

CDP Water Program: Turkey Results

2017





Our research shows more large corporations rising to the challenge with the number of A List companies nearly tripling in a year and almost 8% using internal accounting to assess the true value of water to their business. Congratulations to those organizations leading the way.

Seventeen years ago, CDP set out to transform capital markets by making environmental disclosure and risk management a new business norm.

The Paris Agreement, Sustainable Development Goals and evolving market forces, from shareholder and customer requirements to the rapidly improving cost curves of clean technology, are moving us towards a tipping point that will help protect us from climate change, water insecurity and the effects of deforestation. To reach that point we need critical shifts in financial capital and policy, as well as strong leadership, innovation, measurement, transparency and accountability.

Our vision is for a thriving economy that works for people and planet in the long term.

Our mission is to focus investors, companies and cities on taking urgent action to build a truly sustainable economy by measuring, understanding and reducing their environmental impact.

The stakes are high as we assess the progress companies have made to date in supporting the realization of a water-secure world.

A handwritten signature in black ink that reads "P Simpson". The signature is fluid and cursive.

Paul Simpson
CEO, CDP

Ali Fuat Erbil

Board Member, President & CEO, Garanti Bank



As one of the most crucial and limited resources of our planet, we often take water for granted and assume we will always have enough of it. This presumption causes governments and corporations to make poor decisions as they fail to include water risks into their decision-making processes. Each year on we are facing more and more severe and extreme weather events that lead to more challenging and aggressive water-related risks.

According to a recent study by NASA, the continued drought in the eastern Mediterranean including Turkey since 1998 was drier than the worst drought in the past 900 years. Unfortunately, Turkey is one of the countries that will be significantly affected by climate change which we will most likely experience these impacts as water scarcity. Temperatures in Turkey will rise by 5-10% from 2046 to 2065, which will result in a 20-30% decrease in precipitation. Taking into account the unconscious water consumption habits in Turkey, severe drought and water scarcity awaiting us in the near future is inevitable. The drought in 2008 alone caused a US\$2 billion loss in the agricultural sector, making it quite obvious that the consequences of these adverse impacts will be detrimental. Managing water-related risks is also the key to resilient cities and food security.

There has to be a drastic shift from traditional water perception and we have to change our management approach. Companies and governments need to adopt integrated water management practices. Fortunately, the recent developments are promising and encouraging on disclosing water risks and opportunities. Even though the Paris Agreement does not directly address the water crisis, the measures to mitigate climate change impacts will ultimately lead to a decrease in water-related risks. Moreover, the Financial Stability Board's Task Force on Climate-Related Financial Disclosures recommends the inclusion of metrics on climate-related risks associated with water along with the other topics such as energy and land use.

CDP's Water Program plays a crucial role to help companies identify such metrics to monitor their water-related risks, and how to turn them into opportunities. This also provides companies a clear roadmap. We are proud that the number of CDP's Water program respondents in Turkey keeps increasing each year. As of today 23 companies in Turkey transparently disclosed how they are impacted by water-related risks and what kind of actions they are taking to mitigate and adapt. As a company that has greatly benefited from this program, we hope this number to increase exponentially and would like to encourage all companies to respond to CDP's Water Program.

Oliver Jan

EMEA Sustainability Leader, Deloitte



Water is one of the most essential resources for people to sustain their lives. Yet, today one out of three people still lack access to safe drinking water and one out of nine lack basic sanitation. Water is a fundamental and supporting resource for the environment and all the services nature provides. Yet, water is being depleted at an unprecedented rate, with a critical expansion of water scarce areas and a growing concern regarding water quality (micro-pollutants and emerging contaminants notably).

Water is a critical asset for businesses in all sectors, by supporting the manufacture and production of goods (food and beverage, paper and construction, energy, etc.) and the production of services (cultural, recreational, etc.). Therefore, it can create significant losses for all economic operators in case of shortages. Yet, a number of players keep using this resource in a non-sustainable manner, and most of them have not developed an awareness of their vulnerability to potential water scarcity.

The situation we are facing nowadays is going to become even more critical: global water demand (in terms of water withdrawals) is projected to increase by 55% by 2050, and manufacturing sector would require for its part a 400% increase of water resources¹. As a result, more than 40% of the global population is expected to live in areas of severe water stress by 2050, as climate change impacts will only aggravate the situation. We will increasingly experience the already substantial damages related to floods, storms and water-related disasters and many world regions are expected to face water-related socio-economic crisis.

We believe everyone has a responsibility in tackling this shared challenge and we are convinced that all stakeholders have a role to play in the necessary transition towards a more sustainable resource management. In this long-term journey, the short-term economics often play against us because water often remains a minor cost for most businesses and scenarios of water disruption are still rarely acknowledged and monetized². Yet, companies are increasingly aware that water issues do not only put at risk the continuity of their business, but also their brand value and their license to operate. We are glad to see that each and every year, more companies are working hard on measuring and reporting their impact on nature including water; that they are trying to find solutions on how to cope with the

water scarcity problem. Seeing the numbers together is leading the way on how to move forward.

Many companies have already made significant efforts to set targets and improve their water footprint by reducing their water use, reusing wastewater and improving the quality of discharge. It is a necessary and valuable first step. But much more can be done as part of this sustainability journey to have a positive impact that matters locally while creating value for the company, as shown by a number of leading companies. Better water stewardship is for companies an opportunity to innovate, to look beyond their fence and engage with their suppliers, with other companies and external stakeholders.

We as Deloitte not only appreciate CDP's efforts on supporting companies, raising awareness among them and advocating for continuous improvement, but also delighted to work with them on their critical mission.

¹according to UNESCO The United Nations World Water Development Report published in 2014

²Deloitte's Water Tight 2.0 Report

Melsa Ararat

Director, Sabancı University Corporate Governance Forum



When I posed the question “how can Green Finance initiatives address water scarcity?” to the high-level panelists in COP23, I wasn’t expecting an enthusiastic response. Contrary to my expectations, each of the panelists wanted to say something on the topic. The Green Finance Dialogue organized by the Sustainable Stock Exchanges Initiative took place during COP23 and included the CEOs of investment banks, member exchanges and investors. At the end of the panel session I was assured that Water Bonds - or Blue Bonds, and the Blue Economy are rapidly moving upwards in the climate change agenda while Green Bonds and Green Economy are becoming mainstream.

Climate change influences the Earth’s ecosystem primarily through water and water is already a scarce resource. Until recently, the ‘Water Problem’ was largely regarded as a matter of island conservation and ocean economy in the context of climate change. Recently however, it has become common knowledge that rising water levels have implications for the amount, distribution, timing and quality of available water on land. Desertification is already happening in many countries where land turns into dust. Paradoxically, renewable energy strategies also rely partly on hydropower which in turn has a negative effect on water distribution and availability. As rising sea levels drive saltwater into freshwater aquifers, and rising water temperatures lead to more pollution being washed into waterways, more water will need to be treated to be useful for human consumption. An unintended consequence would be the use of energy-intensive processes leading to more emissions. Undoubtedly, future climate-driven changes in water resources will affect many aspects of life on earth.

