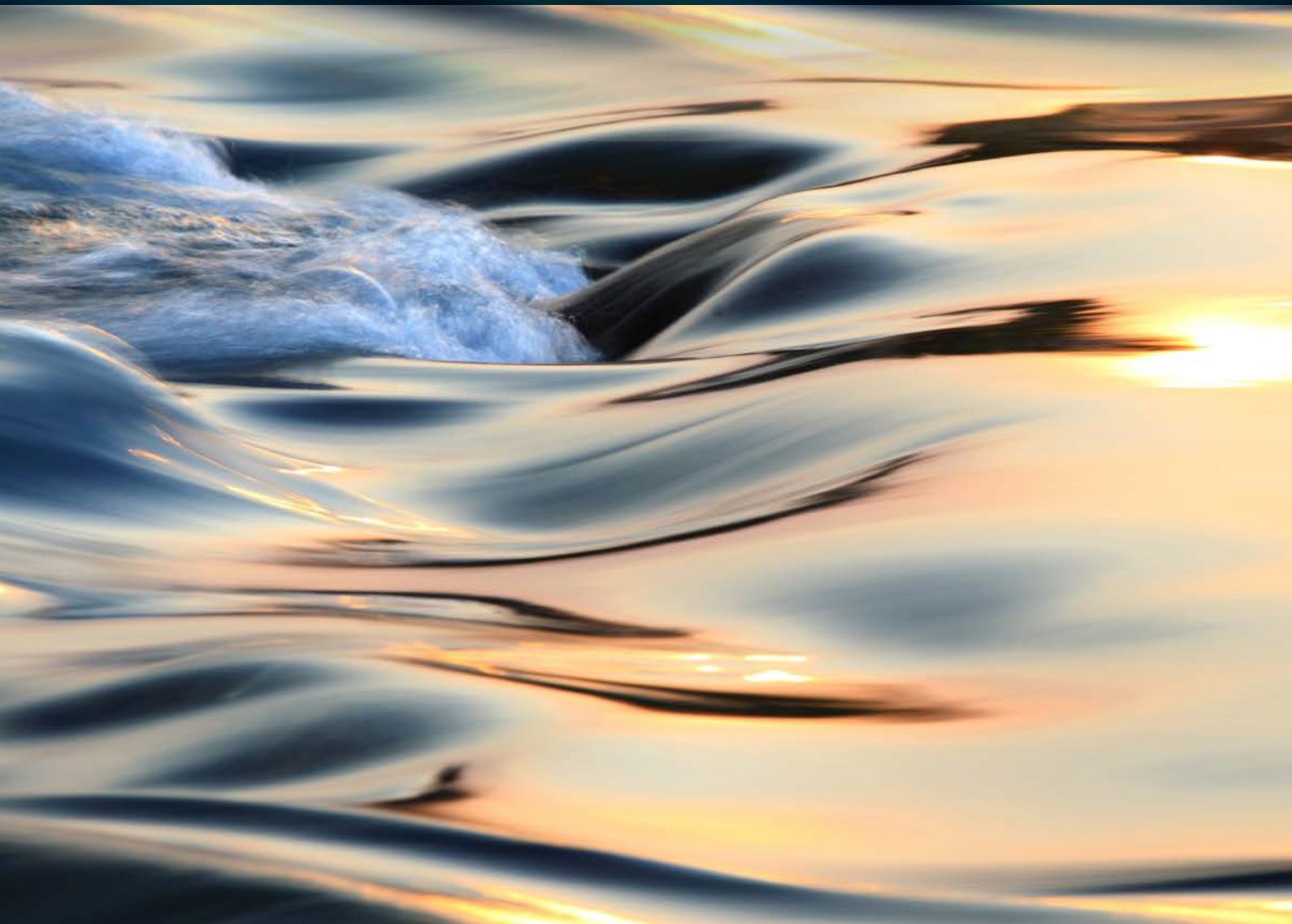


# Riding the Wave

How the private sector is seizing opportunities to accelerate progress on water security

March 2023



# Norges Bank Investment Management Commentary



**Carine Smith Ihenacho**  
Chief Governance and  
Compliance Officer,  
Norges Bank Investment  
Management

**2022 was the  
'year of drought'  
with far-reaching  
impacts across  
society and  
industry. The need  
for transformative  
solutions is clear.**

**Norges Bank Investment Management manages the assets of the Norwegian Government Pension Fund Global, currently amounting to around US\$1.3 trillion. We work to safeguard and build financial wealth for future generations.**

Responsible investment is a key priority for the fund as it supports the long-term economic performance of our investments. Water scarcity and pollution can pose business risks, and the way water is managed by companies can influence their profits. But it can also affect the profits of other companies we invest in that are dependent on the same sources of water.

We regularly assess how companies manage their water-related risks and opportunities, and use this information to inform our company engagement, voting, risk management and investment decisions. We base these assessments on public disclosures, in many cases directly on responses to CDP's water security questionnaire – the most comprehensive repository of consistent and comparable corporate water data we know.

2023 is a watershed year. We're halfway through the Water Action Decade and the UN Water Conference is taking place in March for the first time since 1977. Meanwhile, the impacts of climate change continue to push us into uncharted territory: 2022 was the 'year of drought' with far-reaching impacts across society and industry. The need for transformative solutions is clear.

CDP illustrates in this report the large financial opportunities that exist for companies that integrate water into their business strategies. We are encouraged to see that this is no longer just a question of risk, but of real value ready to be captured by companies in our portfolio.

We are proud to have been the Lead Sponsor of CDP Water since 2009 and congratulate the team on the 3,909 responders in 2022.

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To read the 2022 company responses in full, please go to <https://www.cdp.net/en/responses>

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## Key findings



### Global brands report water-related opportunities worth US\$436 billion

**2,718 water-related opportunities were disclosed with a combined financial value of US\$436 billion.** The ripple effect of water action means that acting on these opportunities is good for business, and good for the planet.



### 4x more opportunities for those firms integrating water into business strategy

**Disclosing companies that integrate water into long-term business and financial planning realize four times more opportunities** - an important first step for the 55% of companies yet to identify water-related opportunities.



### From permeable concrete to washing-up liquid

**Companies across the sector spectrum are transitioning away from polluting and water-intensive products,** responding to new water realities, regulatory pressure and changing consumer behavior – and reaping the rewards.



### 85% increase in disclosure over the last five years

**Disclosures of private sector water data have grown exponentially in the last decade,** as pressure on freshwater rises, and momentum to mandate water reporting builds.

# 2023: Time to turn the tide

## 2022 was a year of firsts for water.

Some of these firsts were alarming: the freshwater planetary boundary was breached; Europe confronted its worst drought in 500 years and 'forever chemicals' were discovered in rainwater.

Yet other firsts give reason for optimism: the Network for Greening the Financial System (NGFS) accelerated efforts to mainstream nature throughout the financial system; COP27 was the first COP to include water on its official agenda and the UN endorsed the universal human right to a clean, healthy and sustainable environment.

March 2023 brings another water first: the first time in 46 years that Heads of State will discuss international water policy. The [UN Water Conference](#) marks the midway point of the Water Action Decade: a decade dedicated to driving efforts to achieve international commitments on water. This is a time to take stock of the progress already achieved, to spur and inspire action for the next five years.

The window to act is closing fast, and there is still much to do. Across the globe, risks associated with water scarcity and pollution persistently make headlines. Yet governments' ability to handle them is not improving at pace. Policymakers are relying on short-term, emergency measures, and not advancing the systemic change we need<sup>5</sup>.

**Water security will not be achieved without strong private sector leadership.** Corporate action is critical to slowing the depletion of water resources. Corporate investment plays a pivotal role in achieving water security for all. The corporate voice can boost political will and mobilize government action.

During this watershed year, the time has never been better to showcase non-state action on water and call for a bold, ambitious and urgent policy response.

Presenting new analysis from the 3,909 companies that reported water-related data to their investors and customers through CDP in 2022, this report highlights the private sector's crucial role in building the water-secure future we all need. It aims to inspire action amongst companies across all industries and geographies by highlighting water-related opportunities, innovative business solutions and enablers that have the potential to catalyze transformation. It aims to demonstrate to Heads of State attending the UN Water Conference that there has never been a better time to solve the water crisis.

## The state of water in 2023



### 46 years

since Heads of State last discussed international water policy at the summit level



### 107 countries

remain off track to hit the goal of sustainably managing their water resources by 2030. Acceleration is most urgently needed in South and Central America, the Caribbean, Oceania, South Asia, Central Asia, Central Africa and West Africa<sup>1</sup>



### <15%

of countries have the financial or human resources needed to implement water, sanitation, and hygiene plans<sup>2</sup>



### 1/3

of the world's people, mainly in least developed countries and small island developing states, are not covered by water-related early warning systems<sup>3</sup>



### 84%

of countries with transboundary waters are lacking transboundary basin cooperation agreements<sup>4</sup>

<sup>1</sup> [https://library.wmo.int/index.php?lvl=notice\\_display&id=21963#.ZAG\\_wXbP23A](https://library.wmo.int/index.php?lvl=notice_display&id=21963#.ZAG_wXbP23A)

<sup>2</sup> <https://www.who.int/news/item/28-08-2019-weak-systems-and-funding-gaps-jeopardize-drinking-water-and-sanitation-in-the-world%E2%80%99s-poorest-countries>

<sup>3</sup> <https://public.wmo.int/en/media/press-release/%E2%80%8Bearly-warning-systems-must-protect-everyone-within-five-years>

<sup>4</sup> <https://www.unwater.org/water-facts/transboundary-waters>

<sup>5</sup> <https://www.eurasiagroup.net/live-post/top-risks-2023-10-water-stress>

# Normalizing Transparency

## The role of disclosure in enabling action

**Evidence built over the last decade suggests that private sector disclosure of comparable and consistent water information is the foundation for transformative action to stem both the water and climate crises.**

Such information helps stakeholders including investors, banks, buyers, policymakers, civil society, and consumers make smarter decisions and increase their expectations of companies with respect to their performance. This propels the private sector to act – to reduce water dependence, mitigate risks and seize opportunities. Governments can use these signals as a strong vote of confidence to advance ambitious policies on water that will help unlock further investments in water solutions.

Operating as the world's only global water disclosure mechanism, CDP has worked on behalf of investors and buyers to facilitate the collection and distribution of corporate water data for over 10 years. In 2010, we engaged 156 investors. Now, 680 investors (worth more than US\$130 trillion in assets), banks, and insurance firms as well as 63 buyers are active data partners.

The number of disclosing companies has grown accordingly. We've witnessed an 85% growth in corporate water disclosure through CDP in the last five years, with a 16% increase in 2022 alone. Last year, 8,477 companies were requested to disclose water data by their investors or their business customers. 3,909 companies disclosed, up from 3,369 in 2021.

The growth in responses has been particularly strong in Asia, where interest in mandating water-related disclosure is growing. The manufacturing industry also experienced significant growth in responses – up 23% between 2021 and 2022 – thanks particularly to an increase in respondents from the electrical and electronic equipment sector. However, a 10% drop in the number of food and beverage companies responding was concerning, considering the high dependency this sector has on water.

