

AP7 Theme Report **Water**

Report on the Fresh Water Theme 2016-2018



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Our mission. "Anyone who doesn't want to, or cannot, choose will have a pension at least as good as other people."

AP7 in brief. AP7 is a public agency tasked with managing premium pension funds for the Swedish population. Over four million Swedes currently invest their premium pension savings in AP7 Såfa. The total value of assets in AP7 Såfa is approximately SEK 600 billion, so management is a major responsibility. AP7's asset management is exclusively aimed at securing the interests of the pension savers, both current and those in the future.

AP7 is a universal owner. With investments in nearly 3 000 companies around the world, we can act as owners on a broad front and over a long term, with the entire market's interests in mind. By being an active universal owner, AP7 is securing the financial interests of both current and future savers.

AP7's corporate governance is primarily aimed at ensuring a positive effect on the long-term return for the entire market rather than for individual companies.

Managed assets: approximately SEK 600 billion

Number of savers: over 4 million

Investment portfolio: approximately 3 000 companies around the world

SDG 6 – a global goal that should be given higher priority

World Economic Forum has for several consecutive years listed a global fresh water crisis as one of the biggest threats to the world economy, with major consequences for the equity market. However, what investors can do to limit the risk has been less clear.

We started this thematic focus on freshwater by asking a basic question:

What role can institutional capital play, by financing solutions, satisfying investment needs, and exerting influence on companies to adapt their activities, in helping to attain the sixth UN Sustainable Development Goal: Clean Water and Sanitation?

Despite great progress being made towards the goal, billions of people still lack access to safe water and basic sanitation. This is a challenge that will require massive investments and major adaptations in many companies.

Three main findings emerged during the course of our theme on fresh water. The first is that there are no clear drivers for prioritising water risks. The second is that the water risks comprise a global systemic risk, but solutions are often local, which makes it difficult to implement general systemic initiatives.

The third is that there are opportunities for investors to make a difference, as active owners in companies with water risks in their value chain, and also because there are already many investment opportunities relating to the water problems. At the same time, legislation and political agendas limit the opportunities to invest in water infrastructure and investor's ability to contribute to a more sustainable society.

Our ambition is that this report will add to increased awareness on how investors can contribute towards attaining the sixth Global Sustainability Goal (SDG). We are wrapping up our fresh water theme, but the discussion must continue. It is therefore important that investors participate in international fora and discuss how we as investors can contribute. The fresh water problems are far from solved – this report only highlights the issue. But we are hopeful, because there is still time before 2030 and because the sixth SDG is one of the goals where the equity market can make a clear difference as investors and owners.

Stockholm, September 2019



Ensure access to water and sanitation for all.
See page 26



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Our themes

Since 2014, AP7 has been supplementing its corporate governance work with themed activities. Working in specific themes deepens and links AP7's current working methods in selected key areas. Focusing on a few themes at a time enables in-depth examination and reflection in a complex area relevant to our investments.

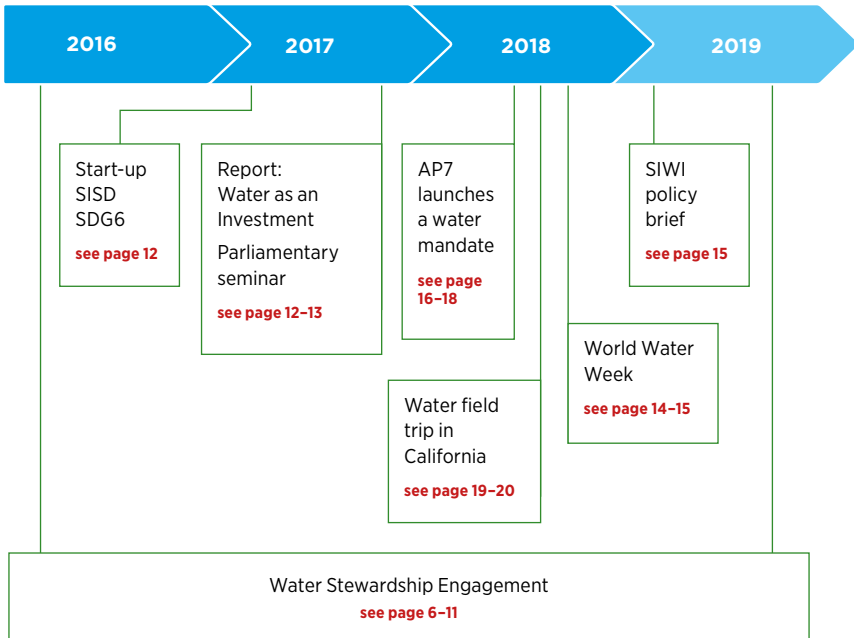
Every year, a new theme is launched that runs over three years. Some key selection criteria are applied when choosing a theme. The theme must be relevant in terms of AP7's holdings and asset classes, AP7 must be able to make a reasonable difference in a resource-effective way, and there must be suitable expert partners for collaboration.

A theme guides AP7's prioritisations in many ways during its duration, and this has consequences for the work with engagement dialogues and general meetings. It also brings greater collaboration with other actors, to exert influence on standards and norms within the area.



Theme: Fresh Water

2016–2018



The aim of the theme was to investigate how we, through our corporate governance and our investments, can contribute to the attainment of the UN's sixth Sustainable Development Goal, Clean Water and Sanitation (SDG 6). During the course of the theme, we analysed sectors and companies with high water risks.

We reviewed nearly 300 companies in the portfolio with high water risks, and conducted engagement dialogues with a selection of them. We also set up a water mandate that invests specifically in listed companies involved in water infrastructure.

In collaboration with other investors, we also carried out a study in which we found that more capital is available for investment than there are investment opportunities.

Water Stewardship Engagement, a three-year dialogue project

How can dialogue with portfolio companies influence their reporting on, and work with, sustainability issues? For three years, AP7 has been running a dialogue project with companies in sectors where water risks were deemed to be especially high. The study showed that the 20 companies with which we held engagement dialogues had improved more than the other companies in terms of transparency and reporting of water risks.