Company disclosures to the CDP Climate Change questionnaire in Turkey reveal that one of the most important climate change risks in Turkey is water related, including water scarcity and flooding. Turkey has made significant progress towards an ecological and holistic approach in protecting and improving its water during the accession process to the European Union, thanks to its rich experience especially in water supply and sanitation. Contrary to the general perception however, Turkey is not a water rich country - with less than 1/7th of available water per capita in water rich countries.¹ The geographic distribution of available water is, moreover, not aligned with demand

At the same time Turkey relies heavily on hydropower for energy. Worst-case scenario estimates that water availability in Turkey could drop from 112 billion cubic meters in 2015 to around 50 billion cubic meters by 2100. During the same period the cumulative water demand is expected to increase from 43 billion cubic meters to 62 billion cubic meters.² This means that the overall demand is expected to exceed the water available in the not-too-distant future. Water dependent industries will need to drastically improve their water use efficiency and rate of water reuse, in order to decrease their dependency on freshwater.

Given this picture, we are pleased to report that Turkey’s largest companies that are either water dependent or can have an impact on water, are managing water risks well. In 2017, two Turkish companies that responded to the CDP Water questionnaire have been classified among the 73 A Band companies in water management globally, Arçelik and Garanti Bank. Garanti Bank is, furthermore, the only financial institution in the global A List. Additionally, three other Turkish companies achieved a score of A- and came very close to be included in the global leaders list. We are also pleased to report a high percentage of Turkish companies reporting voluntarily through the CDP Water program in 2017.

CDP believes that a water secure world is possible; ‘Water governance must be in the boardroom of every major corporation in the world. In 2017, 520 companies (70%) have board-level oversight of water issues and are reaping the rewards, which include market differentiation, shareholder confidence and business resilience. By providing board members with the information and tools to plan for a transition to a water-secure world and by publicly monitoring their progress, water stewardship can become part of companies’ modus operandi.³

Sustainable development will not be achieved without a water-secure world. We will continue to support and facilitate the collaboration between businesses, investors and policy makers for good water governance.

¹Ministry of Foreign Affairs, “Turkey’s Policy on Water Issues”, available at http://www.mfa.gov.tr/turkey_s-policy-on-water-issues.en.mfa, accessed on November 16, 2017

²Rtiani, P., Temizel, S., Ciliz, N. 2016. “Water Governance Mapping Report: Textile Industry Water Use in Turkey”, available at <http://www.sivi.org/swedish-water-expertise-advances-global-textile-supply-chain-sustainability/>, accessed on November 16, 2017, Stockholm International Water Institute

³CDP Water 2017 Global Report

Company stats at a glance 2017

Current State

In total **23** companies responded to CDP Water Program in Turkey

There are **5** A and A- band respondents

13% of responding companies experienced detrimental water-related business impacts in the reporting year

74% of responding companies evaluated how water risks could impact business growth over the next year or more

83% of responding companies regularly measure and monitor more than 50% of all water aspects

Reported experienced impacts

- ▼ Supply chain disruption
- ▼ Higher operating costs
- ▼ Reduction in revenue
- ▼ Plant/production disruption

Water Risk Assessment

78% of responding companies state that water risks are assessed

9% of responding companies undertake a comprehensive company wide risk assessment that covers both direct operations and supply chain

- ▼ **39%** of responding companies assess risks at river basin scale
- ▼ **70%** of responding companies assess risks related with future potential regulatory changes at a local level into their water risk assessments
- ▼ **70%** of responding companies include local communities into their water risk assessments

Exposure to Water Risk

70% of responding companies report exposure to risk

- ▼ **17%** anticipate risks to materialize in <1 year
- ▼ **39%** anticipate risks to materialize within 1 - 6 years
- ▼ **22%** anticipate risks to materialize within > 6 years

35% of companies are exposed to water related risks in both direct operations and supply chain

Exposed risks reported (see number of companies in brackets)

- 1) Higher operating costs (32)
- 2) Supply chain disruption (29)
- 3) Reduction in revenue (19)
- 4) Plant/production disruption leading to reduced output (13)

Company stats at a glance 2017

Water Related Opportunities

87% of responding companies report opportunities

Top opportunities reported (see number of companies in brackets)

Cost Savings (17)
Improved Water Efficiency (15)
Increased Brand Value (14)
Carbon Management (9)
Climate Change Adaption (7)
Competitive Advantage (7)

Governance & Strategy

74% of responding companies have board level oversight of water policy, strategy or plan

13% of responding companies have publicly available, company wide water policy that includes direct operations, supplier best practice and acknowledges WASH

9% of responding companies align their public policy position with water stewardship

87% of responding companies integrated water into their business strategy

26% of responding companies water CAPEX and OPEX increased year on year in the last reporting period

Supply Chain

22% of responding companies require key suppliers to report water use, risks and management

Water Accounting

87% of responding companies report water withdrawals

87% of responding companies report water discharge

▾ **30%** of responding companies verify (>50%) total volume of water withdrawal data by source for at risk facilities

▾ **17%** of responding companies verify (>50%) water discharge by destination for at risk facilities

Targets and Initiatives

78% of responding companies with targets and goals in place

▾ **83%** of responding companies reporting targets with quantitative actions to manage water resources

▾ **83%** of responding companies reporting qualitative goals leading towards improved water stewardship

Linkages and trade-offs

74% of responding companies identified any linkages or trade-offs between water and other environmental impacts



Key findings

- ▼ **The response rate increased by 21% in 2017 compared to 2016. Non-disclosing companies should take immediate steps towards reporting to CDP's water program to support them start tackling water related challenges.**
- ▼ **Company boards have woken up to water security. Water security now has a firm seat at the table of 74% of the corporate boards.**
- ▼ **Water risks are rapidly materializing for business in Turkey. Disclosing companies reported US \$1.88 billion in water-related impacts in 2017. 70 percent of responding companies report exposure to risk, and 13% of companies have experienced detrimental business impacts from water in the reporting year.**
- ▼ **The proportion of companies measuring and monitoring more than 50% of all water aspects is quite high (84%) which is up from 58% in 2016.**
- ▼ **Overall 78% of responding companies assess their risks that is essential for companies to develop a clear understanding of physical, regulatory and reputational exposures as well as opportunities available.**
- ▼ **This year, companies reported a total of 129 risks and 162 risk drivers via CDP – risks that threaten their license to operate, the security of their supply chains, indeed, their ability to grow.**
- ▼ **Turkish companies' level of engagement with water management and responsiveness to water risks are promising. Overall 87% of responding companies have integrated water use into their business strategy. Moreover, 78% of companies are setting company-wide targets and goals for reducing their impact on water resources.**
- ▼ **39 percent of responding companies assess risk at river basin scale. However, a small proportion (9%) of companies conduct a company-wide risk assessment that covers both direct operations and supply chains. Responding to these risks requires collaborative action and companies should engage with local communities, policy-makers, suppliers, and other stakeholders in their relevant river basin.**
- ▼ **A CDP score is an indicator of a company's commitment to transparency around their environmental risks, and the sufficiency of their response to them. This year, we are delighted to celebrate the companies that have achieved an 'A' rating in Turkey in accordance with CDP's publicly available scoring methodology: Arçelik and Garanti Bank.**

Water program respondents in 2017

CDP Turkey Water Sample

ARÇELİK A.Ş.

BRİSA BRIDGESTONE SABANCI LASTİK SAN. VE TİC. A.Ş

COCA-COLA İÇECEK A.Ş.

ÇİMSA ÇİMENTO SANAYİİ VE TİCARET A.Ş.

DOĞAN ŞİRKETLER GRUBU HOLDİNG A.Ş.