### CDP's 2022 water disclosure in numbers



## 8,477

of the world's most impactful companies were requested to disclose water data by their investors or their business customers



## 3,909

companies disclosed water-related data through CDP, a 16% increase from 2021



## 104

countries are seeing companies take ambitious water action motivated by CDP, from El Salvador, to Samoa, the Netherlands to Nicaragua



## 4,568

companies including Apple Inc., Tesla, Inc. and Shell refused to respond to their requests to disclose water-related data. With environmental disclosure becoming the norm, companies which fail to respond will increasingly become outliers.

## Mandating water disclosure

In 2021, countries and jurisdictions including Japan, China, Switzerland, India and Brazil, moved towards mandatory climate disclosure for corporations and financial institutions. This trend accelerated in 2022 with some jurisdictions taking important steps to expand beyond climate to consult on proposals for mandatory water disclosure.

Despite this, just two G20 members, the EU and the UK, are in the process of mandating comprehensive water disclosure. The majority of G20 members are missing an important opportunity to provide solutions

that will enable companies and financial institutions to account for and address the risks posed by water insecurity as well as the impacts they have on freshwater resources.

In 2023, Heads of State from every country will consider the role of water disclosure as part of the UN Water Conference. CDP's corporate water dataset provides evidence that the voluntary corporate disclosure of such data is becoming the norm, so making disclosure mandatory across the globe would not pose a significant burden for companies already disclosing<sup>6</sup>.



## Europe's new ESG disclosure requirements

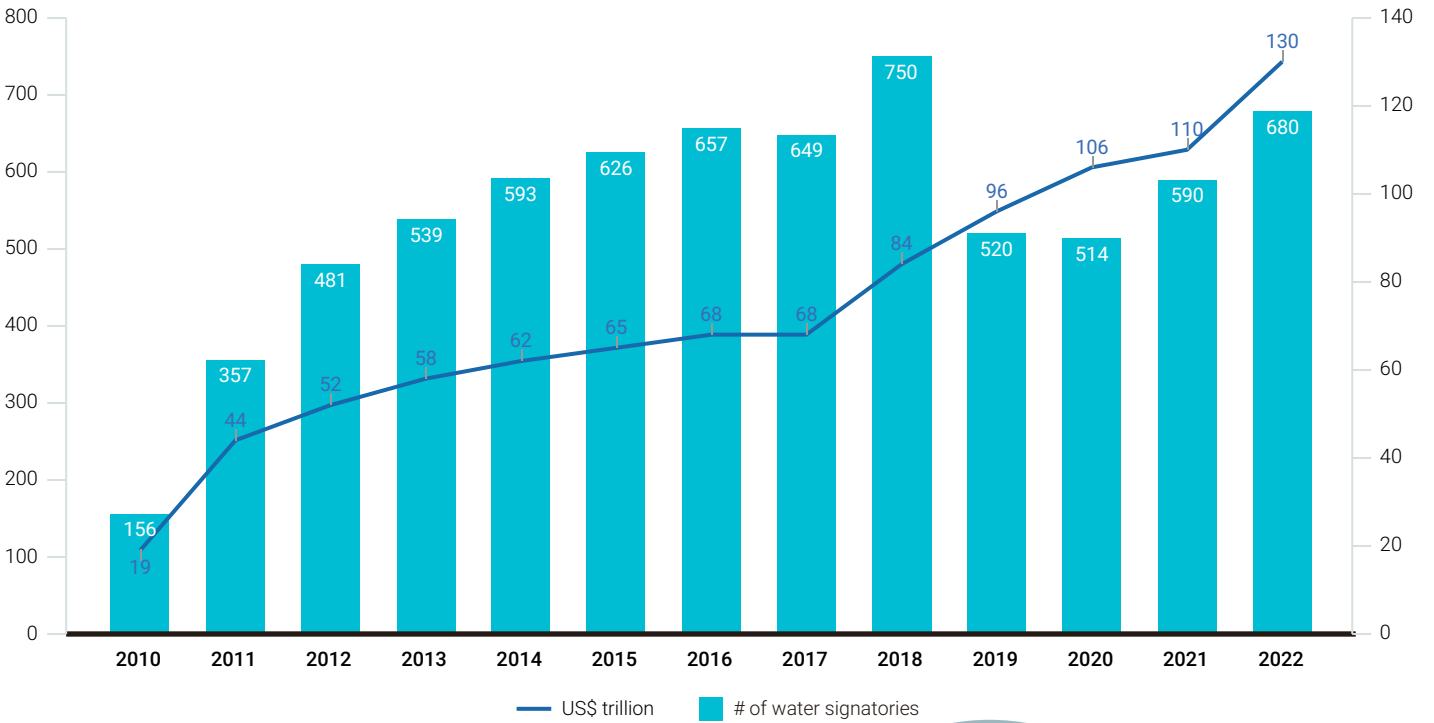
From 1 January 2024, it is anticipated that large and listed companies will be required to report on the EU's first set of ESG reporting standards. The European Sustainability Reporting Standards (ESRS) list water and marine resources as a key topic, alongside climate change, pollution, biodiversity and ecosystems, resource use and circular economy. This strengthening of EU disclosure rules will bring more accountability and a better understanding of risks and opportunities. They will enable the tracking of progress against EU and global goals and will raise the bar on what is expected from companies.

CDP has worked to create and improve the EU's sustainability disclosure regime since the early stages through involvement in EU technical advisory groups, the secretariate overseeing the development of standards, and regular consultations.

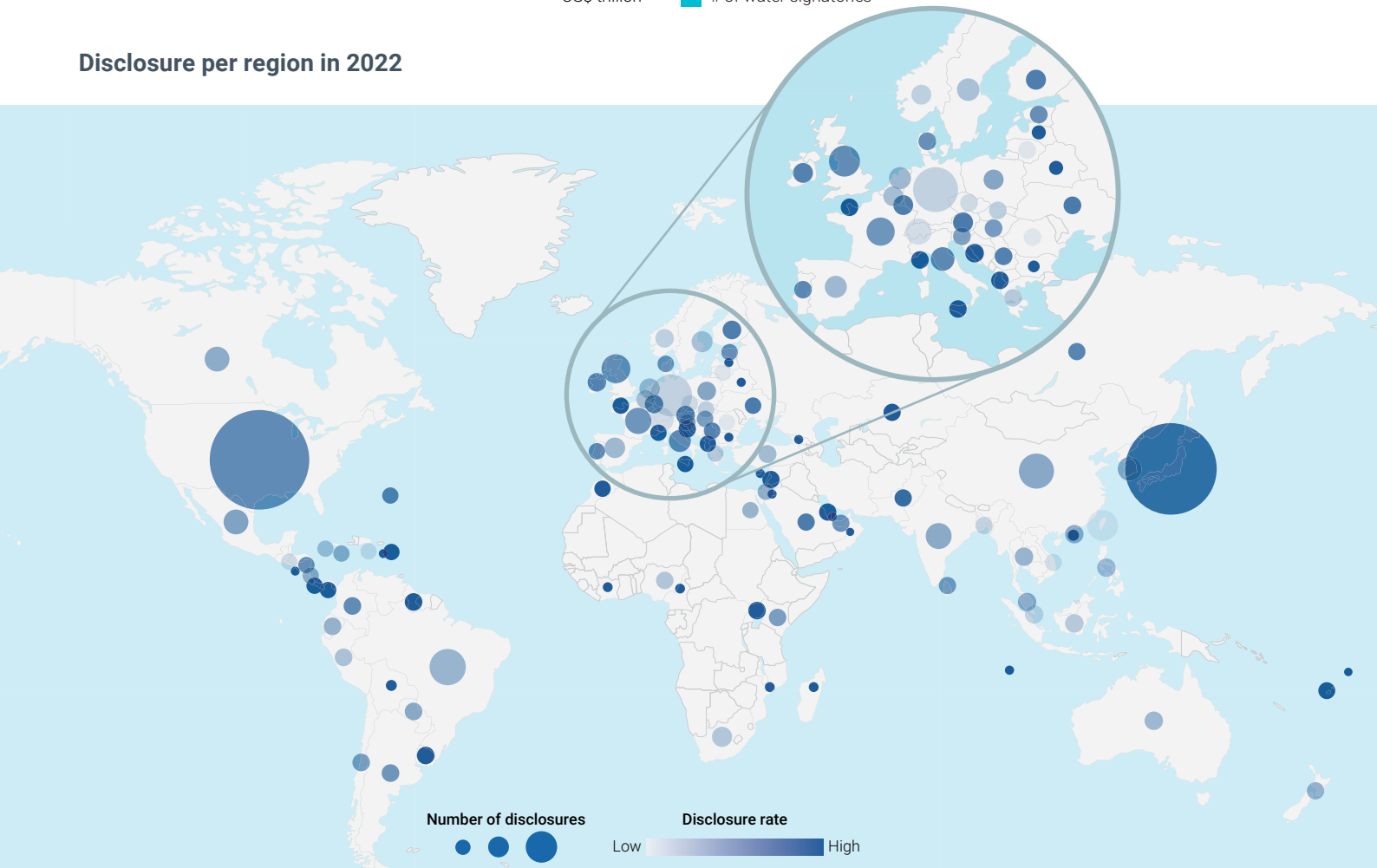
Of equal, if not perhaps greater importance, is the introduction of mandatory water reporting for financial institutions. The European Sustainable Finance Disclosure Regulation (SFDR) aims to improve transparency in the market for sustainable investment portfolios. Whilst missing indicators associated with water withdrawals and consumption, the SFDR represents a vital opportunity to trigger a cascade of pollution-related action right across the real economy and is one CDP is proud to support.