The report from the dialogue project shows that:

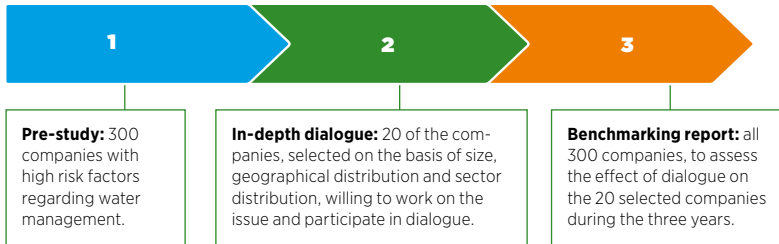
- Water is not prioritised. The companies have limited resources, and direct these to sustainability issues with higher risk, such as climate impact and human rights.
- The lack of priority given to the water issue is reflected in reporting, but the companies work more with water issues than is shown in their reporting, i.e. they under-report.
- Collaboration with actors upstream and downstream regarding a common water resource is a cost-effective way of managing the challenges linked to local water risks.
- Investors have an important role to play, by exerting influence on companies to improve their quantitative and qualitative water reporting.

Read the report here ap7.se/app/uploads/2019/06/water-managementandstewardshipreport_final.pdf

In our role as active owner, in 2016 AP7 started engagement work regarding water risks in our portfolio companies. We selected and reviewed 300 companies in three high-risk sectors with regard to water (food and beverage, mining, and the garment industry), to obtain an overall picture of how the sectors in general are managing their water risks. The aim was to build up knowledge in the field, to increase understanding of how we as investors can make a contribution, and to share this knowledge with other investors. We also wanted to examine whether dialogue in itself can exert influence on companies to improve their water management and reporting.

On the basis of the first review, we then selected 20 companies with high water risks, where we saw potential for improvement in how they manage and report on their impact on the water resource. One important aspect of the dialogues was to promote greater transparency and standardised reporting of water-related issues, and to drive improvements in how the companies assess, manage, and report water risks.

At the end of the project, at the start of 2019, we repeated the review carried out in the pre-study to see if there had been any improvements. This new review showed that the 20 companies selected had developed and improved their reporting and management of water risks considerably, much more than the other companies in the original

The project was run in three phases:

The dialogue with the companies started in February 2017, with the help of Sustainability (previously GES) in collaboration with five other investors: ACTIAM, the Church Pension Fund in Finland, KLP, OP Asset Management, and the Strathclyde Pension Fund.

sample. Many of the dialogue companies had implemented measures such as reviewing risks, drawing up a water strategy, and disseminating the method of working from part of the organisation to the entire company.

Water important ... but not a priority

Water stress is not new. The companies are aware of their great responsibility for how they use the water resource, and how their own activities affect the quality of water in the local community. Despite this, the companies' work on water management is slow, and the project has shown that development has almost stood still in the past two years among the 300 companies in the survey.

Most of the companies in the study regard water as an important issue, but one that is not necessarily prioritised. This can be for several reasons. Water has no price, and legislation relating to water is often sketchy, so the drivers for working with the water issue are weak. With limited resources, the companies choose instead to work with other sustainability issues, such as climate impact and human rights, where the risks and thereby external perception of the company are greater.

Companies under-report their work

The lack of prioritisation of the water issue is also reflected in the companies' reporting. We found that the companies generally under-report their work with water in their sustainability reporting and other official channels. This suggests they are working more with water management than they communicate externally. The demand for reporting on water seems to be weak, and the issue is overshadowed by other sustainability issues.

In addition, water is a complex area, so it can be more difficult to communicate on water issues. The challenges and risks associated with water management vary between sectors and geographical regions, so the companies need to be flexible and adapt policies, methods of working, solutions and performance indicators to local or sector-specific



Water has no price, and legislation relating to water is often sketchy ...

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conditions. For example, the food and beverage and the garment sectors should describe their work in the supply chain, while the mining industry should focus its reporting on operational discharges to water and initiatives in the local community.

Barrier caused by lack of reliable water data

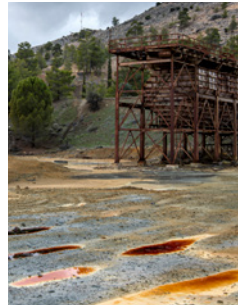
Development of common standards for measuring the companies' impact on the water resource would make reporting easier. Here, the lack of available and reliable data is a barrier. Knowledge about the local water resource and how it changes over time, for example, seasonal variations, is poor, making it difficult to manage and measure risks and impact.

Apart from the garment industry, the companies are generally better at managing and reporting internal water risks, water consumption and water efficiency than reporting their impact on water quality and discharges. However, even internally, the lack of data on water use and efficiency can make reporting difficult.

Collaboration on water resources

The companies often lack an overarching perspective and focus, in some cases solely, on their own production chain and direct impact. However, many significant water risks lie outside the companies' direct control but, like private individuals, they are nevertheless expected to take responsibility for their impact on water in the immediate surroundings. Collaboration with other actors upstream and downstream regarding a common water resource is a cost-effective way of managing these types of challenges.

Here, there is great improvement potential by applying Integrated Water Resource Management, IWRM. By going outside their own organisation and collaborating with different actors, such as other companies,



GOOD EXAMPLE #1 Managed Issue: Agricultural Supply Chain Water Management

For an international beer producer, 90 percent of its water footprint derives from agriculture.

KEY LEARNINGS

Barley is the main raw material, accounting for no less than 73 percent of the company's water footprint, so the company is focusing on this crop. The company bases its purchasing decisions on information regarding the source of the barley, whether irrigation is needed, and whether the area suffers from water stress.

The company has committed to 50 percent purchase of sustainably sourced barley in 2020, and is well on the way to reaching the target. The initial commitment in 2016 concerned barley, hops and apples, but this has now been

extended to other crops, including rice, wheat, maize, and sugar beet.

The company has also implemented a code of conduct, which all suppliers must sign. Under this code, suppliers are expected to make efficient use of available resources and minimise environmental impact.