FORD OTOMOTİV SANAYİ A.Ş.

KORDSA GLOBAL ENDÜSTRİYEL İPLİK VE KORD BEZİ SANAYİ VE TİCARET A.Ş.

TOFAŞ TÜRK OTOMOBİL FABRİKASI A.Ş.

TÜMOSAN MOTOR VE TRAKTÖR SANAYİ A.Ş.

VESTEL BEYAZ EŞYA SANAYİ VE TİCARET A.Ş.

ZORLU ENERJİ ELEKTRİK ÜRETİM A.Ş.

Other Responding Companies

AKÇANSA ÇİMENTO SANAYİ VE TİCARET A.Ş.

AKENERJİ ELEKTRİK ÜRETİM A.Ş.

İHLAS EV ALETLERİ İMALAT SANAYİ VE TİCARET A.Ş.

PINAR ENTEGRE ET VE UN SANAYİ A.Ş.

PINAR SÜT MAMULLERİ SANAYİİ A.Ş.

SABANCI HOLDİNG A.Ş.

ŞEKERBANK T.A.Ş.

T.GARANTİ BANKASI A.Ş.

TAV HAVA LİMANLARI HOLDİNG A.Ş.

TÜRKİYE HALK BANKASI A.Ş.

YÜNİSA YÜNLÜ SANAYİ VE TİCARET A.Ş.

ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.



To read 2017 company responses full, please go to
<https://www.cdp.net/en/responses>

To read the CDP Global Water Report please go to:
<https://www.cdp.net/research/global-reports/global-water-report-2017>

DOI: 10.5900/SU_SOM_WP.2017.34145

About this report

CDP's water program motivates companies to disclose and reduce their environmental impacts by using the power of investors and customers. The data CDP collects helps influential decision makers to reduce risk, capitalize on opportunities and drive action towards a more sustainable world.

Each year CDP asks companies to systematically report data relating to their water use, water-related risks and opportunities and their governance of water. By contextualizing and sharing this information with investors, companies, policy makers and other stakeholders, CDP catalyzes action by companies to secure freshwater resources for all.

CDP's water program acts on behalf of 639 institutional investors, representing US\$69 trillion in assets. These investors use CDP water data to engage with portfolio companies, inform investment decisions and catalyze change. In addition, 37 purchasing organizations, with a combined spend of US\$1 trillion, use CDP water data to drive greater insight, accountability and action throughout their global supply chains.

On behalf of investor signatories, in the third year of the CDP Water program in Turkey, we asked 50 companies to provide data about their efforts to manage and govern freshwater resources. We selected these companies from Borsa Istanbul 100 (BIST-100) index companies based on economic and environmental indicators (largest listed companies in high water impact industries).

In total, 23 companies responded to CDP's water program in Turkey up from 19 companies (21% increase) last year. Out of 23 respondents, 12 were self-selected (SSCs) and 11 were included in the Turkey sample that received an official invitation. Therefore, the response rate of the official sample is 22%.

This report is aimed at companies and investors seeking to understand how they can play their part in delivering a water-secure world. It presents summary findings from our analyses of 23 responding company disclosures in response to the CDP Water 2017 Information Request. It sets out the company actions that will contribute to water-secure world and how companies are overcoming the barriers to water security.

State of play

In many parts of the world, climate change threatens the availability of sufficient freshwater resources, and will lead to increases in extreme weather conditions. Therefore, adapting to the effects of climate change on water systems is vital. Integrating water issues into climate policy and adopting an integrated approach to water and climate change issues by private sector are crucial components of corporate water security.

Business-as-usual water management is no longer an option. The next few years are critical to securing long-term global environmental stability for all. Science demands that greenhouse gas emissions must peak around 2020 to avoid catastrophic environmental disruption. Reliable supplies of fresh water underpin all efforts to deliver a more resilient future. Failing to increase water security will likely create systemic risks to the global ecosystem that underpins human prosperity and quality of life.

Measurement, transparency and accountability are the essential tools that enable the global community to track and assess the progress being made toward a below 2-degree Celsius, water-secure world. In Turkey, through CDP's water program, we aim to encourage corporate progress towards a water secure future for all, through measurement and transparency. To that end, we track corporate action across five key areas explained below.

Company responses overview

Key Indicators



Transparency:

Do companies respond to CDP's request for information?



Measuring and monitoring:

Do companies measure and monitor all water aspects²?



Risk assessment and management:

Do companies conduct a comprehensive risk assessment at the river basin level across direct operations and supply chain?



Targets and goals:

Have companies set or achieved targets and goals which reflect a company-wide commitment or strategy?



Engagement and response:

Do companies report risk and an associated response in direct operations and supply chain?
Do companies report opportunities relating to water?

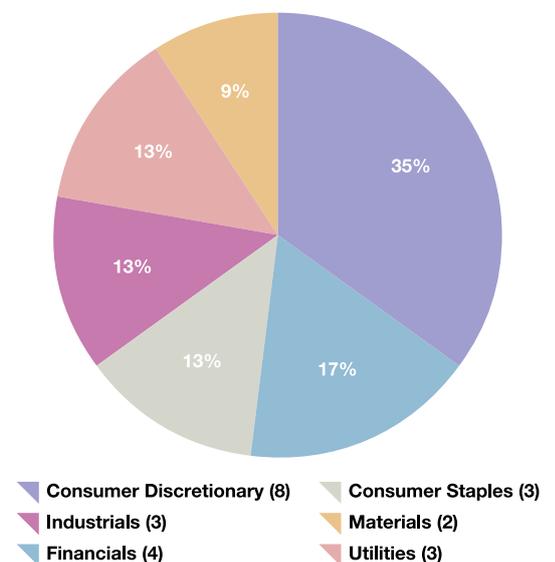
Transparency and Governance

22 percent of invited companies in official Turkey sample provided information to investors; in total, 23 companies responded up from 19 (21% increase) last year.

Although the regulations at the national level are not yet pressurizing or encouraging companies to address water risks, the new climate regime emerging after Paris requires companies to be sufficiently transparent on environmental and water related risks and opportunities relevant for their businesses. Companies should have a water policy and integrate water management into their business strategy.

CDP's water program requests only the companies in sectors where water is a material risk. In 2017, CDP invited 50 of the largest listed companies in Turkey operating in sectors exposed to water risk, namely Consumer Discretionary, Consumer Staples, Energy, Health Care, Industrials, Information Technology, Materials and Utilities. We asked companies to complete the questionnaire included in the 2017 Water Information Request. In total 23 companies did so, 12 of which were self-selected (SSCs) and 11 were included in the original Turkey sample. Therefore, the response rate is **22%**. 17 out of 23 companies (74%) disclosed their responses publicly.

Figure 1: Disclosure rate by sector (see number of companies in brackets)



² Water aspects refers to water withdrawals, discharges, quality, consumption, and WASH (Water, Sanitation and Hygiene)

Measuring & Monitoring

83 percent of responding companies are measuring and monitoring more than 50% of all water aspects.

Water is crucial for companies and it is scarce. That's why it should be measured and monitored closely by the companies which are directly affected by the variances in its supply and quality.

Measuring and monitoring water usage, discharge and consumption are vital first steps in enabling companies to understand the risks they face, and the opportunities available to improve water security and stewardship throughout their operations and supply chains.