<sup>6</sup> [https://cdn.cdp.net/cdp-production/cms/policy\\_briefings/documents/000/006/409/original/Setting\\_the\\_high\\_water\\_mark\\_for\\_mandatory\\_disclosure.pdf?1660576398](https://cdn.cdp.net/cdp-production/cms/policy_briefings/documents/000/006/409/original/Setting_the_high_water_mark_for_mandatory_disclosure.pdf?1660576398)

### CDP investor signatories to water request<sup>7</sup>



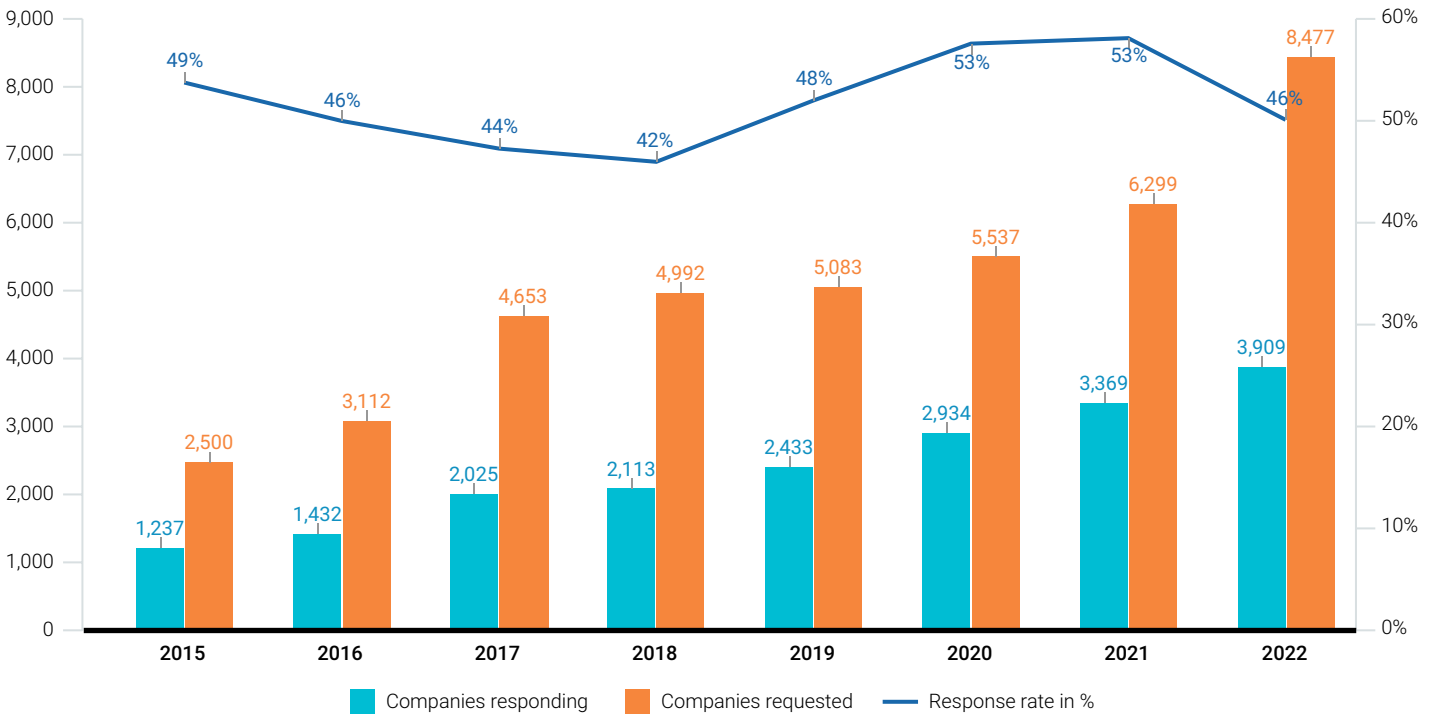
### Disclosure per region in 2022



<sup>7</sup> CDP introduced a fee for investor signatories in 2019, which led to the drop of many small and/or unengaged signatories. Importantly, despite the drop in numbers, assets under management, and therefore influence, remained high.

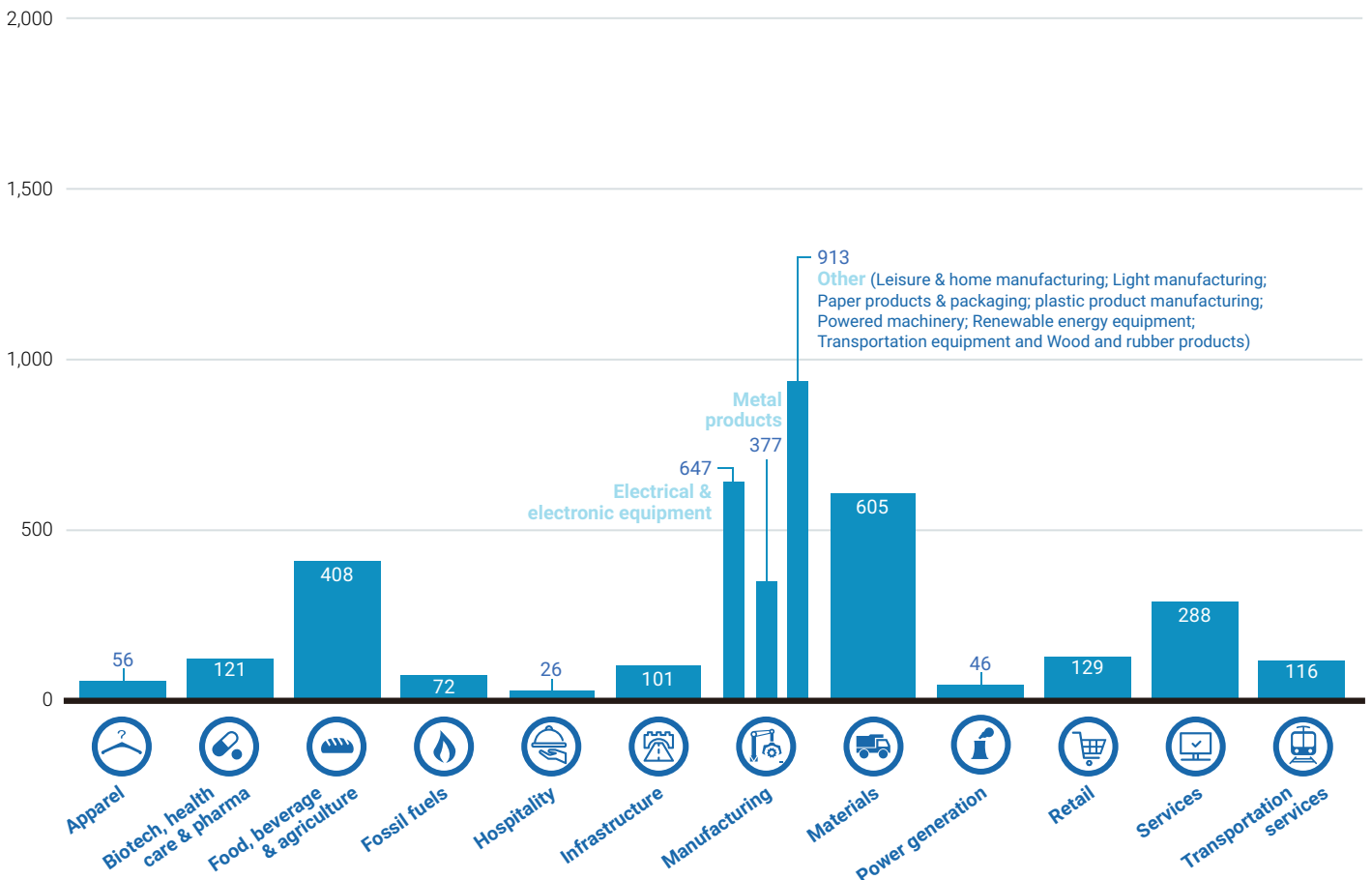


### Disclosure response rate 2015-2022



### Disclosure breakdown by industry (2022)

#### Companies responding





# Tapping the Market

## Water-related opportunities for corporate investment

**In 2020, adidas successfully placed its first sustainability bond of €500 million. Eligible projects including investments into sustainable materials and processes bring adidas an opportunity to position itself as leader in innovation and help prepare adidas to face the future challenges and risks in a more informed and resilient way.**





adidas AG

**Tackling the global water crisis, adapting to doing more with less and needing to radically reduce, if not eliminate pollution, is a significant opportunity for a large proportion of respondents.**

Acting on water can help a company tap into new markets, boost production capacity, build resilience, and gain competitive advantage or access to credit. Opportunities can be the basis for transformation – the creation of new business models, products and services of future commercial value.

The financial benefits of seizing water-related opportunities are clear:

- Unilever’s brand of dishwashing liquid (‘Sunlight’) that uses much less water than its other brands, has outpaced category growth by more than 20% in a number of water-scarce markets<sup>8</sup>.
- Diageo, Gap Inc., HSBC, Twinings and ekaterra, during WaterAid’s ‘Boosting business<sup>9</sup>’ research project, experienced short-term returns on investment (ROI) of up to US\$2 for every US\$1 spent ensuring workers’ access to safe drinking water, sanitation, and hygiene (and in some cases much higher long-term ROI projections). Reduced absenteeism, increased productivity, and a decrease in WASH-related medical costs were some of the business benefits.
- For Arçelik A.Ş. (the Turkish multinational household appliances manufacturer), water-efficient production has increased the company’s performance on sustainability indices valued by investors, while for adidas and AB InBev this has helped gain access to credit through sustainability-linked bonds or loans<sup>10-11</sup>.

Addressing the water crisis can create opportunities for businesses to thrive		
	<b>Efficiency</b>	Significant cost reductions and increased production capacity, resulting in increased revenues.
	<b>Markets</b>	Accessing new and emerging water-related markets and diversifying revenue streams by tapping new opportunities in these markets.
	<b>Products and services</b>	Gaining a competitive advantage and capitalize on shifting consumer and producer preferences.
	<b>Resilience</b>	Taking measures to ensure supply chains are reliable and can keep functioning under various conditions created by water risks. Investing in resilience allows companies to operate and thrive in the face of climate-related impacts.

8 <https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Strategy%20and%20Corporate%20Finance/Our%20Insights/Five%20ways%20that%20ESG%20creates%20value/Five-ways-that-ESG-creates-value.ashx>

9 <https://washmatters.wateraid.org/boosting-business-why-investing-water-sanitation-hygiene-pays-off>

10 [https://www.adidas-group.com/media/filer\\_public/51/ef/51ef3e50-f488-4e6b-9ee6-79c877de5a67/adidas\\_sustainability\\_bond\\_framework.pdf](https://www.adidas-group.com/media/filer_public/51/ef/51ef3e50-f488-4e6b-9ee6-79c877de5a67/adidas_sustainability_bond_framework.pdf)

11 [https://www.ab-inbev.com/content/dam/abinbev/news-media/press-releases/2021/02/ABI%20Sustainability-Linked%20Loan%20Announcement\\_EN\\_vfinal.pdf](https://www.ab-inbev.com/content/dam/abinbev/news-media/press-releases/2021/02/ABI%20Sustainability-Linked%20Loan%20Announcement_EN_vfinal.pdf)