Together with a university in a North African country, the company is developing a barley variety with a shorter growing period, thereby requiring less days of irrigation, and that is more heat resistant and less vulnerable to pests – without gene manipulation.

public agencies and the local population, on the management of a common resource, all parties can benefit from increased water quality and cost-effectiveness.

Some sectors have come further than others

Of the investigated sectors, the soft drinks companies have come furthest in their work on water. Water is their most important raw material, so they must consider the cost aspect. For the garment companies, the greatest water risks are found mainly in the supply chain, where the distance to their own organisation reduces their degree of control and their sense of responsibility. However, companies in the food and beverage and the garment sectors have greater awareness of the need to work actively with the supply chain.

Many of the mining companies have shown improvements in their work with local communities, where they are an important actor and employer. The mining companies should continue to find ways to collaborate with other actors through integrated water management and associated reporting.

Dialogue brings advantages for investors

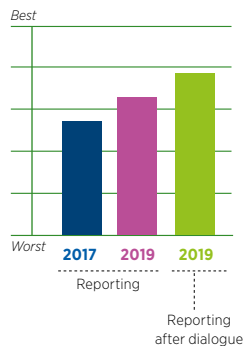
Collaboration between different actors, including us as investors, is important for developing solutions in the water area. Discussions have been a useful tool for obtaining information about the companies' water-related risks and opportunities, and about how they are working to implement policies and manage their impact.

The trend regarding reporting is positive, but there is still a discrepancy between the published information and what the companies are actually doing. Investors therefore have an important role in encouraging the companies to improve their quantitative and qualitative water reporting.

Improved reporting through dialogue

The companies with which we conducted dialogue improved their reporting on water risks more than the other companies between 2017 and 2019. In the dialogue, information provided by many of the companies further improved knowledge about how they manage water risks. This shows that active owners can improve company reporting, which can then lead to better risk management.

For more detailed information, see the Sustainability report.



GOOD EXAMPLE #2 **Managed Issue:** Work to prevent pollution

If mining waste containing sulphides is left uncovered and exposed to the weather, an oxidation process causes weathering to take place. This produces an acidic and often metalliferous leachate, Acid Mine Drainage (AMD), which escapes to the surrounding environment. One large mining company with AMD problems at four of its 40 mines is working to manage the issue.

KEY LEARNINGS

Historically, companies have managed this problem reactively where it has arisen, but this mining company is working to identify sites where there is a high risk of acidic discharge in the future. A large study was carried out to assess the rock and the water, to increase knowledge about mining waste that contains sulphides.

The mining company increased the number of employees involved in geochemical characterisation, thereby enabling assessment of the rock geochemistry

at all the company's mines worldwide. The company also implemented collection and treatment systems at one of the mines where acid discharge occurred.

Another area of focus was to prevent the weathering of mining waste at the sites where acid discharge could occur. At these sites, the mining company developed sulphate-specific membranes to remove the sulphate from the water and allow recovery of the sulphate for use in other ways.

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Calls for reporting can, in itself, encourage the companies to accelerate work in the area. Other relatively simple measures for companies are to start measuring inflows and outflows of water in production, and to set targets for consumption.

The portfolio companies that participated in the dialogue showed greater improvements than other companies in the same sectors, indicating that the dialogue has brought results, while also giving us a more detailed picture of risk management. The companies now have greater understanding of their risks and impact, and for the opportunities for collaboration relating to water. This puts them in a stronger position to manage the risks, devise relevant measurement figures and systems, and adopt proactive methods of working and spread them in the organisation.



By collaborating with different actors, increased water quality and cost-effectiveness can be attained for all parties.



GOOD EXAMPLE #3 **Managed Issue:** Assessing Water Risk

A global beverage company observed increasing problems around the world concerning water stress, associated with matters such as quality, availability, infrastructure and pricing.

KEY LEARNINGS

The company conducted a qualitative risk assessment through interviews with 20 business units. This analysis identified several issues entailing a risk of impacting the business, and that also impacted suppliers and franchisees.

The qualitative assessment was general and hard to base any concrete action on, so the company supplemented the initial analysis with a quantitative risk assessment. Detailed information about water quantity and quality was collected, as well as information on local legislation, freedom of the press, credit assessment, etc. A detailed survey was carried out, involving all production units in the business.

On the basis of the collected information, the company formulated a risk model that showed the risks at each specific facility, and calculated their frequency, probability, consequences and impact. This com-

prised a clear business case, as the risks were too big to live with and impossible to insure against.

The company identified the big drivers underlying the risks as regional-level water stress, the agricultural supply chain, and whether the company as perceived as a big water user, and thereby having greater responsibility. The quantitative risk assessment is repeated every 2-3 years and plans to reduce impact are updated at the same interval.

It became clear that it was not enough to manage the water issues internally, so the company formed partnerships, both locally and with voluntary organisations and development bodies. The company reports that, so far, three million people have been given access to safe water, and that it has invested in projects on rivers and streams, and in river basins around the world.

GOOD EXAMPLE #4**Managed Issue:** Water, Sanitation and Hygiene (WASH)

A large company in the food and beverage sector noted that over two billion people around the world still lack access to safe water and sanitation, which is a sign of how society sometimes fails and how difficult it is for companies to plan for such failings. The company observed that the issue is basic and straightforward: if you are selling a food product and the consumers need water to prepare and cook it, and if your employees need water in everyday life, it is obvious that access to safe water is of the utmost importance.

KEY LEARNINGS

The company has signed the WASH Pledge, an undertaking linked to the World Business Council on Sustainable Development (WBCSD). Approximately 50 companies have signed the undertaking. Through WASH Pledge, the WBCSD wants to show governments that companies support WASH.

The company has reported on its progress in this area and finalised the related assessment covering its factories, offices, and distribution centres. Nearly all the company's units have now implemented WASH.

Alongside its direct operations, the company is working with external organisations such as The Red

Cross on basic supply chains, and is working actively to support WASH in communities around factories in India and Pakistan. The company's WASH initiatives are reaching approximately 650,000–700,000 people.

The company is also highly involved in the Alliance for Water Stewardship (AWS), where there has recently been a discussion on whether WASH should be included as a specific outcome in the AWS Standard.