To have a good understanding of their water risk, all companies should monitor all water aspects. A significant portion of responding companies (**83%** with a significant increase from 58% in 2016) reporting via CDP now measure and monitor all aspects of water use and discharge. However, only **22%** of responding companies in Turkey require their key suppliers to report water use, risk and management.

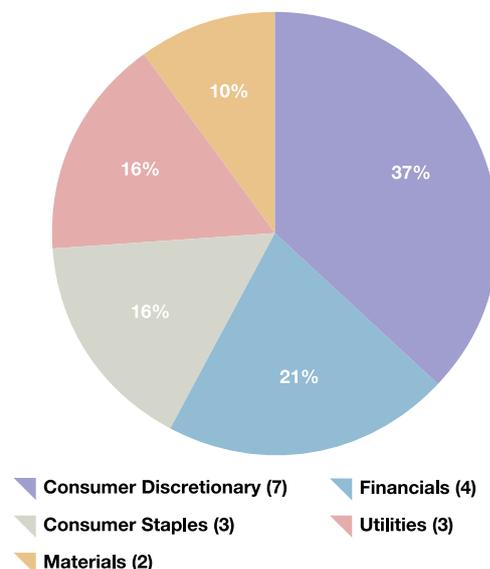
Company example: In 2016, **Çimsa** has started to apply 'ISO 14046 Water Footprint Principles, Requirements and Guidelines' standard and the water footprint monitoring system is improved as a result of ISO 14046 implementation studies. 100 percent of water withdrawal is now measured. Water withdrawals from wells are monitored continuously by the flow meters and recorded to the 'Well Meter Index Reading Form' monthly at each plant. Water withdrawals from municipal water is invoiced based on flow meter readings. 99.2 percent of total consumed water is supplied from ground water wells which is also monitored by flow meters, rest of it supplied from municipal water that is invoiced based on flow meter readings. 64 percent of total domestic

wastewater is treated by the biological wastewater treatment method and 36% of total wastewater are connected to the municipal wastewater treatment facility through the sewerage system.

As per accounting of water use, **87%** (78% in 2016) of respondents gave account of their water withdrawals and water discharges via CDP.

While **30%** of responding companies have measured that their water consumption is lower than the previous year, **26%** of the companies report an increase. In terms of water withdrawals, **70%** of responding companies report a decrease, while **35%** measured an increase compared to previous year.

Figure 2: Companies that regularly measure and monitor more than 50% of all aspects of water use and discharge (in total 19 companies)



Risk Assessment and Management

US\$1.88 billion of water related financial impacts reported in Turkey.

In 2017, responding companies in Turkey reported water-related financial impacts of more than **US\$1.88 billion** (US\$1.7 billion in 2016). The impacts resulted from increased energy or water consumption costs due to water stress, interruptions to production, or the need for increased investment to ensure water availability or comply with regulations.

Responding companies which experienced negative impacts, cope with the problems by developing

emergency plans, making infrastructure investments and by engaging more with the suppliers or diversification of suppliers.

Companies should undertake water risk assessment that account for the regional context in both direct operations and supply chains. In 2017, **35%** (26% in 2016) of companies are exposed to water related risks in both direct operations and supply chain which is even higher than the global results (20%). By improving their understanding of the way in which water is managed around them, companies are better prepared to respond proactively to challenges.

Company example: Akenerji invested approximately US \$900 million to establish their Natural Gas Combined Cycle Power Plant with a desalination system that makes the use of seawater possible for the plant. The investment helps prevent detrimental effects of the floods in the future. Akenerji includes water inherent risks in its risk assessment and strategy development processes to minimize or cope with those risks. Akenerji develops flood emergency plans, assesses precipitation regimes; engages and strengthens links with community; engages with public policy makers and local authorities; invests on preventive infrastructural and capacity building activities. In 2016, Akenerji spend 1.1 million TL on community investment.

There are also financial risks that companies face from water issues. **13 percent** of companies disclosed detrimental impacts related to water over the reporting period.

The most frequently cited impacts were:

- Higher operating costs (32)
- Supply chain disruption (29)
- Reduction in revenue (19)
- Plant/production disruption leading to reduced output (13)

A comprehensive risk assessment is essential for companies to develop a clear understanding of

physical, regulatory and reputational exposures as well as opportunities available. **78 percent** (63% in 2016) of responding companies state that water risks are assessed. However, water-exposed companies should conduct risk assessments that are company-wide and comprehensive, including their direct operations and their supply chains. Only **9%** of disclosing companies meet this higher standard – up from 5% in 2016.

Company example: At Arçelik, their Risk Management System is an integrated multidisciplinary process. Strategic, operational, physical, financial, reputational and environmental risks and opportunities are covered in Arçelik’s Risk Management System, to the fulfillment of the short and long-term goals. Arçelik monitors all of its facilities’ water consumption independently of its location, specify water performance indicators applicable to all of plants and define water targets for long term. As a result of monitoring, Arçelik’s Sustainability Council evaluates corporate risks and opportunities related to water and identify targets for the plants. The water used in Arçelik’s main operations is more critical than the suppliers’. That’s why Arçelik’s water risk management system covers only companies’ direct operations.

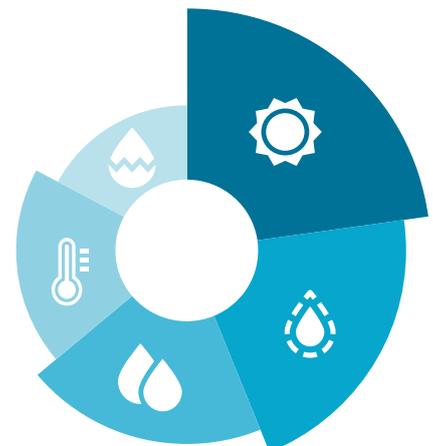
Water is a local issue and each river basin faces distinct challenges as a function of the different water users operating there. Assessment at the basin

Figure 3: Top 5 water risks (Number of risks - in total 129)



- Higher operating costs (32)
- Supply chain disruption (29)
- Reduction in revenue (19)
- Plant/ Production disruption leading to reduced output(13)
- Constrain to growth, higher operational cost (8)

Figure 4: Top 5 water risk drivers (Number of risks – in total 162)



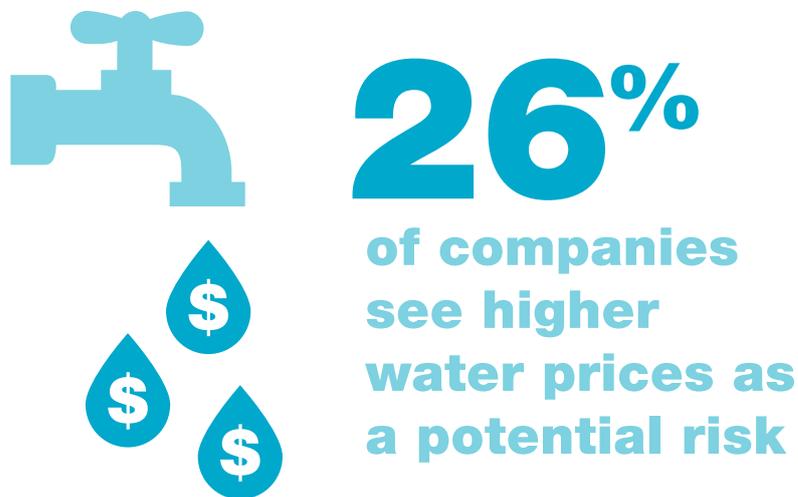
- Drought (23)
- Increased water scarcity (19)
- Flooding (13)
- Climate change (12)
- Higher water prices (11)

level poses challenges for companies, given that it requires an understanding of the activities and needs of local communities and other local water users. 39 percent of companies in Turkey conduct risk assessment which took place at the river basin level – up from 21% in 2016 - and 70% of responding companies factor local communities into their water risk assessments.