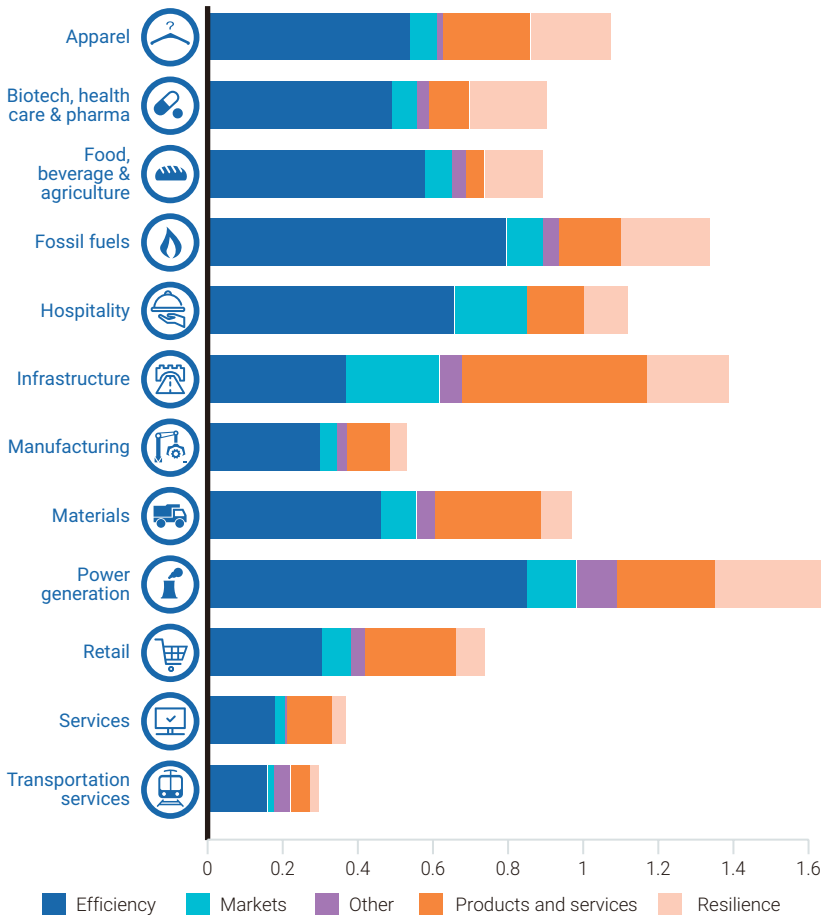
Water-related opportunities could be up to

**US\$436 Billion**

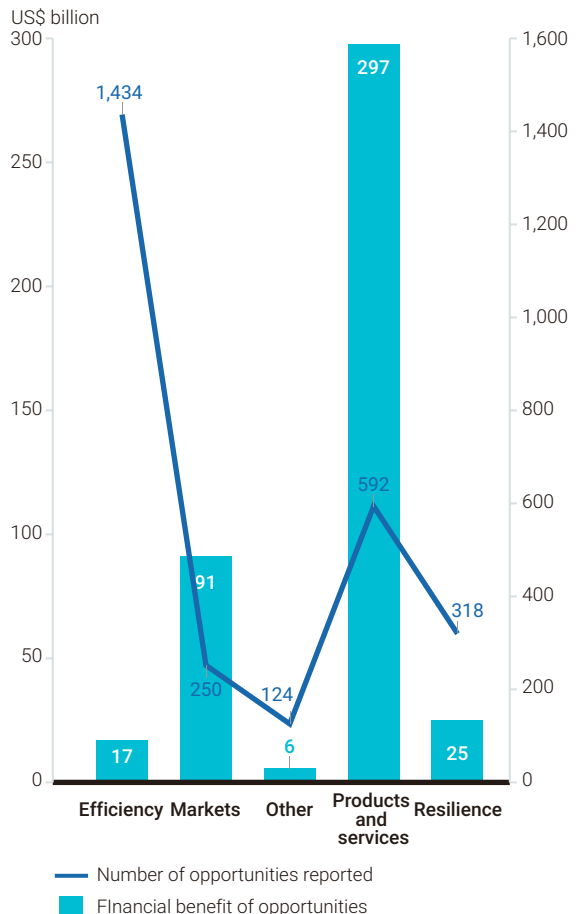
In 2022, CDP respondents including H&M, Proctor & Gamble and Microsoft, reported a suite of opportunities being realized that could make them a combined US\$436 billion, with an average of over US\$250 million per company. 45% (1,729) of respondents reported 2,718 water-related opportunities that could have a substantive financial or strategic impact on their business. A third of these are currently being acted on, 40% will be realized in the next one to three years, and a quarter will take more than three years to accomplish.

Across every industry, companies report water-related opportunities linked to efficiency, markets, products and services and resilience. Perhaps unsurprisingly, industries with the most impact on water, and for whom water is most material to business, report realizing the highest number of water-related opportunities. The power generation industry reports the highest number of opportunities on average, with many respondents realizing opportunities related to water’s role in renewable energy production – from investing in more water-efficient cooling towers for geothermal energy production, to reserving rainwater in the rainy season for improved operational resilience in the face of drought.

**Average number of reported opportunities per organization by sector**



**Potential financial benefit and frequency per type of opportunity**





In 2022,

# 16%

of applicable companies reported that they set an internal price for water which more accurately reflects the costs of the organization's water provision.

Opportunities related to water efficiency are the most commonly reported to CDP across almost every industry. This indicates that an enormous potential exists across all industries to reduce water withdrawals and consumption, and the associated environmental and social impacts by improving efficiency. Though significant, the financial impact of efficiency-related opportunities is the smallest of the four opportunity categories, totaling under US\$17 billion. It is well known that the price paid for water does not yet reflect the true cost of extraction, transportation, use and pollution<sup>12</sup>. Water is often undervalued by regulatory authorities whose tariff setting and water allocation mechanisms do not incentivize efficient use or reflect existing scarcity. This in turn is reflected in the boardroom, where an assumption too often exists that there will always be sufficient freshwater to meet business needs.

Some companies, however, are realizing the value of water to their business and bucking this trend. In 2022, 16% of responding companies reported that they set an internal price for water which more accurately reflects the costs of the organization's water provision.

**Companies with an internal price on water report the financial benefit of efficiency-related opportunities to be**

**6x higher**

than those reported by companies without one.



Bold water policies, regulations and clear guidance on water pricing from governments would provide companies with the incentives and confidence needed to further benefit from efficiency opportunities.

By far the biggest opportunity category by financial impact is products and services, totaling almost US\$300 billion. The services and manufacturing industries stand to gain the most here, realizing significant opportunities to design new and improved products and services to enable other actors to reduce their water impact.

<sup>12</sup> <https://www.cdp.net/en/articles/water/internal-water-pricing-is-changing-how-companies-do-business>



In 2022,

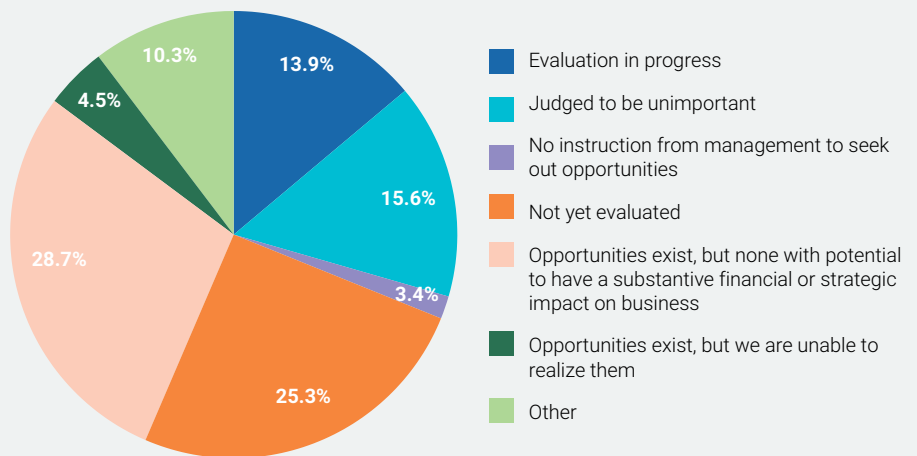
**55%**

of respondents did not disclose a single water-related opportunity, despite relevance to every sector.

## Neglecting water – missed opportunities

Year-on-year, the urgency to tackle the water crisis builds, but so does the momentum to act. Companies not recognizing and realizing the opportunities this brings will be left behind, as competitors reap the rewards of a water-tight business model. In 2022, 55% of respondents did not disclose a single water-related opportunity, despite relevance to every sector. For these companies, the identification of such opportunities should become a strategic priority. Those which put water at the heart of business decisions stand a better chance: CDP analysis has shown that **organizations that integrate water into long-term business strategy realize four times more water-related opportunities**. Again, national governments play a key role in accelerating opportunity identification – by strengthening the regulatory environment for companies to act on water.

### Reasons why respondents do not consider themselves to have water-related opportunities



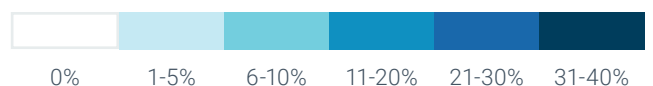
**Types of opportunity – potential financial benefit and frequency per sector\***

Type of opportunity	Apparel	Biotech, health care & pharma	Food, beverage & agriculture	Fossil fuels	Hospitality	Infrastructure	Manufacturing	Materials	Power generation	Retail	Services	Transportation services
Increased sales of existing products/ services		\$157 mn				\$12,288 mn	\$76,726 mn	\$13,787 mn		\$400 mn	\$140,310 mn	\$9 mn
Increased brand value			\$513 mn			\$61,767 mn						
Sale of new products/ services		\$106 mn		\$386 mn			\$13,254 mn	\$8,600 mn		\$4,591 mn		\$1,840 mn
Increased resilience to impacts of climate change		\$155 mn				\$4,767 mn			\$3,050 mn		\$2,104 mn	
Expansion into new markets									\$1,112 mn			
New R&D opportunities											\$5,000 mn	
Reduced impact of product use on water resources					\$4 mn							
Improved water efficiency in operations			\$1,446 mn	\$6,624 mn	\$63 mn			\$2,766 mn		\$172 mn		\$0.35 mn
Stronger competitive advantage	\$120 mn					\$4,686 mn						
Strengthened social license to operate			\$4,430 mn									
Cost savings					\$30 mn				\$376 mn			
Improved community relations												
Increased supply chain resilience	\$33 mn		\$762 mn									
Resilience to future regulatory changes												
Improved customer satisfaction	\$277 mn											
Improved shareholder value												
Water recovery from sewage management												
Improved staff retention												

\*Potential financial benefit: the top three potential financial impacts per opportunity type are shown per sector in US\$.

Frequency: for each opportunity type, the shading indicates the number reported as a percentage of all opportunities reported for that sector

NB: the primary opportunity by financial benefit for the power generation sector is not listed in this table, as 'Other, please specify' responses have not been included

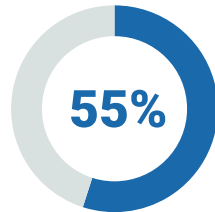


## Sector insights



### Apparel

Potential benefit  
**US\$467.6 m**



of respondents in this sector identifying opportunities

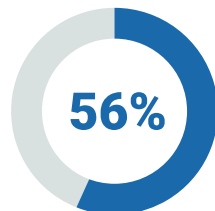
Burberry Group; Kering; Levi Strauss & Co.

This industry is amongst the largest water consumers and polluters, so it is encouraging to see some respondents seizing opportunities to increase operational water efficiency and reduce pollution. These opportunities result in increased brand value, competitive advantage, improved customer satisfaction and enhanced climate resilience across agricultural supply chains<sup>13</sup>. That said, 45% of respondents in the sector did not report opportunities, suggesting that value may be being left on the table.



### Food, beverage & agriculture

Potential benefit  
**US\$8.4 b**



of respondents in this sector identifying opportunities

Danone; Diageo; Nestlé

Considering the huge impact this industry has on water resources, accounting for between 75–80% of water use worldwide, it is encouraging to see improving water efficiency in operations, related cost savings and increasing resilience to climate change feature strongly in terms of frequency and cumulative financial impact. Interestingly, this sector also has the highest proportion of respondents reporting opportunities associated with enhancing WASH initiatives in the communities where they operate.