Published studies show that every dollar invested in WASH gives a return of 3–4 dollars; for example, for the company, this has led to a smaller number of sick days caused by water-borne diseases.

GOOD EXAMPLE #5**Managed Issue:** Collective Action/Collaboration

A global fashion group wanted to go further than simply cleaning up its own supply chain; they did not want to just be a 'clean fish in a dirty pond'. The company started looking at the water situation along the water resource, as well as at the regional and national level, and what changes were desirable in the water issue.

KEY LEARNINGS

Together with an international voluntary organisation, in 2016 the company conducted a study in one of its countries of operation, to identify gaps in legislation regarding water governance and the impact on the garment sector. The study found that the Water Act did not apply to the garment sector, despite the sector accounting for 83 percent of the country's exports. The company has worked to convince the authorities about the importance of including the garment sector in legislation.

The company is collaborating with other sectors, giving an example from an export processing zone (EPZ) in Bangladesh, where it has worked with local authorities to set up a framework for how to address the water issue. The work, which was not confined to water withdrawal, also concerned overall water

use within the zone, including water treatment and recycling.

In addition, the company has launched a new platform in a key country for textile and raw material (cotton) production, focusing on a specific river basin. In September 2018, the company and an international voluntary organisation launched guidelines for clean production in the basin.

The company is also running collaborative projects in China to help suppliers towards cleaner production. The related guidelines have already been implemented at one industrial park and are being introduced in a second. Here, the company is collaborating with an international voluntary organisation and two large fashion and retail brands, and the companies are trying to get more partners involved.

Investments can solve water problems

The Swedish water and wastewater networks require massive investments. Plenty of capital is available, but investment opportunities are few.



Report: Water as an Investment

In 2017, AP7, together with AP3, SPP, The Church of Sweden and Skandia, published a report on barriers to investment in water infrastructure. The report found that the amount of capital available for investment exceeds the opportunities for investing in maintenance of the water and wastewater networks. A number of barriers were identified that are preventing investors from contributing to the maintenance of sustainable water and wastewater investments.

[Read the report here \(in Swedish with English Abstract\).](https://ap7.se/app/uploads/2017/11/F%C3%B6rstudie-Vatten.pdf)
ap7.se/app/uploads/2017/11/F%C3%B6rstudie-Vatten.pdf

During the theme period, AP7 collaborated with other investors to investigate which barriers were preventing investments in sustainable solutions for the water infrastructure.

Within the framework of the Sida initiative, Swedish Investors for Sustainable Development, SISD, AP7 together with SPP, The Church of Sweden, AP3, East Capital, Skandia and Sida have created a platform for learning and share experiences regarding the UN's sixth Sustainable Development Goal. Some of the work has involved investigating water-related investment needs and opportunities. We discovered that Sweden is facing extensive challenges in the area.

Investment capital exceeds investment opportunities

The water situation in Sweden is serious, and the authorities often have to issue warnings about contaminated drinking water, flooding and water shortages. The needs for upgrading are enormous, and there is reason to believe that more stringent environmental requirements will be introduced in the future on treatment of wastewater, for example, regarding drug residues and microplastics. In 2017, together with our collaboration partners, we carried out an investigation that indicated a willingness to invest capital in 'green and blue investments' but that the capital available exceeds investment opportunities, despite the great needs for investment.



The water situation in Sweden is serious, and the authorities often have to issue warnings about contaminated drinking water, flooding and water shortages.

The report 'Water as an Investment' examines the conditions for sustainable investments in water and wastewater in Sweden. Through interviews with municipal politicians and experts in the water and wastewater field, we identified a number of barriers to these investments and the challenges Sweden is now facing:

Low risk awareness and lack of capacity. Awareness of risks and defects in the Swedish water and wastewater infrastructure is low, and must be raised, both with the general population and decision makers. Lack of awareness of the problem means there is little acceptance for both necessary investments and raised tariffs. Many specialists born in the 1940s with great expertise regarding the water and wastewater network have now retired, resulting in poor information on which to base investment decisions, and investments are directed to new construction rather than necessary maintenance. Lack of consultants and contractors in the field also reduce the opportunities to invest in and maintain the existing infrastructure. Above all, smaller municipalities have great difficulties in planning strategically and for the long term.

Opposition to raised water tariffs. The Swedish Public Water Services Act stipulates that water and wastewater operations are to be municipal and self-financed. Charges may not exceed the costs of operating the facilities, and private ownership is not permitted. Swedes are accustomed to relatively low water tariffs, while also demanding high water quality. Politicians are reluctant to raise water and wastewater tariffs, which means, in principle, that there are never excess funds available for significant maintenance investments.

Reluctance to increase municipal debt levels. If the water tariffs cannot be increased, the municipalities must borrow money to finance maintenance of the water and wastewater infrastructure. However, the municipalities' total loan debts have been increasing for many years, and decision makers are reluctant to increase municipal borrowing, despite the current low interest rates. There is access to capital, but the willingness to invest is low when the water and wastewater loans are included in the municipalities' total debt. Green bonds, directed particularly towards sustainability projects, are available on the market, and will become more important.

In summary, we believe that national coordination and support to Sweden's municipalities will be needed, to tackle the challenge posed by the great need for investments to upgrade the water infrastructure. Initiatives are needed that extend over many mandate periods and that require specialist expertise.

Seen from a global perspective, the Swedish problems comprise an interesting illustration of the challenge we are facing ahead of transitioning to a more sustainable society. Many other OECD countries are facing similar problems.

During the year, an international comparison with Africa was carried out through Sida, which showed that many of the problems are similar.



Debate article in DI

On 14 November 2017, a debate article was published that we had written together with SPP. The article summarised the conclusions from the report.



Parliamentary seminar

In November 2017, we arranged together with SPP a parliamentary seminar on the issue of investments in the water infrastructure. The report, 'Water as an Investment', was presented, and the discussion revolved around the growing need for investments in maintenance and extension of the water and wastewater infrastructure and treatment, and what it is that is preventing the necessary development.