This year, companies reported a total of 129 risks and 162 risk drivers via CDP in Turkey – risks that

threaten their license to operate, the security of their supply chains, indeed, their ability to grow.

In most parts of the world, water is cheap, with users often paying below-cost rates for their water supply. Only **26%** (globally 16%) of responding companies in Turkey cite higher water prices as a potential risk, either in their direct operations or along their supply chain.



Targets & Goals

78 percent of respondents have set both targets and goals to better manage water resources.

Setting ambitious targets and goals is the first step toward reducing water impact. The ambition and scope of targets and goals can increase as the company matures in its approach to water. An increase in this scope shows the commitment of companies in Turkey on managing and sustaining water security.

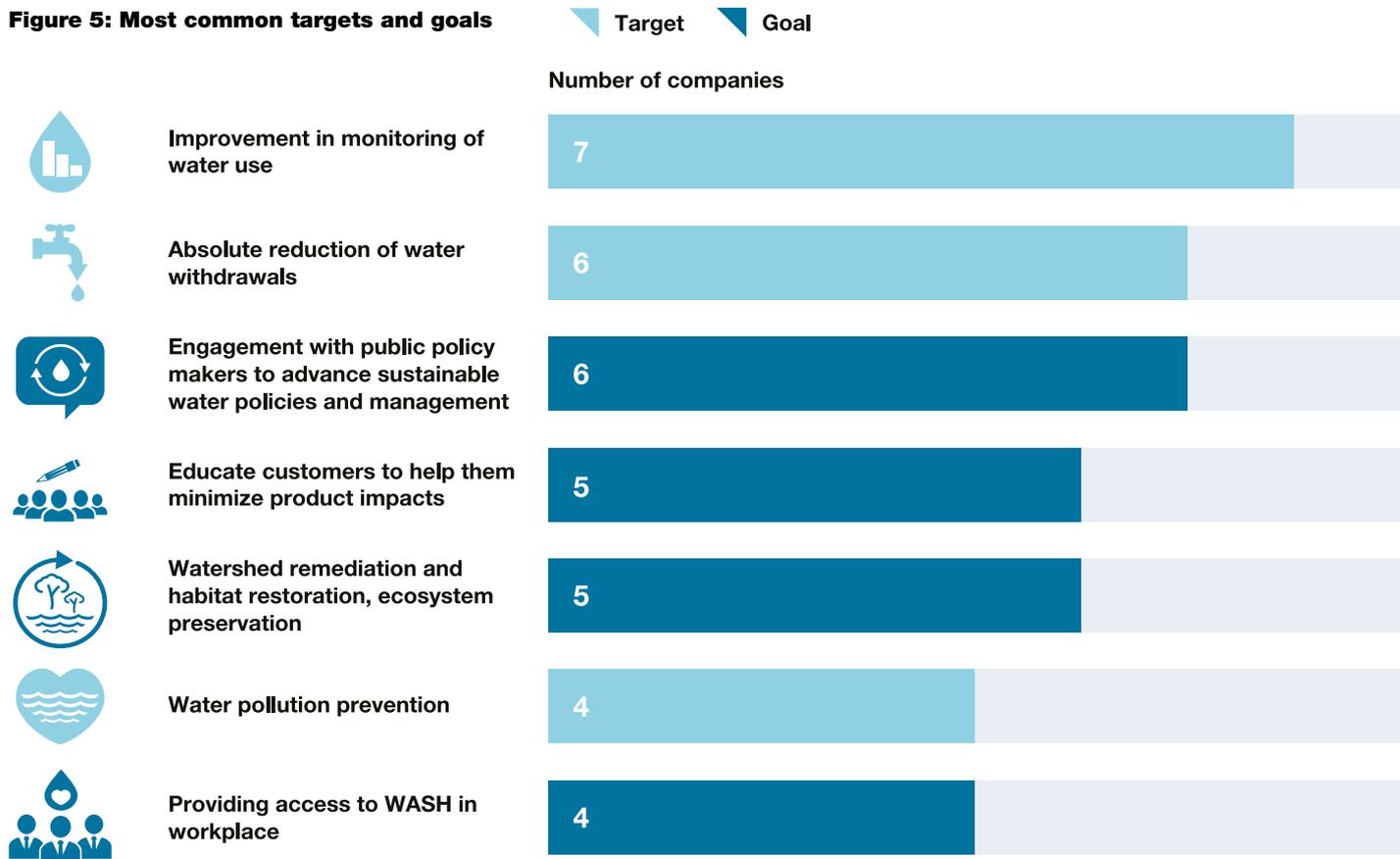
Since water security for all requires collective action and coordination at the local level, meaningful targets should be linked to where each company's direct operations and supply chains are located.

CDP defines a 'target' as a specific measurable output within a clear timeline, while a 'goal' aims to achieve a longer-term qualitative outcome or a specific change in behavior or circumstances. Targets are quantifiable objectives to manage water resources, and goals are qualitative aims leading towards improved water stewardship. In 2017, **78%** (globally 56%) of responding companies have set both targets and goals related to water in Turkey which represents a significant increase from 47% in 2016. The percentage of respondents reporting

targets with quantitative actions to manage water resources is **83%**.

Company example: Brisa's target is to reduce absolute water withdrawals from groundwater in Izmit Production Facility by 61% until 2020 against a baseline year of 2008 fiscal year. Brisa implement and contribute to Bridgestone's global goals. One of these particular goals is to operate 'in harmony with nature.' Brisa focused on biodiversity and track their performance as part of Bridgestone's Biodiversity Working Group which has identified 'water' as a priority concept. As part of their efforts to reduce water consumption and improve the quality of discharged water, Brisa closely follow the established KPIs set in terms of the facility specific reduction target and promote contribution for local community.

Figure 5: Most common targets and goals



Engagement & Response

87 percent of respondents have integrated water use into their business strategy.

Water governance must be in the boardroom of every major corporation. By providing board members with the information and tools to plan for a transition to a water-secure world and by publicly monitoring their progress, water stewardship can become part of companies' business strategy.

In 2017, **74%** of responding companies have board level oversight of water policy, strategy and plan and **87%** of responding companies have integrated water issues into their business strategy. A good growth experienced in both of the indicators compared to the last year's figures respectively 63% and 79% in 2016.

Company example: Garanti Bank's Sustainability Committee represents all major lines of business throughout its organization. The Sustainability Committee, established in 2010 is the highest committee that formally reviews and approves the Bank's activities related to sustainability which operates directly under Business of Directors and

is chaired by a Board member. The CEO is also a member of the Committee. The Committee deliberately structured to integrate sustainability concerns and opportunities into all operations, products and services. The Committee meets regularly in order to monitor the progress on and to provide input to all sustainability efforts. Its role is to agree on strategic direction and action plans for the Bank.