**We recognize that the long-term success of our business depends on investing in the environmental sustainability of our operations. Water efficiency is a strategic opportunity because of changing consumer behavior.**

Burberry Group



**Danone supports access to safe drinking water in partnership with local communities and NGOs. This brings positive differentiation, strengthens credibility and reputation and may drive consumer preferences towards our brands.**

Danone



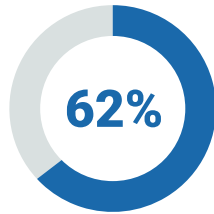
<sup>13</sup> <https://www.wtwco.com/en-GB/Insights/2022/10/commodities-and-supply-chain-risk-from-farm-to-factory>





## Hospitality

Potential benefit  
**US\$101.7 m**



of respondents in this sector identifying opportunities

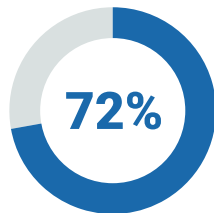
Caesar’s Entertainment; Chipotle Mexican Grill; International Hotels Group

Water utility bills contribute significantly to operational costs for this sector which includes bars, hotel, restaurants, and entertainment facilities. Unsurprisingly, most respondents identified reducing costs through improved water efficiency as an opportunity. For businesses operating in water-scarce regions, improving water efficiency is necessary to maintain customer expectations and benefit surrounding communities. An area of untapped opportunity is through improved supply chain resilience, considering the high dependency this sector has on the agricultural supply chain.



## Infrastructure

Potential benefit  
**US\$37.7 b**



of respondents in this sector identifying opportunities

Iberdrola SA; National Grid; Veolia Environment SA

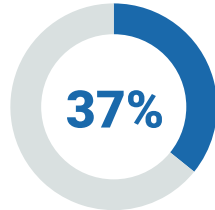
Increasing product sales and resilience to climate change impacts are the top opportunities identified in terms of both frequency and financial impact. Respondents are seeing increased demand for construction projects relating to improved water treatment infrastructure, renewable energy and climate change adaptation resulting in increases in revenue and strengthened competitive advantage.





## Manufacturing

Potential benefit  
**US\$183.12 b**



of respondents in this sector identifying opportunities

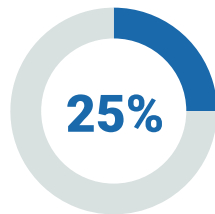
Boeing Company; Canon; Xylem

Similar to the infrastructure sector, increasing sales of existing products emerges as the top opportunity identified in both frequency and potential financial impact. Respondents are realizing opportunities to meet the expectations of an increasing environmentally conscious customer base by delivering products with improved water and energy efficiency. Respondents also report significant potential financial gains from the consequent increase in brand value by adopting environmentally sustainable manufacturing practices.



## Services

Potential benefit  
**US\$149.9 b**



of respondents in this sector identifying opportunities

Ecolab; Fujitsu Limited; Microsoft Corporation

Respondents are seeing opportunities for increased sales of products that monitor and manage environmental impacts as well as potential financial gains from investing in R&D, and the sales of new products/services that help their customers address water risks. The low disclosure rate on opportunities for this sector shows that many opportunities to reap the benefits of water action remain untapped.








**Customers are increasingly looking for solutions that improve their operational efficiency and cost savings, including reducing water use and the energy required to pump, heat or cool water.**

Ecolab



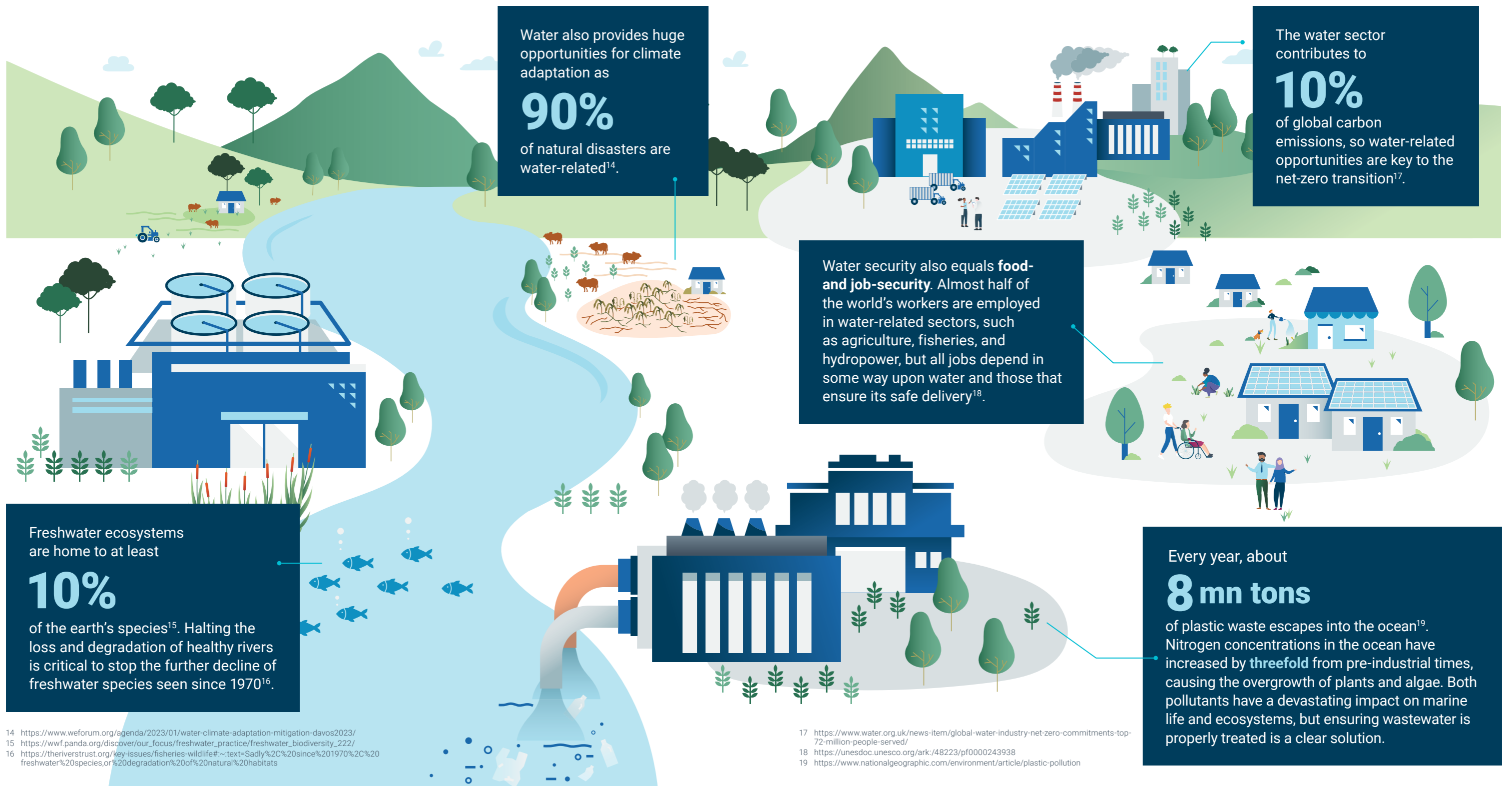
**Examples of opportunities from different regions and sectors**

 <b>Company</b> Bloomberg ticker	 <b>Country</b>	 <b>Primary opportunity (magnitude, timeframe)</b>	 <b>Description of opportunity and strategy to realize it</b>	 <b>Potential financial benefit (US\$ million)</b>
<b>Ecolab</b> Commercial & consumer services ECL US	USA	Increased sales of existing products/ services (Medium-high, current – up to 1 year)	Developing water-efficient products and services which will help customers conserve 300 billion gallons of water per year by 2030	140,000
<b>L'Oréal</b> Personal care & household products OR FP	France	Sales of new products/ services (Medium, 4 to 6 years)	Designing a product impact labelling system which displays the environmental and social impacts of their products, including details on water stress and ecotoxicity	160
<b>TBM Co, Ltd</b> Containers & Packaging 1805 JP	Japan	Expansion into new markets (High, more than 6 years)	Expanding their water-efficient paper line into areas with high water stress	411
<b>Samsung Display Co., Ltd</b> Electronic components 0795125D KS	Republic of Korea	Improved water efficiency in operations (High, current – up to 1 year)	Reducing utility costs by reducing water consumption. 253 programs have implemented to increase water efficiency, saving 397 million tonnes of water in 2021	99
<b>Fresh Del Monte Produce Inc</b> Fruit farming FDP US	USA	Cost savings (High, current – up to 1 year)	Implementing a new irrigation system in their Guatemala Banana operations which saved 2,591 million gallons in 2021	0.31
<b>ARÇELİK A.Ş</b> Household appliances ARCLK TI	Turkey	Increased brand value (High, 1 to 3 years)	Investing resources in research and development for environmentally friendly products and striving for success on sustainability indices	7,890



# The Ripple Effect of water-related opportunities

**In addition to direct monetary benefit, seizing water-related opportunities is enabling respondents to reduce their own water impacts as well as those of their customers, having direct positive consequences for communities and ecosystems.**



Water also provides huge opportunities for climate adaptation as **90%** of natural disasters are water-related<sup>14</sup>.

The water sector contributes to **10%** of global carbon emissions, so water-related opportunities are key to the net-zero transition<sup>17</sup>.

Water security also equals **food- and job-security**. Almost half of the world's workers are employed in water-related sectors, such as agriculture, fisheries, and hydropower, but all jobs depend in some way upon water and those that ensure its safe delivery<sup>18</sup>.

Freshwater ecosystems are home to at least **10%** of the earth's species<sup>15</sup>. Halting the loss and degradation of healthy rivers is critical to stop the further decline of freshwater species seen since 1970<sup>16</sup>.

Every year, about **8 mn tons** of plastic waste escapes into the ocean<sup>19</sup>. Nitrogen concentrations in the ocean have increased by **threefold** from pre-industrial times, causing the overgrowth of plants and algae. Both pollutants have a devastating impact on marine life and ecosystems, but ensuring wastewater is properly treated is a clear solution.

14 <https://www.weforum.org/agenda/2023/01/water-climate-adaptation-mitigation-davos2023/>  
 15 [https://wwf.panda.org/discover/our\\_focus/freshwater\\_practice/freshwater\\_biodiversity\\_222/](https://wwf.panda.org/discover/our_focus/freshwater_practice/freshwater_biodiversity_222/)  
 16 <https://therivertrust.org/key-issues/fisheries-wildlife#:~:text=Sadly%20since%201970%2C%20freshwater%20species,or%20degradation%20of%20natural%20habitats>

17 <https://www.water.org.uk/news-item/global-water-industry-net-zero-commitments-top-72-million-people-served/>  
 18 <https://unesdoc.unesco.org/ark:/48223/pf0000243938>  
 19 <https://www.nationalgeographic.com/environment/article/plastic-pollution>

By decreasing dependencies on water throughout the value chain, protecting rivers, lakes, and streams from pollution and ensuring access to water, sanitation, and hygiene services (WASH), all opportunities reported play a vital role in stemming the water crisis.