“The problem is global, but the solutions are local”

AP7 is constantly looking for investment opportunities that help to solve sustainability-related problems, and observed at an early stage that more capital is available for investment than there are investment opportunities. Johan Florén, Head of Communication and Corporate Governance, comments on the report ‘Water as an Investment’.

Tell us about the background to the study.

– In view of the enormous investment needs that lie ahead of us in the coming decades because of the transition to a more sustainable society, it’s a bit of a mystery why there’s not more to invest in. We decided to carry out a case study of Swedish water infrastructure, to identify the underlying reasons for the lack of investment opportunities.

What was the most important finding from the study?

– We found that a number of factors were interacting. For example, there are only municipal owners, but also that operation is of no interest for private actors because of the self-financing principle, i.e. that water and wastewater operation must be self-financed. There’s also a lack of interest and awareness of the problems among

the broader public, and skills supply is also a problem, particularly in small municipalities.

Investments in water and wastewater do not affect the municipal budgets, because they are financed by tariffs. However, politicians are unwilling to increase the water and wastewater tariffs, and new investments come before maintenance. An investment debt being built up, and this continues to grow.

How is the study valuable?

– The study is valuable for explaining the situation in Sweden, where we have a clear need for structural changes, but also for understanding the barriers that can be found in other parts of the world. During Stockholm Water Week, we held for example an interesting event together with a number of African actors, where we compared the situations in two completely different parts of the world, and saw similarities.

How do you see the opportunities in the future for AP7 as an investor?

– There’s no one simple solution to the world’s problems regarding fresh water. Even if the problem is global, the solutions are often very local, which makes a broad approach difficult. However, on the positive side, there are innovative technical solutions that are already established on the market for many of the specific problems, such as treatment, recycling, and desalination. At AP7, we see this as an opportunity that we will be exploring further within the framework of our listed water investments in the coming years.



Johan Florén (middle) in conversation with Peter Mahal Akat (right), head of South Sudan’s rural water supply organisation, TAC South Sudan, during World Water Week 2018.

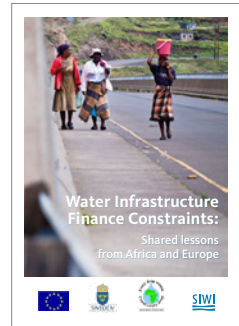
Financing is a global concern

Solutions are greatly needed to enable sustainable financing of the projects required to attain the UN Global Sustainability Goal 6 on clean water and sanitation for all. The problems relating to Swedish water infrastructure are shared by many other OECD countries.

For example, in 2018, an international comparison with Africa carried out through Sida showed that many of the problems relating to financing are similar. The water infrastructure in much of Africa is poor, and needs to be developed and maintained. Investment capital is available, but the barriers to financing prevent projects getting off the ground. These barriers mainly concern challenges linked with regulatory frameworks, pricing, and the general population's willingness to pay.

According to OECD assessments, the global investment levels need to be increased from nearly USD 7 trillion in 2030 to more than USD 22 trillion in 2050 if we are to attain the UN's Sustainable Development Goal.

Stockholm International Water Institute (SIWI) drew up a policy brief based on lessons learned in Sweden and Africa. The brief comprises lessons learned and recommendations for removing barriers that limit sustainable financing solutions for water infrastructure globally. For example, one recommendation in the policy brief is to increase the participation of the private sector in supplying water infrastructure and related services through long-term performance-based contracts.



Stockholm International Water Institute (SIWI) policy brief.



AP7 participated in the World Water Week arranged by the Stockholm International Water Institute (SIWI). The participants observed that Sweden and Africa share many challenges linked to financing of water infrastructure projects.

USD
22
trillion

Global investment levels need to be increased from **almost USD 7 trillion** in 2030 to **more than USD 22 trillion** in 2050 to attain the UN's Sustainable Development Goal (SIWI, 2018).

Investments in blue gold

The Irish fund manager KBI Global Investors (KBIGI) established their Water Strategy in 2001. KBIGI has approximately EUR 1000 million under management in its Water Strategy (Source: KBIGI as at 31 August 2019), and invests in a range of stocks engaged in activities across three categories: Water Utilities, Water Infrastructure and Water Technology. They manage a high-conviction, global, long-only equity portfolio that invests in 35–50 publicly traded companies, all of which are involved in providing solutions to the problem of water scarcity globally.

What are the main critical perspectives of water?

– Water is essential to sustaining life and is critical to a thriving global economy, as water is an essential input across many industries. Growing demand for fresh water from a rapidly expanding global population, coupled with unrelenting demand from industry and agriculture, has focused the world’s attention on how we manage our scarce water resources. Today, nearly 800 million people lack access to clean drinking water and 2.5 billion people lack access to basic sanitation. It has been estimated that, unless water provision is adequately addressed, 45 percent of the projected global GDP in 2050 (approximately USD 63 trillion) could be at risk. You only need to read about last year’s water crisis in Cape Town, where the city was close to running out of water and significant cuts in daily domestic water consumption were imposed, to understand how critical water is to the proper functioning of the global economy. Cape Town just happens to be the most recent example of such events occurring on a more frequent basis globally.

What are the trends supporting water as an investment?

– Water is a key resource that will need significant investment to ensure its adequate provision to a growing global population. Our objective in KBIGI is to generate attractive long-term superior returns through exposure to several dominant and persistent growth themes as outlined below:

- There just isn’t enough water on the planet, and supply is generally not located in the areas of highest demand.
- Demand for water is forecast to grow by 40 percent by 2030, driven by population growth, industrialisation and urbanisation.
- There is a huge increase forecast in infrastructure investment globally: infrastructure for an estimated USD 13.7 trillion will be required by 2030 to address urgent global requirements for water and wastewater services worldwide.
- All of this is supported by greater regulation: across the world, governments are insisting on higher standards for water and wastewater services, as evidenced by the Safe Drinking Water Act in the US, the Water Framework Directive in Europe, and China’s Water Standards Regulation.
- We’re also seeing massive investment in technology designed to help address water shortages and quality: technology is an increasingly important part of the solution kit being used to address the global shortage of clean, safe water and wastewater services.