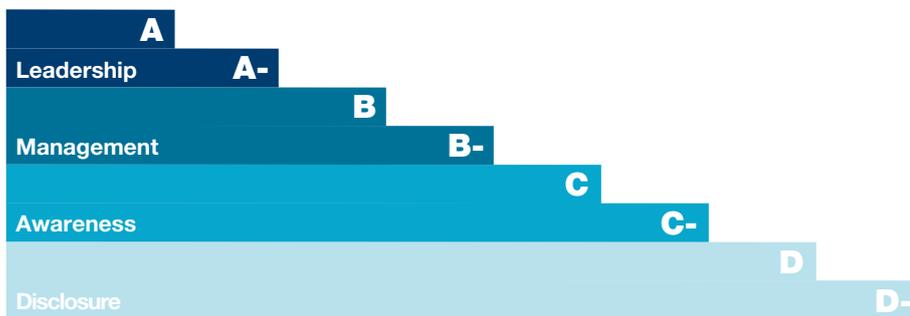
Meanwhile, there is considerable room for improvement in having publicly available company-wide water policies that include direct operations as well as supplier best practice and acknowledge human right to water, sanitation and hygiene (WASH). Only **13%** (globally 63%) of respondents this year had such policies in place. Respondents that report public policy engagement for water stewardship are also very few (**9%**).

Collective action is required to protect watersheds. In this regard, **39%** of responding companies undertake water risk assessment at the river basin scale – up from 21% in 2016.

Scoring: a measure of a company's environmental performance

Scoring at CDP is mission-driven, focusing on CDP's principles and values for a sustainable economy and as such scores are a tool to communicate the progress companies have made in addressing environmental issues, and highlighting where risks may be unmanaged. CDP has developed an intuitive approach to presenting scores that highlight a company's progress towards leadership using a 4 step approach: **Disclosure** which measures the completeness of the company's

response; **Awareness** which intends to measure the extent to which the company has assessed environmental issues, risks and impacts in relation to its business; **Management** which is a measure of the extent to which the company has implemented actions, policies and strategies to address environmental issues; and **Leadership** which looks for particular steps a company has taken which represent best practice in the field of environmental management.



Leadership	80-100%	A
	0-79%	A-
Management	45-79%	B
	0-44%	B-
Awareness	45-79%	C
	0-44%	C-
Disclosure	45-79%	D
	0-44%	D-

F = Failure to provide sufficient information to CDP to be evaluated for this purpose¹

¹ Not all companies requested to respond to CDP do so. Companies who are requested to disclose their data and fail to do so, or fail to provide sufficient information to CDP to be evaluated will receive an F. An F does not indicate a failure in environmental stewardship.

² CDP's methodology aims to incentivize continuous improvements as reflected by the state of the market and the improvement of scientific knowledge around the environmental issues it evaluates. The methodology thus evolves over time and the weight of some questions might change or some previously unscored questions might start being scored. As part of these improvements for 2017 scoring, CDP has modified the thresholds from last year.

The scoring methodology clearly outlines how many points are allocated for each question and at the end of scoring, the number of points a company has been awarded per level is divided by the maximum number that could have been awarded. The fraction is then converted to a percentage by multiplying by 100. A minimum score of 80%², and/or the presence of a minimum number of indicators on one level will be required in order to be assessed on the next level. If the minimum score threshold is not achieved, the company will not be scored on the next level.

The final letter grade is awarded based on the score obtained in the highest achieved level. For example, Company XYZ achieved 88% in Disclosure level, 82% in Awareness and 65% in Management will receive a B. If a company obtains less than 44% in its highest achieved level (with the exception of Leadership), its letter score will have a minus. For example, Company 123 achieved 81% in Disclosure level and 42% in Awareness level resulting in a C-. However, a company must achieve over 80% in Leadership to be eligible for an A and thus be part of the A List. Furthermore, in order for a company to be eligible for inclusion in the A List it must not have reported any significant exclusions in emissions and have at least 70% of its scope 1 and scope 2 emissions verified by a third party verifier using one of the accepted verification standards as outlined in the scoring methodology.

Public scores are available in CDP reports, through Bloomberg terminals, Google Finance and Deutsche Boerse's website. CDP operates a strict conflict of interest policy with regards to scoring and this can be viewed at <https://www.cdp.net/scoring-conflict-of-interest>

Future of Scoring

As part of its 'Reimagining Disclosure' initiative, CDP developed a series of sector-specific questionnaires integrating the recommendations by the Financial Stability Board's Task Force on Climate-related Financial Disclosure (TCFD) and stakeholder feedback collected via two rounds of consultations. Each sector questionnaire will have a corresponding sector-specific scoring methodology which will be released in the first quarter of 2018.

2017 water leaders in Turkey

Global A List Companies

ARÇELİK A.Ş.	Consumer Discretionary	A
T.GARANTİ BANKASI A.Ş.	Financials	A

CDP Turkey Leaders

AKENERJİ ELEKTRİK ÜRETİM A.Ş.	Utilities	A-
ARÇELİK A.Ş.	Consumer Discretionary	A
BRİSA BRIDGESTONE SABANCI LASTİK SAN.VE TİC.A.Ş	Consumer Discretionary	A-
PINAR SÜT MAMULLERİ SANAYİİ A.Ş.	Consumer Staples	A-
T.GARANTİ BANKASI A.Ş.	Financials	A



"Sustainability is the core component of our strategy and business model, nurtured with the awareness of our responsibility to the planet and our stakeholders. We're proud to be recognized for combatting the global issue of climate change. We believe that the leading companies of the future will be those embracing green technology, investing in energy and water efficiency and creating circular economy solutions. We will continue to seek new opportunities, increase collaborations, and further develop our investments and innovations for our planet, while transforming more households."

Hakan Bulgurlu, CEO, Arçelik



"Managing water-related risks is one of the key elements of sustainable development as it is crucial for so many SDGs such as resilient cities, food security, and clean water. As a member of the financial sector we are fully aware of our critical role in achieving these goals due to our unique position enabling us to influence all sectors."

