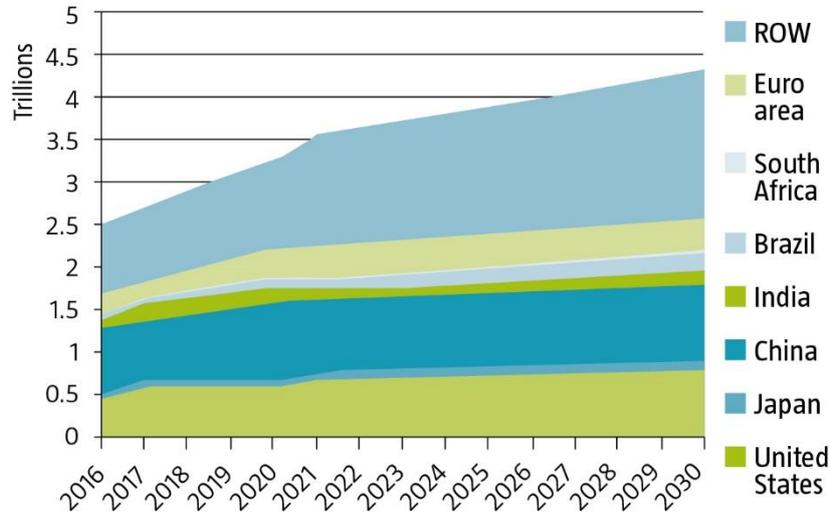


Source: Aquastat

What’s more, most agricultural irrigation uses raw waste water complicating water scarcity and water pollution issues. All human activity whether agricultural, biological, or industrial, produces water waste. The UNs 2017 Water Development Report, noted that 80% of wastewater released to the environment is not adequately treated--a highly contaminating problem for both local groundwater and global waterways as populations, food production and industrial expansion increase.

## Engines of Growth

**Figure 4: Infrastructure spending in BRICS projected to outpace developed markets**



Source: Citi Research

Emerging markets will not only be the population engines but also the economic engines fueling global growth. As a result, infrastructure improvements are needed to support manufacturing and industrial processing. Emerging market countries on every continent have already embarked on massive infrastructure programs. China, as part of its 13<sup>th</sup> Five Year Plan, aims to spend 0.75% of its GDP on water treatment.<sup>10</sup>

Countries aren't the only agents investing in solutions to the water crisis. From food and beverage to technology and textiles, companies from a broad swath of sectors are spending billions on water-related projects particularly in growing emerging markets.<sup>11</sup>

French food giant Danone will spend nearly US \$60 million in Sub-Saharan Africa and China to secure water for dairy and fruit products. Electronics maker, AU Optronics, has invested \$1.5 billion to improve water efficiency across production sites. Coca-Cola is investing \$160 million to build water plants in Cambodia and Bangladesh and spent US \$2 billion between 2003-2014 on improving water efficiency.<sup>12,13</sup>

The energy sector also has a keen interest in securing and conserving water. Roughly 75% of all industrial water withdrawals are used for energy production. Not surprisingly, energy companies are pumping billions into desalination technologies in areas of water scarcity.<sup>14,15</sup>

## Increasing public disclosure of water management policies.

Below are statistics from the 2017 CDP Global Water Report:

- Participating companies represented \$20 trillion in market cap
- 600% increase in company disclosure from 2010-2017

### Other sources of rising water pressure

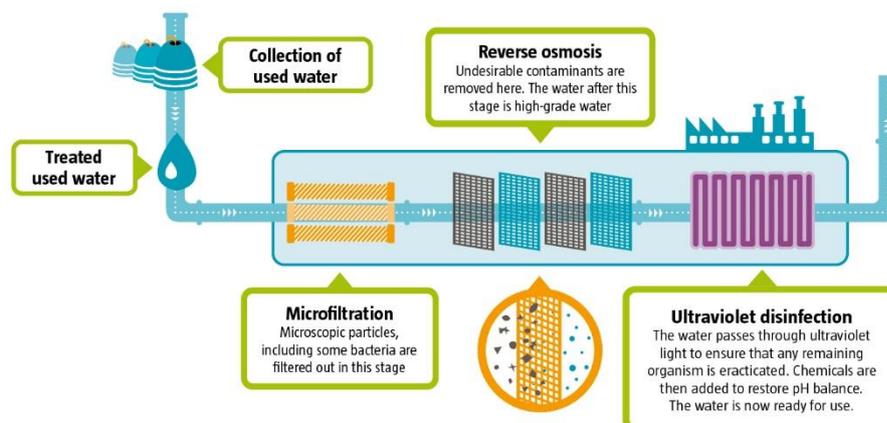
From a business perspective, expansion into emerging markets is critical for the continued growth of many listed companies. From a regulatory perspective, governments and citizens concerned about population health and ground water pollution are enforcing stringent water quality standards. From an investment prospective, responsible shareholders and other stakeholders are pushing for better water stewardship and water management disclosures to back it.

### Refreshing solutions to parched problems

The problems are as old as they are chronic. Ground water stores, river basins, and aquifers not sufficient in many emerging markets due to intensive overuse and mismanagement. The size and scope of need eclipses public budgets. But countries are proving, a little financing, ingenuity and long-term thinking, can go a long way. Singapore, Jordan and the Gulf States are just a few water stressed zones that are either pioneering and deploying innovation to combat water scarcity. Their success can be applied to other water-stressed areas.