We see that these drivers are persistent and ever-increasing, and they’re supporting what we believe to be a multi-decade sustainable investment case capable of delivering superior alpha.

What is your approach within the Water Strategy?

– We precisely define the ‘Water’ theme to create an approved sustainable investment universe of about 160 stocks that accurately reflects the opportunity set. Companies included in the Water universe include manufacturers, service providers and operators.

We primarily use a bottom-up, fundamental, research-intensive approach to build the high-conviction portfolio of 35–50 stocks. Weights in securities of companies are chosen based on our assessment of their relative attractiveness as investments. There is also a risk management overlay looking at liquidity, purity, quality, volatility and diversification. We believe that the specialist focus of our portfolio team, all of whom only manage water equities and nothing else, gives us an informational advantage. We invest in stocks of all market cap size and from all regions. Some examples of our preferred stocks as at the end of August 2019 include Kurita Water Industries Limited, a Japanese provider of ultra-pure water systems, Veolia Environnement, a French utility, Valmont, an American manufacturer of irrigation equipment, and Alfa Laval, the Swedish leader in technology in the area of heat transfer, separation and fluid handling.

Has your Water Strategy led to returns exceeding index?

– The KBIGI Water Strategy has significantly outperformed the global equity market. Since its inception, the strategy has outperformed the MSCI All Country World Index (net return) by 2.5 percent per annum, gross of management fees. *(Source: KBIGI & DataStream; returns in EUR from 31 December 2000 to 31 August 2019).*



Noel O'Halloran, Chief Investment Officer, KBI Global Investors.

Could you elaborate on your view on impact investments within your Water Strategy?

– In addition to generating an attractive return for investors, another goal is to build a portfolio that positively impacts on society – by this we mean that the products and services of the companies in which we invest provide solutions to global water quality and scarcity issues. The companies will typically be solution providers that help increase supply of water, decrease demand, help improve water quality or are involved with extending and repairing water infrastructure. Within KBIGI we have pioneered a methodology to measure the impact of the entire portfolio as it specifically relates to the UN Sustainable Development Goals. Using the end 2018 portfolio, we calculated, using our proprietary methodology, that 71.6 percent of the revenues of the KBIGI Water portfolio are positively aligned to the attainment of the UN SDGs.

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What is your outlook on investing in water?

– We think the KBI Water Strategy is at a unique point in time, with a very attractive blend for investors who are looking for a way to access the water theme. In our view the strategy is well balanced across water end markets – examples include large scale engineering, consulting and design, water treatment, irrigation, utilities in developed and emerging markets, water desalination and smart metering across all market caps and regions. We're investing in companies with strong fundamentals and good visibility of earnings and, crucially from an investment perspective, the portfolio is trading at the most attractive relative valuation in the history of the strategy. *(Source KBI Global Investors, DataStream)*

In summary, the theme has significant long-term drivers supporting the investment case that become more relevant with each passing year,

including population growth, urbanisation, industrialisation, increasing regulation, water technology advancement and infrastructure installation. We believe we are still in the early part of government and policy-oriented spending on water infrastructure that is picking up globally and still has many years to run in terms of playing out.

While not wanting to dismiss market concerns that we are late in the current economic cycle, and global economic growth is not strong, we think that cyclical risks are limited, as much of the portfolio is geared towards non-cyclical, regulatory-driven and break-and-fix end markets. While we have some exposure to cyclical end markets, most of our cyclical exposures are in long cycles that are still near the bottom, having peaked at some point in the last five years. We continue to believe that the underlying earnings of our companies can grow faster than the market, over the medium term, as they have done historically.



In summary, the theme has significant long-term drivers supporting the investment case that become more relevant with each passing year, including population growth, urbanisation, industrialisation, increasing regulation, water technology advancement and infrastructure installation.

Water risk field trip:

Technical solutions to water shortage in California

At 'PRI in Person 2018' in San Francisco – the world's largest conference on sustainable investments – AP7's Charlotta Dawidowski Sydstrand and a group of other investors learned more about the water situation in California, by visiting companies and public agencies.

California is an interesting case study from the water perspective. Precipitation here is a quarter of that in Sweden, and there is an almost permanent drought around Los Angeles and San Diego.

California is also a region with one of the world's most productive agricultural sectors. No less than 80 percent of California's surface water and groundwater is used in the cultivation of fruit, vegetable and nuts. More than half of the world's almonds are produced in the state, consuming vast quantities of water.

The biggest barrier to sustainable water use is the coordination of 1200 water districts and 3000 water suppliers. At the same time, legislation in terms of use of groundwater is lagging behind. So how does the state manage to provide its big cities, industries and agriculture with water?

Where regulations are failing, technology provides solutions. During the visit, the investor group was able to see many examples of how innovative technology is enabling sustainable use of water. Here you can read about some of them.

Recycled water in Los Angeles

Los Angeles is situated in the dry areas of southern California, and the city is dependent on imports of water from the northern parts of the state.

The citizens of Los Angeles are generally conscious of the valuable resource that is clean water, and are careful in their water use. The authorities have invested heavily in public information, and water consumption per person has considerably decreased in recent years.



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The investor group visited a water treatment plant in Los Angeles, where a treatment plant and infiltration facility is being built to treat wastewater before injecting it back into the groundwater storage. This is a pioneering new technology that will be supplemented with a public education centre.

So, instead of importing water, the aim now is to reuse the water that is already there.

Technology in almond cultivation

California has one of the world's most productive agricultural sectors, but this is completely dependent on artificial irrigation. The farmers usually pump up groundwater, which has led to the groundwater storage being overused and, in certain cases, depleted.

Outside Fresno, the investors visited an organic almond farm that is reducing its water consumption through drip irrigation. In this method, the water is portioned out in small drops near the roots instead of spreading it using large sprinklers, where much of the water evaporates.

Technology is being used to optimise production. Satellite data and apps show how dry the trees are and the chlorophyll content of the leaves. From this data, the irrigation and nutrient application is calibrated to each individual tree. It is far from the idyllic scene of small-scale farming you imagine with organic farming, but it is efficient in its use of water.