But of course, it doesn't stop there. Water is the bloodstream of the biosphere, so actions to tackle the water crisis have an impact multiplier effect, resulting in a broader set of benefits for public health, poverty alleviation, jobs, food security, climate mitigation and adaptation, biodiversity, and the protection of ecosystems.

# Water Smart


## The rise of low water impact products and services

**While the most frequently reported opportunity is related to increased water efficiency (53% of all reported), the opportunities with the highest financial impact relate to the type of products and services offered by a company<sup>20</sup>.**

For companies to thrive in a water-secure future, the products they provide will need to be fully aligned with this future. The water intensity and polluting potential across a product's entire lifecycle will have to be designed out completely, or at least drastically minimized<sup>21</sup>.

The push for these products is coming from all directions. The growth in consumer demand for sustainable products is a bright spot on the horizon that companies can ill afford to miss. Meanwhile, regulators worldwide are taking action to drive a transition away from polluting and water-intensive products<sup>22</sup>. For the company itself, investing in products and services that have lower impact on water can help mitigate water-related risks and make ground against withdrawal and/or pollution reduction targets.

Disclosure on low water impact products and services can enable companies to attract investment. For this reason, 2022 saw the introduction of associated questions for the first time<sup>23</sup>.



**40%**

of the 2,221 companies that responded to this question report that they classify their current products as those with a lower detrimental impact on water resources, water quality and ecosystems than the market norm or compared to previous products or services

The table on the following page captures the diverse products and services classified – from permeable cement to washing-up liquid.

By working closely with suppliers, companies can lessen the water impact of products and position themselves for growth. However, only 136 (14%) respondents are encouraging or incentivizing innovation in their supply chains to reduce water impacts in products and services, while just 13 (1%) respondents offer financial incentives to suppliers reducing their operational water impacts through the products they supply. It's clear this is an area yet to be harnessed. Joining CDP's Supply Chain program can help respondents engage their suppliers on disclosure and action on water security.

### On trend:

A 2022 YouGov survey commissioned by Water Witness International found UK consumers thirsty for water justice:

- ▶ **96%** of the 2,000 people surveyed are concerned about the global water crisis.
- ▶ **95%** are concerned about their water footprint – the amount of water it takes to produce the items we consume, from food to tech.
- ▶ Despite the cost-of-living crisis, more than half of shoppers would be willing to pay more for a product if it carried a certification of responsible water use – a ['Fair Water Footprint'](#).

<sup>20</sup> Relevant opportunity types include: Increased sales of existing products/ services; Sales of new products/ services; Reduced impact of product use on water resources; New R&D opportunities

<sup>21</sup> Such as minimizing microplastics entering water bodies from the washing of synthetic materials

<sup>22</sup> The EU Commission's legislation on Sustainable Product Initiative (SPI) being one example

<sup>23</sup> Only Full Tier respondents (3,247 companies) were presented with this question

## Water labeling

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As of March 2023, there is no common definition of what constitutes a low water impact product or service. Therefore, in 2022 companies responding to CDP's water security questionnaire were asked to explain the criteria and threshold they use for classifying products and/or services as low water impact. Despite this, there are several initiatives pushing for a transparent and universal method of labeling water impact. For instance, in the UK, [water-efficiency labels](#) will be introduced for new toilets, taps, showers, dishwashers, washing machines and washer-dryers by 2025 in the hope of reducing water and energy bills.

## Examples of low water impact products and services

### Cement

PERMECRETE combines the properties of concrete and draining technology to absorb rainwater off streets, parking surfaces, driveways, and walkways - reducing the risk of flooding. This produces a natural aquifer recharge or allows the water to be recycled.

**ACC**, India

### Power Generation

Electricity from renewable sources is generally less water intensive than electricity from fossil fuels<sup>24</sup>. Arizona Public Service (APS), the principal subsidiary of Pinnacle West Capital Cooperation, operates 2.2 gigawatts of renewable energy resources, including wind and solar power facilities. They have set a goal to provide 100% clean energy to customers by 2050.

**Pinnacle West Capital Cooperation**, USA

### Friction Materials

The use of copper in friction materials (in automobile and motorcycle brakes) is facing increasing regulation due to the pollution potential. Copper-free friction materials are contributing to the reduction of traces of copper entering rivers, lakes, and oceans.

**Showa Denko K.K.**, Japan

### Paper Recycling

PaperLab is an in-office dry paper recycler. It produces recycled paper from used paper without the need for a water supply or drainage system.

**Seiko Epson Corporation**, Japan

### Personal Care Products

Oral-care products including hello® toothpaste tablets and CO. by Colgate no-rinse stain remover, dish soap such as Palmolive Shake & Clean, and hand soap like Softsoap® Foaming Tablets, all use significantly less water in the companies' formulas.

**Colgate Palmolive Company**, USA

### Food Processing

Tastesense™ taste modulator reduces sugar to improve nutrition while also delivering lower greenhouse gas and water impacts. Kerry Group's assessment shows that with Tastesense™ customers can make a 30% reduction in water use associated with sugar in a final product.

**Kerry Group PLC**, Ireland

### Car Washing

Nissan Motor India offers a 'Free Foam Wash Service' which does not use hard chemicals and cuts water consumption to approximately 90 liters – a 45% reduction in water use compared to traditional methods.

**Nissan Motor Co.Ltd**, Japan

### Hybrid Cooling Systems

The Johnson Controls BlueStream™ hybrid cooling system combines water- and air-cooling technologies to reduce water consumption by up to 80% while maintaining energy performance in data centers, power plants and manufacturing plants.

**Johnson Controls International PLC**, Ireland

### Washing Machines

Whirlpool is pioneering lower water impact washing machines. The average clothes washer built by the company today uses 47% less water than those built in 1992, while capacity has increased by 57%.

**Whirlpool**, USA

### Household Products

Unilever has developed several low-water impact products, including the Rin detergent bar, the haircare brand The Good Stuff, and Sunlight, the antibacterial washing-up liquid that can be used without water and rinsing, making it easier for consumers to use less water in their homes.

**Unilever**, UK

### Bank Loans

BBVA has created a new sustainable loan that focuses on reducing companies' water footprint, a key priority in many companies' sustainability policies. The water footprint loan considers specific water indicators and CDP's Water score.

**Garanti BBVA**, Turkey

### Denim Manufacturing

Washwell™ is a smart denim wash program that reduces water use by 20% or more in the finishing process compared to conventional methods.

**GAP Inc**, USA

# Stories of Transformation

## A water-secure world is one in which citizens, industry and nature all have the water they need for a thriving, sustainable economy.

The seizing of opportunities, including the elimination of products and services that have a harmful impact on water resources, people and ecosystems is central to the corporate transition towards this future.

CDP analysis has shown that companies which put water at the heart of business decisions stand a better chance of reaping the rewards.

For **Fujifilm**, the **Ford Motor Company**, and **L'Oréal** – three long-term companies on the Water, Climate Change (and in the case of L'Oréal, Forests) A Lists – water is central to business strategy. These companies are striding out on their transition journeys, by innovating, influencing, and demonstrating leadership against key performance indicators (KPIs) on water security (see p27).



**Ford has unquestioningly benefited from our years-long relationship with CDP and we are grateful for the discipline, accountability, and value insight its water security program has added to our internal processes. It's gratifying, each year, to see our progress toward zero water withdrawals for manufacturing processes. Together with CDP and a growing number of our suppliers, we are ensuring billions of gallons of water are preserved for human consumption.**

**Andy Hobbs**  
Global Director, Environmental Quality  
Office, Environmental & Safety Compliance  
**Ford**



## Fujifilm

**Innovative products to clean water**

**Established in Japan as a manufacturer of photographic film, Fujifilm now counts healthcare, materials, business innovation and imaging as its core business fields. Fujifilm Holdings Corporations started to disclose water data to CDP in 2015 and has since decreased company-wide withdrawals by 4%.**

**Goal: Contribute to the treatment of 35 million tons of water per year by 2030.**

**Driver: Developing and disseminating products and services that reduce water impact.**

**Innovation:** Fujifilm's innovative ion-exchange membranes, derived from photographic film production, are already being used in water treatment processes around the world, with considerably higher levels of treated water recovery than more traditional treatment methods.

**Potential financial benefit:** Although Fujifilm's water filtration business is just starting, the filtration membranes being developed have the potential to change the market.

**Scaling up:** Fujifilm is contributing to a rapidly growing and innovating field for water savings and reuse by working together with related industry partners.

**Enablers:** Strong internal governance systems and mechanisms, including C-Suite remuneration based on achievement of environmental targets, enables Fujifilm to effectively manage its water impact.

**Recommendation from CDP:** Fujifilm should accelerate environmentally conscious product development, considering the entire lifecycle of all products from procurement, manufacturing, transportation, use and disposal.





## Ford Motor Company

Drive to zero

Ford Motor Company is a multinational automobile manufacturer headquartered in the US that has been disclosing water data since 2010. It has reduced its water withdrawals by 40% since 2015.

**Goal:** Zero withdrawals in manufacturing by 2050

**Driver:** Increasing water scarcity, leading to limits on water withdrawals.

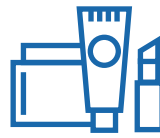
**Innovation:** Installing reverse osmosis and ultrafiltration at its Cuautitlán Stamping and Assembly Plant in Mexico.

**Potential financial benefit:** The cost of implementing water-saving technology required is lower than the potential financial impact of water-related risks.

**Scaling up:** Through Ford's internal supply chain program, selected suppliers set withdrawal reduction targets and report progress and leading practices. Participating suppliers are on track to save an estimated 18 million gallons of water between 2021–2023. The number of suppliers engaged has increased each year.

**Enablers:** When Ford determines where and how to build new vehicles, the 100 Point Tool is used to ensure water issues are integrated into business objectives, and that water reducing processes and associated costs are factored into program planning.

**Recommendation from CDP:** A target on pollution that matches the ambition of Ford's withdrawal reduction target would help drive much-needed progress on water quality.



## L'Oréal

Decoupling growth from water impact

L'Oréal is the world's largest cosmetics company, headquartered in Clichy (France). L'Oréal has been disclosing water data through CDP since 2010. Since 2015 it has reduced its water withdrawals by 7%.

**Goal:** Enable consumers to reduce product-use water consumption by 25% compared to 2016, on average and by finished product.

**Driver:** Gain competitive advantage as consumers shift to sustainable and water resilient products.

**Innovation:** 'Waterless' is part of L'Oréal's research and innovation strategy, which considers water availability, product innovation, new technologies, and changing consumer behavior.

**Potential financial benefit:** Gaining additional market share, such as in the solid shampoo market.

**Scaling up:** To advance the entire cosmetic industry, L'Oréal has published a methodology to quantify the environmental performance of cosmetic formulae to guarantee products are respectful of all aquatic ecosystems.