Ali Fuat Erbil, CEO, Garanti Bank



CDP Turkey Water Program Response Status Table

Company	Sector	2017 Score	2017 Response Status	2016 Response Status	2017 Permission Status	Water Withdrawal	Water Discharge	Water Consumption
CDP TURKEY WATER SAMPLE								
AFYON ÇİMENTO SANAYİ T.A.Ş.	Materials	F	DP	X				
AKSA AKRİLİK KİMYA SANAYİİ A.Ş.	Consumer Discretionary	F	DP	DP				
AKSA ENERJİ ÜRETİM A.Ş.	Utilities	F	NR	NR				
ALARKO HOLDİNG A.Ş.	Industrials	F	NR	X				
ANADOLU CAM SANAYİ A.Ş.	Materials	F	NR	X				
ANADOLU EFES BİRACILIK VE MALT SANAYİİ A.Ş.	Consumer Staples	F	NR	NR				
ARÇELİK A.Ş.	Consumer Discretionary	A	AQ	NR	Public	D	D	D
ASELSAN ELEKTRONİK SANAYİ VE TİCARET A.Ş.	Industrials	F	DP	NR				
AYGAZ A.Ş.	Utilities	F	NR	NR				
BİM BİRLEŞİK MAĞAZALAR A.Ş.	Consumer Staples	F	DP	NR				
BORUSAN MANNESMANN BORU SANAYİ VE TİCARET A.Ş.	Materials	F	DP	NR				
BRİSA BRIDGESTONE SABANCI LASTİK SAN. VE TİC. A.Ş.	Consumer Discretionary	A-	AQ	AQ	Public	D	D	D
CARREFOURSA CARREFOUR SABANCI TİCARET MERKEZİ A.Ş.	Consumer Staples	F	DP	NR				
ÇİMSA ÇİMENTO SANAYİİ VE TİCARET A.Ş.	Materials	B	AQ	AQ	Public	D	D	D
COCA-COLA İÇECEK A.Ş.	Consumer Staples	B	AQ	AQ	Public	D	D	D
DO & CO AG	Consumer Staples	F	NR	X				
DOĞAN ŞİRKETLER GRUBU HOLDİNG A.Ş.	Industrials	D	AQ	AQ	Public			
DOĞUŞ OTOMOTİV SERVİS VE TİCARET A.Ş.	Consumer Discretionary	F	DP	NR				
EİS ECZACIBAŞI İLAÇ, SİNAİ VE FİN. YAT. SAN. VE TİC. A.Ş.	Health Care	F	NR	NR				
ENKA İNŞAAT VE SANAYİ A.Ş.	Industrials	F	NR	NR				
EREĞLİ DEMİR VE ÇELİK FABRİKALARI T.A.Ş.	Materials	F	NR	DP				
FORD OTOMOTİV SANAYİ A.Ş.	Consumer Discretionary	B	AQ	AQ	Public	D	D	D
GOODYEAR LASTİKLERİ T.A.Ş.	Consumer Discretionary	F	NR	NR				
GÜBRE FABRİKALARI T.A.Ş.	Materials	F	NR	NR				
KARDEMİR KARABÜK DEMİR ÇELİK SANAYİ VE TİCARET A.Ş.	Materials	F	DP	DP				
KOÇ HOLDİNG A.Ş.	Industrials	F	NR	NR				
KONYA ÇİMENTO SANAYİİ A.Ş.	Materials	F	NR	NR				
KORDSA GLOBAL END. İPLİK VE KORD BEZİ SAN. VE TİC. A.Ş.	Consumer Discretionary	C	AQ	AQ	Public	D	D	D
KOZA ALTIN İŞLETMELERİ A.Ş.	Materials	F	NR	NR				
KOZA ANADOLU METAL MADENCİLİK İŞLETMELERİ A.Ş.	Materials	F	NR	X				
MİGROS TİCARET A.Ş.	Consumer Staples	F	DP	NR				
NET HOLDİNG A.Ş.	Consumer Discretionary	F	NR	X				
OTOKAR OTOMOTİV VE SAVUNMA SANAYİ A.Ş.	Industrials	F	DP	DP				
PETKİM PETROKİMYA HOLDİNG A.Ş.	Materials	F	NR	NR				

Company	Sector	2017 Score	2017 Response Status	2016 Response Status	2017 Permission Status	Water Withdrawal	Water Discharge	Water Consumption
CDP TURKEY WATER SAMPLE								
POLİSAN HOLDİNG A.Ş.	Materials	F	NR	X				
SODA SANAYİ A.Ş.	Materials	F	NR	DP				
T.ŞİŞE VE CAM FABRİKALARI A.Ş.	Industrials	F	DP	DP				
TEKFEN HOLDİNG A.Ş.	Industrials	F	NR	NR				
TESCO KİPA A.Ş.	Consumer Staples	F	NR	NR				
TOFAŞ TÜRK OTOMOBİL FABRİKASI A.Ş.	Consumer Discretionary	B	AQ	AQ	Public	D	D	D
TRAKYA CAM SANAYİİ A.Ş.	Industrials	F	NR	NR				
TÜMOSAN MOTOR VE TRAKTÖR SANAYİ A.Ş.	Industrials	D	AQ	AQ	Private			
TÜPRAŞ-TÜRKİYE PETROL RAFİNERİLERİ A.Ş.	Energy	F	NR	NR				
TÜRK TRAKTÖR VE ZİRAAT MAKİNELERİ A.Ş.	Industrials	F	NR	NR				
TÜRK TUBORG BİRA VE MALT SANAYİİ A.Ş.	Consumer Staples	F	NR	DP				
ÜLKER BİSKÜVİ SANAYİ A.Ş.	Consumer Staples	F	NR	NR				
VESTEL BEYAZ EŞYA SANAYİ VE TİCARET A.Ş.	Consumer Discretionary	B	AQ	AQ	Public	D	D	D
VESTEL ELEKTRONİK SANAYİ VE TİCARET A.Ş.	Consumer Discretionary	F	NR	AQ				
YAZICILAR HOLDİNG A.Ş.	Industrials	F	NR	NR				
ZORLU ENERJİ ELEKTRİK ÜRETİM A.Ş.	Utilities	B	AQ	NR	Public	D	D	D
OTHER RESPONDING COMPANIES								
AKÇANSA ÇİMENTO SANAYİ VE TİCARET A.Ş.	Materials	B	AQ	AQ	Public	D	D	D
AKENERJİ ELEKTRİK ÜRETİM A.Ş.	Utilities	A-	AQ	AQ	Public	D	D	D
İHLAS EV ALETLERİ İMALAT SANAYİ VE TİCARET A.Ş.	Consumer Discretionary	D	AQ	AQ	Private			
PINAR ENTEGRE ET VE UN SANAYİİ A.Ş.	Consumer Staples	B	AQ	X	Private	D	D	D
PINAR SÜT MAMULLERİ SANAYİİ A.Ş.	Consumer Staples	A-	AQ	AQ	Private	D	D	D
SABANCI HOLDİNG A.Ş.	Financials	B	AQ	X	Private	D	D	D
ŞEKERBANK T.A.Ş.	Financials	B	AQ	AQ	Public	D	D	D
▼ T.GARANTİ BANKASI A.Ş.	Financials	A	AQ	AQ	Public	D	D	D
TAV HAVA LİMANLARI HOLDİNG A.Ş.	Industrials	C	AQ	AQ	Public	D	D	D
TÜRKİYE HALK BANKASI A.Ş.	Financials	C	AQ	AQ	Public	D	D	D
YÜNİSA YÜNLÜ SANAYİ VE TİCARET A.Ş.	Consumer Discretionary	B	AQ	AQ	Public	D	D	D
ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.	Utilities	B	AQ	X	Private	D	D	D