“ Where regulations are failing, technology provides solutions.



The almond tree is one of the most water-demanding crops. To produce a single almond, over four litres of water are required.

Conclusions, key messages, and further investigation

This section lists our conclusions from the Fresh Water theme, key messages to other investors who want to contribute to resolving the issue of fresh water, and areas where further investigation is needed.

Conclusions

1. Weak drivers for prioritising the water issue.

- Freshwater competes with other sustainability issues.
- Municipalities' engagement and awareness of the risks in the Swedish water and wastewater infrastructure are limited.
- The Swedish challenges reflect the situation in many countries.

2. A complex systemic issue

- Water risks comprise a global systemic risk for the economy, but the solutions are local.
- A holistic perspective is often lacking when it comes to managing water resources.
- There are technical solutions at microlevel, but unclear solutions to the complex global fresh water problem.

3. Water data is lacking

- Measurements and methods need to be developed.
- It is easier to measure quantity than quality/contaminations.
- Local conditions make it difficult to interpret data.

1. Weak drivers

A recurring reflection during our theme is that both companies and municipalities lack clear drivers for prioritising the water issue, which is complex. Poor governance and weak legislation, no or weak pricing of water resources, and low risk of damaging a company's reputation if they do not manage water risks, could be some of the reasons. For most companies, water is not a financial risk in the short term.

Companies in the study with high water risks are usually aware that water is an important issue, but with limited resources and in competition with other sustainability issues, the work and

reporting on water risks is often given a low priority.

The companies in our study generally under-report their water management, which can partly be because even investors devote greater interest to other issues. This means that the companies' management of risks is difficult to assess and could be either better or worse than what is shown in their sustainability reporting.

Swedish municipalities' engagement and awareness of the risks in the Swedish water and wastewater infrastructure is limited. The issue is technical, and politicians need specialist

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Conclusions

resources that are not always available. Where there is awareness, the drivers for investing in existing water and wastewater networks are weak. According to the Public Water Services Act, public water and wastewater facilities must be run by municipalities. On the operational side too, there is a lack of private actors, as they are not permitted to make a profit. The costs for investments in the existing water network are perceived as high, municipalities are unwilling to increase their borrowing, and citizens (voters) are not positive to increased water tariffs.

During World Water Week 2017, AP7 participated in a panel discussion arranged by the OECD Roundtable on Financing of Water, where the challenges in terms of financing the Swedish water and wastewater system were shown to reflect the situation in other OECD countries. The following year, at World Water Week 2018, we held an event together with a number of African actors where we compared similarities and differences in two completely different parts of the world. In many cases, the lack of drivers in African countries is the same as in Sweden.

2. A complex system issue

Water risks are not limited to the high-risk sectors we focused on or the most water-stressed regions in the world. Water risks comprise a global system risk for the entire economy. Calculations show that, in 2030, the need for water will exceed supply by over 40 percent ¹⁾. A global fresh water crisis can be assumed to entail serious consequences for the equity market. Consequently, the problems are global, while the solutions are local and must consider social, environmental and economic local contexts, making overarching management difficult.

In the dialogue with the companies, it became clear that a holistic perspective is often lacking regarding river basins and water resources. Naturally, companies focus on their direct impact, and miss significant risks that concern common water resources. In order to achieve results,

management of these risks requires collaboration between companies, organisations, public agencies, and other actors in society.

Although there are plenty of examples of technical solutions that can solve problems at microlevel, the global fresh water problem is so complex that it is currently unclear how a global solution could be formulated.

3. Water data is lacking

Investors and companies require better water data, to analyse and manage their risks. Measurements and methods need to be developed, but also the relationships between different measurement units and indicators must be clarified and established.

The results in the Water Management and Stewardship study indicate, for example, that companies find it easier to measure quantity/water consumption than quality/contaminations. Perhaps one measurement is always superior to the other, or perhaps they vary from situation to situation. One litre of water saved in Sweden does not have the same value as one saved in Kenya. Interpreting data systematically is a problem because it is more context dependent compared to, for example, carbon dioxide emissions.

Development of measurements and methods for measuring and following up the use of water resources is a global challenge that could be made easier via digital innovations and new technology. This particularly applies to agriculture, which accounts for the greatest water use globally, and where the lack of data can result in both the use of unnecessary amounts of water and suboptimal harvests.

¹⁾ CERES Investor Water Toolkit, 2030 Water Resources Group 'Charting Our Water Future: Economic frameworks to inform decision-making'.

Key messages to investors that want to contribute to SDG6

1. Through investments

- Good opportunities for impact investments in all asset classes.
- Investments limited by political decisions.

2. By being active owners

- When the role of investors in contributing to SDG 6 is discussed, the role of active ownership is often overlooked.
- Active owners can help to improve corporate reporting and risk management.
- Company dialogues are a good way to obtain a better picture of the water risks in the portfolio.

3. By collaborating with knowledge partners

- Utilise collaboration models that have been developed in the climate field.

1. Through investments

The good news is that investors can make a significant contribution to SDG6 by investing in solutions to the water problem. There are probably good opportunities for investments in all asset classes: securities, listed and unlisted stocks, tangible assets, and different forms of project financing.

However, investors' opportunities to contribute are limited by a number of factors outside the financial sector, in particular national and international political decisions to initiate projects and transition to a more sustainable society. Our study of the Swedish water and wastewater system shows that the massive investment needs are not being addressed because of legal, structural and political barriers, and lack of awareness, capacity and pricing.

However, on the positive side, there are innovative technical solutions already established on the market for managing many of the specific problems regarding treatment, recycling, desalination, etc.

2. By being active owners

Investors have an important role as active owners in companies and organisations with high water risks. Investors are seen primarily as financiers in many water contexts, and the role as significant stakeholder is overlooked. Here, investors as a collective can make a difference.

Investors can play an important role in promoting and raising the prioritisation of water risks in companies, by calling for measurement, follow-up, governance and collaboration with other actors.