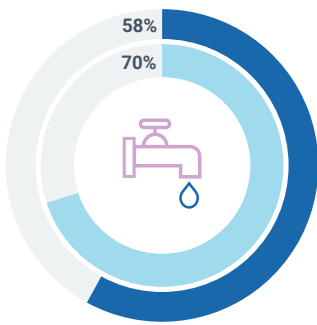
**Enablers:** In June 2020, L'Oréal launched a new sustainability program, 'L'Oréal for the Future'. This program, covering the entire Group's value chain and every step of the life cycle of their products, accelerates its sustainable transformation process, to ensure activities stay within planetary boundaries.

**Recommendation from CDP:** It is encouraging that L'Oréal is improving the biodegradability of formulas and packaging. Considering L'Oréal's high plastic footprint, they are encouraged to respond to CDP's new plastic-related questions in 2023.

# Key Performance Indicators (KPIs) on water security

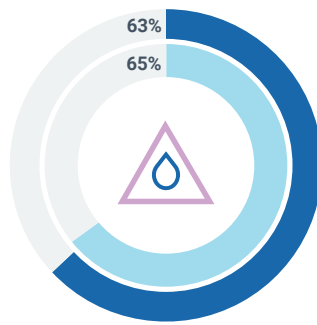
2022 2021

## Reducing withdrawals



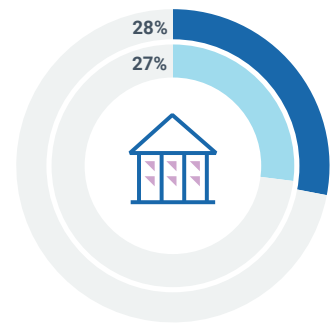
Respondents lowering or maintaining their withdrawals

## Water risk assessment



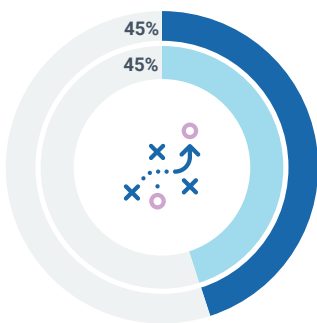
Respondents that undertake a water-related risk assessment

## Governance



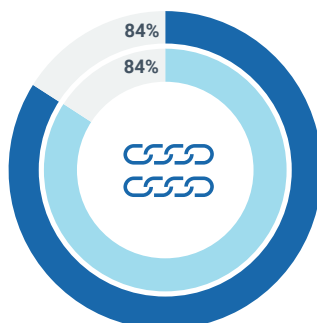
Respondents that link C-Suite incentives to the achievement of water targets

## Strategy



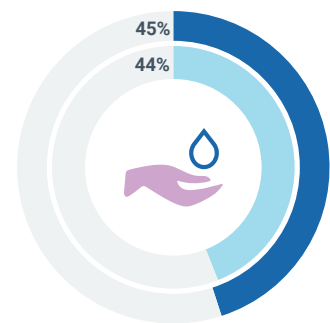
Respondents that integrate water-related issues into long-term business objectives, business strategy and financial planning

## Value chain engagement



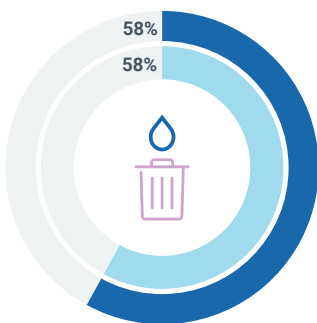
Respondents engaging with their value chain on water-related issues

## Opportunities



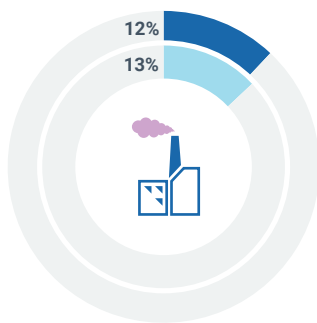
Respondents that are identifying and realizing water-related opportunities

## Monitoring wastewater discharges



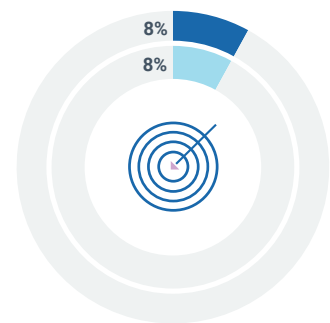
Respondents that monitor the quality of water discharges at more than 75% of facilities

## Pollution targets



Respondents setting pollution-related targets/goals that are monitored at the corporate level

## WASH targets



Respondents setting targets/goals on WASH that are monitored at the corporate level

# Conclusion



**Cate Lamb**  
Global Director of Water  
Security,  
CDP

**We have just seven years to meet, and ideally, exceed the Sustainable Development Goals and the objectives of the Paris Agreement. To do so, we must fundamentally re-wire today's global economy and what this report demonstrates is that for some products, in some companies, this re-wiring is already underway.**

From food to fashion, energy to chemicals, businesses everywhere are already putting water at the heart of their strategies, seizing opportunities, and innovating to drastically cut water dependency and reduce pollution. These companies are adjusting to the new realities of water security, recognizing that business-as-usual approaches to the way they operate and grow are no longer fit for purpose.

These companies are achieving both short and long-term cost savings, seizing new sustainable sources of revenue and contributing tangibly to a more resilient future.

And we can only see the tip of the iceberg in 2022's dataset. Just 45% of responders identified opportunities. If all 3,909 disclosers did so, the size of the opportunity pot would reach almost US\$1 trillion.

Is it all good news? No, of course not, there is still a lot to be done. But there are more reasons to be optimistic now than at any point in the life of CDP's work on water. We have more disclosers than ever before; more global 500 CEO's with their annual performance review tied to the achievement of water goals; more multi-billion dollar companies pushing water disclosure and action through their supply chains; and more financial institutions moving from rhetoric to reality.

At the time of writing, the world awaits the UN 2023 Water Conference: a pivotal moment to galvanize further commitment to addressing our current serious water concerns. We hope that this report sends a clear signal to Heads of State that not only is it possible for the private sector to act on water, but that their businesses are stronger for it.

There has never been a better time for more ambitious national and international policy responses to the water crisis, in particular with regards to disclosure. As this report demonstrates, rather than constraining growth, such policies can unleash the ingenuity and power of the markets in ways that mean we will solve the water crisis.



# Appendix I

## Report methodology

### Overview

In 2022, 8,477 companies were asked to provide data about their efforts to manage and govern freshwater resources through CDP. 2,599 of these were asked by their investors, while 6,601 were asked by their purchasing companies as part of CDP's Supply Chain Program. Note that some companies can be requested by both their investors and as part of the CDP's Supply Chain Program. In total, 3,909 companies responded to the Water Security Questionnaire. These companies are the focus of this report.

For the purposes of this report, respondents to CDP's 2022 water questionnaire are divided into 12 sectors, defined by CDP's Activity Classification System, which categorizes companies by the diverse activities from which they derive revenue, and associates these activities with how they impact on water security.

### Key findings

#### Global brands report water-related opportunities worth US\$436 billion

▶ To calculate the sum financial impact of reported opportunities, values reported by companies in response to question W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* were converted to USD. Where possible, duplicated and unsubstantiated values in the top fifth percentile were removed.

▶ The maximum of the range of values was then summed, equalling US\$436 billion from 2,718 reported opportunities.

#### 4x more opportunities for those firms integrating water into business strategy

▶ Company responses to both W7.1: *Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so, how?* and W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* were assessed.

- ▶ Of the 1,839 companies reporting currently integrating water-related issues into long-term strategic business planning, 1,362 reported that they are currently realizing water-related opportunities (74%).
- ▶ Of the 2,009 companies reporting that they are not yet integrating water-related issues into long-term strategic business planning, 358 reported that they are currently realizing water-related opportunities (18%).
- ▶  $74\%/18\% = 4.2$ , therefore companies that integrate water-related issues into long-term strategic business planning are more than four times more likely to be realizing water-related opportunities.

#### 85% increase in disclosure over the last five years

- ▶ In 2018, 2,112 companies responded to the CDP water questionnaire compared to 3,909 companies in 2022, an increase of 85% in five years.

### Normalising transparency: the role of disclosure in enabling action

#### Number of non-disclosing companies in 2022

- ▶ Calculated the total number of companies requested to respond to CDP water questionnaire in 2022 and subtracted the number of responses, based on response status on CDP system.

#### Disclosure per country in 2022

- ▶ Calculated the number of companies requested and responding to the CDP water questionnaire in each country in 2022 and then calculated the disclosure rate per country.

#### Disclosure response rate 2015-2022

- ▶ Based on CDP's historic data on disclosure numbers as reported in previous Global Water Reports.
- ▶ The total number of companies requested and responding for each year between 2015 and 2022 is presented.

### Disclosure breakdown by industry (2022)

- Calculated the number of companies requested and submitting a response to the water questionnaire in 2022 per industry.
- Two manufacturing subsectors (Electronic and Electrical equipment and Metal products manufacturing) have been split out. For all other stats relating to the manufacturing sector, all subsectors are combined.

## Tapping the market

### Financial impact of opportunities

- To calculate the sum financial impact of reported opportunities, values reported by companies in response to question W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* were converted to USD. Where possible, duplicated, and unsubstantiated values in the top fifth percentile were removed. The maximum of the range of values was then summed, equalling US\$436 billion from 2,718 reported opportunities.
- The average financial impact of all reported opportunities was calculated to be US\$252,168,884.

### Number of organisations reporting opportunities

- To calculate the number of organisations realising water-related opportunities, responses to W4.3 *Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?* were assessed.
- 1,729 companies reported realising at least one water-related opportunity. This is 45% of the total responding companies.
- To calculate the number of opportunities reported by these organisations, responses to W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* were assessed.
- The count of reported opportunities was 2,718.

### Average number of reported opportunities per organisation by sector

- The number of opportunities by opportunity type and per industry reported through question W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* was calculated.
- These numbers were then divided by the total number of disclosures per industry.

### Potential financial impact and frequency per type of opportunity

- To calculate the sum financial impact of reported opportunities, values reported by companies in response to question W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* were converted to USD. Where possible, duplicated, and unsubstantiated values in the top fifth percentile were removed. The maximum of the range of values was then summed for each opportunity type.
- For frequency, a count of opportunities reported by opportunity type was then calculated.

### Relationship between internal water pricing and financial impact of water efficiency

- To calculate the sum financial impact of reported opportunities, values reported by companies in response to question W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* were converted to USD. Where possible, duplicated and unsubstantiated values in the top fifth percentile were removed.
- The maximum of the range of reported values was then taken for each opportunity, and the 'opportunity type' filtered down to 'efficiency'.
- Then, the average financial impact of efficiency opportunities was calculated for companies responding 'Yes' and 'No, and we do not anticipate doing so within the next two years' to W7.4 *Does your company use an internal price on water?*

- Companies with an internal water price are reporting water efficiency opportunities of US\$49 million on average, compared to US\$8 million for companies with no water pricing and no plans to apply one, a difference of approximately six times greater.

### Percentage of organisations applying internal water price

- The number of companies responding to W7.4 *Does your company use an internal price on water?* was calculated as a proportion of the total number of companies presented with this question (16%).