KEY TO RESPONSE STATUS TABLE

AQ: Answered Questionnaire

NR: No Response

D: Disclosed

▼ CDP Global A List Company

DP: Declined to Participate

F: Failure to Disclose

X: Company was not included in any CDP samples in that year

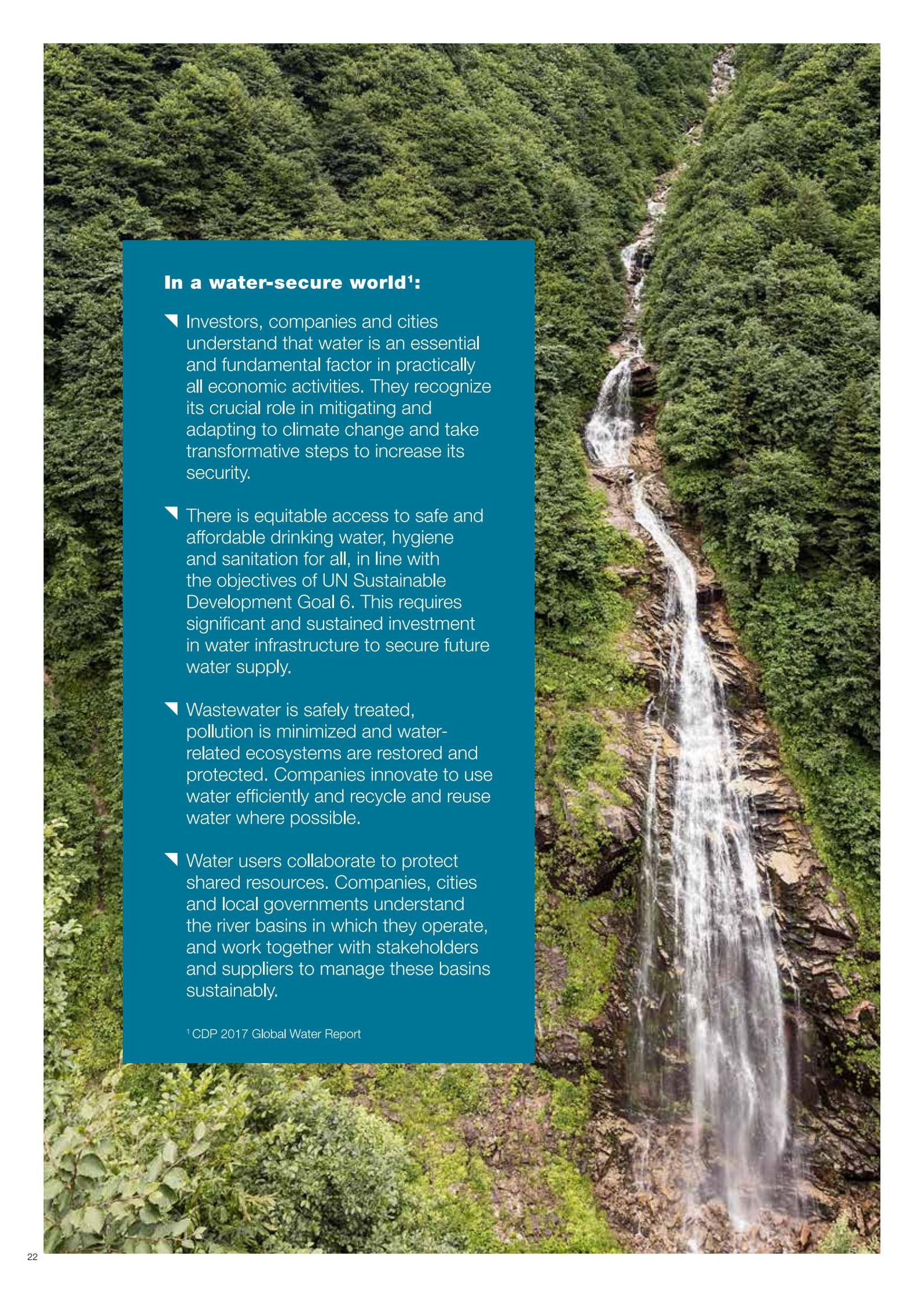
SA: Company is either subsidiary or has merged during the reporting process. See Company brackets for further information on company status.

The Global Water A List

This year, CDP is delighted to celebrate the companies that have achieved an 'A' rating in accordance with our publicly available scoring methodology. The Water A list has tripled from just eight companies in the first year of scoring, 2015, to 73 companies in 2017. A CDP score is an indicator of a company's commitment to transparency around their environmental risks, and the sufficiency of their response to them. This year, two companies from Turkey achieved an 'A' rating: **Arçelik** and **Garanti Bank**.

Company	Country
Consumer Discretionary	
ARÇELİK A.Ş.	Turkey
BMW AG	Germany
Bridgestone Corporation	Japan
Burberry Group	United Kingdom
Caesars Entertainment	USA
Fiat Chrysler Automobiles NV	Italy
Ford Motor Company	USA
General Motors Company	USA
Nissan Motor Co., Ltd.	Japan
Sony Corporation	Japan
Toyota Motor Corporation	Japan
Volkswagen AG	Germany
Woolworths Holdings Ltd	South Africa
Consumer Staples	
Altria Group, Inc.	USA
Anheuser Busch InBev	Belgium
Associated British Foods	United Kingdom
Coca	Switzerland
Cola	United Kingdom
Colgate Palmolive Company	USA
Conagra Brands Inc	USA
Danone	France
Diageo Plc	United Kingdom
Kellogg Company	USA
Kirin Holdings Co Ltd	Japan
L'Oréal	France
Philip Morris International	USA
SCA	Sweden
Suntory Beverage & Food	Japan
Tongaat Hulett Ltd	South Africa
Unilever plc	United Kingdom
Energy	
Galp Energia SGPS SA	Portugal
PTT Exploration & Production Public Company Limited	Thailand
Financials	
T.GARANTİ BANKASI A.Ş.	Turkey
Health Care	
AstraZeneca	United Kingdom
Bayer AG	Germany
Biogen Inc.	USA

Company	Country
Essilor International	France
GlaxoSmithKline	United Kingdom
Mediclinic International	South Africa
Novartis	Switzerland
Roche Holding AG	Switzerland
SANOFI	France
Industrials	
CNH Industrial NV	United Kingdom
Komatsu Ltd.	Japan
Kubota Corporation	Japan
Mitsubishi Electric Corporation	Japan
Obrascon Huarte Lain (OHL)	Spain
Owens Corning	USA
Information Technology	
FujiFilm Holdings Corporation	Japan
Fujitsu Ltd.	Japan
HP Inc	USA
Intel Corporation	USA
LG Innotek	South Korea
STMicroelectronics Nv	Switzerland
Materials	
African Rainbow Minerals	South Africa
BASF SE	Germany
Braskem S/A	Brazil
Ecolab Inc.	USA
FIRMENICH SA	Switzerland
Harmony Gold Mining Co Ltd	South Africa
Koninklijke DSM	Netherlands
Kumba Iron Ore	South Africa
Metsä Board	Finland
Mitsubishi Chemical Holdings Corporation	Japan
Mondi PLC	United Kingdom
OMNIA HOLDINGS LTD	South Africa
Royal Bafokeng Platinum Ltd	South Africa
Symrise AG	Germany
UPM Kymmene Corporation	Finland
Utilities	
ACCIONA S.A.	Spain
Centrica	United Kingdom
Endesa	Spain
NRG Energy Inc	USA



In a water-secure world¹:

- ▼ Investors, companies and cities understand that water is an essential and fundamental factor in practically all economic activities. They recognize its crucial role in mitigating and adapting to climate change and take transformative steps to increase its security.
- ▼ There is equitable access to safe and affordable drinking water, hygiene and sanitation for all, in line with the objectives of UN Sustainable Development Goal 6. This requires significant and sustained investment in water infrastructure to secure future water supply.
- ▼ Wastewater is safely treated, pollution is minimized and water-related ecosystems are restored and protected. Companies innovate to use water efficiently and recycle and reuse water where possible.
- ▼ Water users collaborate to protect shared resources. Companies, cities and local governments understand the river basins in which they operate, and work together with stakeholders and suppliers to manage these basins sustainably.

¹ CDP 2017 Global Water Report

CDP's Partner in Turkey

Sabancı University Corporate Governance Forum



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