AP7 started the corporate governance project with Sustainalytics at the start of 2017. The project involved reviewing approximately 300 portfolio companies with high water risks and their reporting. After two years of more in-depth dialogue with a selection of the companies, we repeated the review. This revealed that the companies with which we held dialogue had improved their reporting more than the others. Even if more knowledge is needed about how investors can exert influence on companies, our study shows that active owners can improve company reporting, which can then lead to better risk management.

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Key messages to investors that want to contribute to SDG6

Water is somewhat overshadowed by the climate issue, which attracts more attention. Companies and investors need to be more aware of water as an ecological and economic system risk, a risk that is intimately connected with the climate risks. Despite the issue gaining some attention, there are still few investors who have water risks as the highest priority.

Companies tend to under-report on water, so company dialogues can be one way for investors to obtain a better idea of water risks in their portfolios.

3. By collaborating with knowledge partners

One possibility for investors wanting to engage in fresh water issues is to utilise collaboration models that have been developed in the climate field. Perhaps the largest collaboration project in modern times between active owners, Climate Action 100+, could be extended, or a similar collaboration could be launched for water.

There are many organisations, initiatives and actors in society that investors can contact if they want to learn more or find collaborations, tools and knowledge partners.



Water has long been overshadowed by the climate issue, which attracts much more attention.

Some examples:

CERES Water Hub, Investor Water Toolkit

www.ceres.org/resources/toolkits/investor-water-toolkit

AWS – Alliance for Water Stewardship

www.a4ws.org

CEO Water Mandate,

www.ceowatermandate.org

Valuing Water Initiative – UN High Level Panel on Water – Leadership Coalition

www.government.nl/topics/water-management/valuing-water-initiative

Global Water Partnership

www.gwp.org

SIWI – Stockholm International Water Institute

www.siwi.org

CDP – Global water report

www.cdp.net/en/water

World Wildlife Fund – Water risk filter

www.waterriskfilter.panda.org

OECD Roundtable on the Financing on Water,

www.oecd.org/water/roundtable-on-financing-water.htm

UN Water

www.unwater.org

Global Water Challenge

www.globalwaterchallenge.org/#our-story

Global Water Leaders

www.globalwaterleaders.org

The World Bank

www.worldbank.org/en/topic/water/overview

World Resources Institute

www.wri.org/about/mission-goals

World Water Council

www.worldwatercouncil.org/en

Areas for further investigation

1. How do we measure the real-world effects of our active ownership?

- Find methods for evaluating investors' active engagement.
- Develop knowledge about barriers to and success factors for active ownership.
- Improve reporting of the effects of active engagement.

2. How do we measure the real-world effects of our investments?

- What effect does investments in solutions to the water problem have on sustainability?

1. How do we measure the effects as active owners?

The study 'Water Management and Stewardship' showed that the dialogue companies improved their reporting on water more than other companies in our portfolio with high water risks. In other words, engagement is effective, but there is still a lack of established methods for assessing real-world outcomes, i.e. the effect of investors on companies' sustainability work.

Investors need to continue to develop knowledge about barriers to and success factors for active ownership, in order to conduct the work more effectively. Under what conditions are different corporate governance methods successful? What synergies are there? Do they conflict with each other? Examples of methods are individual dialogues, dialogue collaborations, participation in nomination procedures, statements at general meetings, shareholder resolutions, voting on resolutions, blacklisting, public benchmarking, and legal processes.

When evaluation methods are developed, investors can also improve reporting regarding corporate governance, which external parties and investor stakeholders are calling for. Currently, reporting is mainly anecdotal (individual success stories) or activity based (implemented measures).

In 2018, AP7, Swesif and Mistra initiated a re-research study that is examining the above points, led by Dr Emma Sjöström at the Stockholm Sustainable Finance Centre. The study is funded by Mistra, and the first results will be presented in 2019.

2. How do we measure the effects of our investments?

It is already possible to invest in solutions to the water problem that generate returns on the market. The question is, what effect do the investments have on real-world sustainability? There are some established measurement methods, such as for development aid projects, but these are lacking for global equity portfolios. Consequently, AP7 together with our 'impact managers' will try to help develop methods for evaluating investments in solutions to the water problem.

Agenda 2030 • Global Sustainability Goal 6

Clean Water and Sanitation



Ensure access to water and sanitation for all.

Water is a basic condition for all life on Earth, and thereby also a condition for sustainable development. A very large number of individuals living in poverty lack access to clean water and basic sanitation. Untreated wastewater from industry and households cause water pollution, and create an unhealthy environment that particularly affects people living in poverty.

Water is also a basic condition for the world's food production and energy production, so shortage of water can be a cause of conflict. Integrated and transparent water management both within and between countries is a condition for long-term sustainable use of water. The effects of climate change are seen early and clearly through changes in water supply. Restoration of the ecosystems' ability to retain water is a necessary adaptation measure.

Lack of a reliable and nearby water source and safe, private toilets have profound effects on life for millions of people around the world. The consequences of this are devastating, and women and girls are hit hardest, with their health, safety, education, ability to earn an income, and family relationships affected. Women and girls are often responsible for the family's water supply, which means that women lose the ability to earn income and girls miss school days. This affects their political, economic, and social opportunities. Access to clean water and toilets in school are crucial to girls remaining in school, particularly during puberty. Many women and girls risk their personal safety when they are forced to look for isolated places where they can defecate or fetch water.



Water is also a basic condition for the world's food production and energy production, so shortage of water can be a cause of conflict.



Targets for SDG6

- 6.1** By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- 6.2** By 2030, ensure that everyone has access to adequate and equitable sanitation and hygiene, and end open defecation. Special attention should be paid to the needs of women and girls and people in vulnerable situations
- 6.3** By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and substantially increasing recycling and safe reuse globally.
- 6.4** By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and a sustainable supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from a lack of water.
- 6.5** By 2030, implement integrated management of water resources at all levels, when possible through transboundary cooperation.
- 6.6** By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.
- 6.A** By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
- 6.B** Support and strengthen the participation of local communities in improving water and sanitation management.



AP7 Theme Report

Water

Report on the Fresh Water Theme 2016–2018