**Singapore** – the small city-state is a powerhouse in water management. It is one of the most water stressed countries on the planet, but has invested heavily in water management technologies and techniques including natural rainwater capture, waste water treatment, and purification methods like microfiltration, reverse osmosis, and ultraviolet disinfection (See Figure 5).

**Figure 5: Singapore—a leader in waste water management techniques**



Source: UN Wastewater Report 2017

**Gulf States**—though fossil rich, freshwater poor. Given their ideal proximity to salty seawaters, Arab regions rely heavily on desalination as a primary water solution but other methods, like cloud seeding to produce rain, are also useful. Desalination is energy intensive and expensive, however, which dents its popularity and viability for many governments and investors. Desalination plants powered by wind and solar sources are more cost-efficient and sustainable opportunities.



Desalination is a valid solution to water scarcity, especially in dry, coastal regions where no other options exist.

**Jordan**—drought-plagued but undisputed leaders in water re-use and recycling. It treats and re-uses virtually all domestic waste water (90%) for irrigating croplands. Waste water requires less treatment than needed for municipal water supplies.<sup>16</sup> As previously noted, an estimated 80% of wastewater goes untreated, water that could be treated and used for agricultural and industrial purposes.

### **Water's rippling effect across SDGs**

The cost of building new and upgrading existing water infrastructure is enormous—the size and scope of need eclipse public budgets. Though estimates vary, the OECD puts water supply and sanitation costs at USD \$6.7 trillion by 2050.<sup>17</sup> Solving the water crisis or at least mitigating the water challenge requires serious innovation and investment from private and public sources.

The SDGs<sup>18</sup> are designed to codify and simplify global inequalities and challenges to enable governments and stakeholders, including investors, to tackle them with efficiency and efficacy.

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## The SDG 6, water management has a direct impact on more than half of the 17 SDGs

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Water management is addressed by SDG 6: Clean water and sanitation, but water's essential role in supporting healthy populations, ecosystems, economic development and global growth is more far-reaching. In fact, water management has a direct impact on more than half of the 17 SDGs. Investing in water companies, not only helps safeguard clean water supplies, it's also an effective way to optimize SDG contributions, reduce inequalities, and improve the lives of billions across multiple economic and health dimensions.

**The water fund gives investors exposure to not just water but also companies with the passion, perseverance and ingenuity to overcome challenges despite the odds.**



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> The water theme offers long-term growth opportunities that are already materializing. Water scarcity in many emerging markets will require increased investments in the water sector.

> For more information have a look at [www.robecosam.com/en/sustainability-insights/focus-themes/water](http://www.robecosam.com/en/sustainability-insights/focus-themes/water)

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## Endnotes

- <sup>1</sup> United Nations SDG 2016 Report
- <sup>2</sup> United Nations Environment Program, Policy Options for Decoupling Economic Growth from Water Use and Water Pollution, March 2016, <https://www.unenvironment.org/news-and-stories/press-release/half-world-face-severe>
- <sup>3</sup> UN Department of Econ & Social Affairs Population Division, World Urbanization Prospects, the 2014 Report
- <sup>4</sup> Ibid
- <sup>5</sup> UN The World's Cities in 2016
- <sup>6</sup> United Nations Environment Program, Policy Options for Decoupling Economic Growth from Water Use and Water Pollution, March 2016, <https://www.unenvironment.org/news-and-stories/press-release/half-world-face-severe-water-stress-2030-unless-water-use-decoupled>
- <sup>7</sup> Fidelity International Research Brief, Water: Structural demand growth creates investing opportunities, <https://www.fidelityinternational.com/middle-east/news-insight/21-century-themes/water.page>
- <sup>8</sup> United Nations World Water Development Report 2017, Wastewater: The Untapped Resource
- <sup>9</sup> Aquastat, FAO Global Water Information System, 2014
- <sup>10</sup> China's 13<sup>th</sup> Five Year Plan: What Role will Wastewater Play?, Water World, <http://www.waterworld.com/articles/wwi/print/volume-32/issue-7/technology-case-studies/china-s-13th-five-year-plan-what-role-will-wastewater-play.html>
- <sup>11</sup> Big Companies invest billions to secure water supplies, Financial Times, November 6, 2017
- <sup>12</sup> BBC, Future Now Project, Is the World Running Out of Fresh Water?, April 12, 2017
- <sup>13</sup> Harvard Business Review, September 9, 2015, Coca-Cola met its water goals early. Were they too easy?, <https://hbr.org/2015/09/coca-cola-met-its-water-goals-early-were-they-too-easy?>
- <sup>14</sup> United Nations World Water Development Report 2014, Water and Energy,
- <sup>15</sup> Financial Times Water Scarcity Report, World without Water: six solutions to a shortage,
- <sup>16</sup> United Nations World Water Development Report 2017, Wastewater: The Untapped Resource
- <sup>17</sup> Speech by Angel Gurría, OECD Secretary-General, delivered at the High-Level Panel on Infrastructure Financing for a Water Secure World, <http://www.oecd.org/environment/financing-infrastructure-for-a-water-secure-world.htm>
- <sup>18</sup> United Nation's Sustainable Development Goals, <http://www.un.org/sustainabledevelopment/>

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