### Opportunity category with most financial impact

- To calculate the sum financial impact of reported opportunities, values reported by companies in response to question W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* were converted to USD and an attempt to clean the data to remove duplicate values and unsubstantiated values in the top fifth percentile was made.
- The maximum of the range of values was then summed for each opportunity type.
- The opportunity type with the highest attributed financial impact was 'Products and services', with a total financial impact of US\$297 billion, 68% of the US\$436 billion sum reported financial impact.

### Number of organisations disclosing no water-related opportunities

- The count of organisations not disclosing opportunities through W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* is 2,161, 55% of the total number of reporting organisations.

## Water Smart

### Most frequently reported opportunity type

- The count of opportunities reported in W4.3a *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business* by each opportunity type was taken.
- Water efficiency was the most reported opportunity type, with 1,434 opportunities reported (53% of total reported opportunities).

### 40% of the 2,221 companies that responded to this question report that they classify their current products as those with a lower detrimental impact

- The number of organisations responding to W7.5 *Do you classify any of your current products and/or services as low water impact?* with 'Yes' was counted (885).
- This question is also only presented to respondents submitting to the Full Tier version of the questionnaire. The percentage is therefore calculated as proportion of Full Tier respondents who were presented with this question (40%).

### Only 136 (14%) respondents are encouraging or incentivizing innovation in their supply chains to reduce water impacts in products and services

- The count of organisations selecting 'encourage/incentivize innovation to reduce water impacts in products and services' in their response to W1.4b *Provide details of any other water-related supplier engagement activity was taken* (136).
- The total count of organisations responding to W1.4b was then taken (940) and the percentage of respondents encouraging/incentivizing innovation to reduce water impacts in products and services calculated (14%).

### Just 13 (1%) respondents offer financial incentives to suppliers reducing their operational water impacts through the products they supply

- ▶ The count of organisations selecting 'offer financial incentives to suppliers improving water management and stewardship across their own operations and supply chain' in their response to W1.4b *Provide details of any other water-related supplier engagement activity was taken* (13).
- ▶ The total count of organisations responding to W1.4b was then taken (940) and the percentage of respondents encouraging/incentivizing innovation to reduce water impacts in products and services was calculated (1%).

## Key performance indicators

### Reducing withdrawals – percentage of respondents lowering or maintaining their withdrawals

- ▶ Distinct count of companies that select 'Much Lower', 'Lower' or 'About the same' in response to question W1.2b: *What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?*
- ▶ The percentage is calculated as a proportion of all companies that have submitted a response to the water security questionnaire.

### Water risk assessment – percentage of respondents that undertake a water-related risk assessment

- ▶ Distinct count number of companies that select 'Yes' in response to the question W3.3: *Does your organization undertake a water-related risk assessment?*
- ▶ The percentage is calculated as a proportion of all companies that have submitted a response to the water security questionnaire.

### Governance - percentage of companies that provide C-Suite incentives for the achievement of water targets

- ▶ Distinct count number of companies that select 'Yes' in response to the question W6.4: *Do you provide incentives to C-Suite employees or board members*

*for the management of water-related issues?*

- ▶ The percentage is calculated as a proportion of all companies that have submitted a response to the water security questionnaire.

### Strategy - percentage of companies that integrate water aspects into their long-term business objectives, business strategy and financial planning:

- ▶ Distinct count of companies that select 'Yes, water-related issues are integrated' for all three of the following aspects in response to question W7.1: *Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?: long-term objectives, strategy for achieving long-term objectives, and financial planning.*
- ▶ The percentage is calculated as a proportion of all companies that have submitted a response to the water security questionnaire.

### Value chain engagement – percentage of respondents engaging their value chain on water-related issues:

- ▶ Distinct count of the number of companies selecting 'Yes' in response to W1.4: *Do you engage with your value chain on water-related issues?*
- ▶ This question depends on conditional logic and is only presented to respondents if they select water as 'Neutral', 'Important', or 'Vital' to the success of their business in response to W1.1. This question is also only presented to respondents submitting to the Full Tier version of the questionnaire. The percentage is therefore calculated as proportion of Full Tier respondents who were presented with this question.

### Opportunities – percentage of companies realizing water-related opportunities

- ▶ Distinct count of companies that provide details of at least one opportunity in response to question W4.3a: *Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.*
- ▶ The percentage is calculated as a proportion of all companies that have submitted a response to the water security questionnaire.



### Monitoring wastewater discharges – respondents that monitor the quality of water discharges at more than 75% of facilities

- ▶ Distinct count of the number of companies that select '76-99' or '100%' in response to: W1.2 *Across all your operations, what proportion of the following water aspects are regularly measured and monitored?, where water aspect is 'Water discharge quality – by standard effluent parameters'.*
- ▶ Companies presented with W1.2 are those that respond "vital," "important" or "neutral" to question W1.1: *Rate the importance (current and future) of water quality and water quantity to the success of your business.* The percentage is therefore calculated as proportion of Full Tier respondents who were presented with this question.

### Pollution targets - percentage of companies with targets relevant to pollution:

- ▶ Distinct count of companies that provide pollution-related target(s) in response to question W8.1a:

*Provide details of your targets that are monitored at the corporate level, and the progress made.* Pollution-related targets were identified by searching for specific terms and responses under 'category of targets.

- ▶ Percentage calculated as a proportion of all companies that submitted a response to the water security questionnaire.

### WASH targets – percentage of companies with targets relevant to WASH

- ▶ Distinct count of companies that provide WASH-related target(s) in response to question W8.1a: *Provide details of your targets that are monitored at the corporate level, and the progress made.* WASH-related targets were identified by searching for specific terms and responses under 'category of targets.
- ▶ Percentage calculated as a proportion of all companies that submitted a response to the water security questionnaire.





## Appendix II

### Key Performance Indicators (KPIs) by sector

KPI	Apparel	Biotech, Health Care & Pharma	Food, Beverage & Agriculture	Fossil Fuels	Hospitality	Infrastructure	Manufacturing	Materials	Power generation	Retail	Services	Transportation Services	Total
<b>Disclosure</b>													
Number of companies requested for water information by investors and supply chain members	122	289	728	240	43	240	2642	1011	97	336	618	209	8477
Number of companies responding to investor and supply chain request for water information	56	121	408	72	26	101	1940	607	46	129	288	116	3910
Number of companies responding to investor request for water information	32	84	146	62	24	76	403	293	45	73	51	11	1300
Response rate (%) - investor and supply chain	45.9%	41.9%	56.0%	30.0%	60.5%	42.1%	73.4%	60.0%	47.4%	38.4%	46.6%	55.5%	46.1%
<b>CDP supply chain program disclosure</b>													
Number of companies requested for water information by supply chain members	47	120	503	64	12	73	2378	619	17	130	546	191	6601
Number of companies responding to customer/supply chain request for water information	33	69	328	31	8	38	1806	455	10	73	254	107	3212
<b>Water dependence</b>													
Respondents reporting that sufficient amounts of good quality freshwater available for use is 'vital' or 'important' for their direct operations	50.0%	85.1%	84.8%	66.7%	96.2%	79.2%	58.0%	76.3%	95.7%	48.1%	40.6%	41.4%	63.7%
Respondents reporting that sufficient amounts of good quality freshwater available for use is 'vital' or 'important' for their indirect operations	62.5%	81.8%	75.5%	51.4%	88.5%	63.4%	49.1%	61.1%	63.0%	59.7%	38.2%	41.4%	55.1%
<b>Water accounting</b>													
Respondents that monitor total water withdrawal volumes at more than 75% of facilities	64.9%	86.2%	81.4%	93.4%	88.0%	84.1%	74.8%	88.2%	97.8%	71.6%	46.9%	39.4%	77.2%
Respondents that monitor total water consumption volumes at more than 75% of facilities	62.2%	77.1%	77.0%	85.2%	64.0%	81.8%	65.0%	83.5%	93.5%	70.3%	46.9%	33.3%	70.2%
Respondents that monitor total water discharge volumes at more than 75% of facilities	67.6%	74.3%	68.1%	88.5%	72.0%	78.4%	58.8%	75.5%	97.8%	59.5%	38.8%	22.7%	63.8%
Respondents that monitor water recycling/reuse at more than 75% of facilities	35.1%	44.0%	40.7%	73.8%	36.0%	46.6%	30.2%	50.7%	63.0%	27.0%	19.0%	22.7%	37.0%
Respondents that meter and monitor the quality of water discharges at more than 75% of facilities	54.1%	64.2%	69.3%	86.9%	24.0%	72.7%	51.7%	74.5%	95.7%	40.5%	27.9%	25.8%	58.3%
Respondents reporting withdrawals from water-stressed areas	45.9%	51.4%	44.6%	52.5%	80.0%	51.1%	34.0%	48.5%	56.5%	54.1%	28.6%	6.1%	40.0%
<b>Value chain engagement</b>													
Respondents engaging their value chain on water-related issues	91.7%	78.6%	87.7%	87.0%	87.0%	92.5%	81.2%	86.1%	78.3%	89.4%	83.3%	66.7%	84.3%
Respondents with financial supply chain incentives	4.3%	2.1%	9.6%	0.0%	14.3%	2.7%	3.5%	2.4%	0.0%	4.7%	0.0%	0.0%	4.1%
Respondents requiring 50% or more of their suppliers to report on their water use, risks and/or management information	45.8%	21.4%	35.2%	69.6%	56.5%	47.5%	32.2%	28.3%	34.8%	29.8%	38.9%	0.0%	33.8%
<b>Business impacts</b>													
Respondents that have experienced detrimental water-related business impacts in the reporting year	3.6%	3.3%	13.7%	8.3%	26.9%	23.8%	4.3%	11.7%	30.4%	17.1%	6.6%	2.6%	8.0%
Total financial value of impacts (US\$)	\$35,139	\$15,292,855	\$210,078,888	\$159,339,521	\$80,317,082	\$2,529,898,793	\$1,118,203,422	\$7,319,337,508	\$294,131,838	\$898,555,071	\$49,575,973	\$0	\$12,674,766,091
Respondents subject to penalties, fines and/or enforcement orders	5.4%	5.8%	11.0%	19.4%	0.0%	14.9%	3.3%	9.9%	15.2%	5.4%	1.7%	1.7%	5.9%
Total value of reported penalties, fines and/or enforcement orders (US\$)	\$43,877	\$1,580,020	\$2,388,387	\$6,071,601		\$4,311,378	\$982,401	\$3,075,283	\$31,639	\$506,406	\$9,783	\$1,300	\$19,002,075
<b>Water risk assessment</b>													
Respondents that undertake a water-related risk assessment	67.9%	74.4%	66.9%	87.5%	88.5%	84.2%	61.1%	74.1%	97.8%	55.8%	32.6%	28.4%	62.7%
Respondents that undertake a water risk assessment with a specified frequency	66.1%	71.9%	59.6%	83.3%	88.5%	82.2%	57.1%	71.3%	93.5%	52.7%	29.9%	25.9%	58.8%
Respondents that factor water availability at a basin/catchment level into water risk assessments	44.6%	54.5%	44.9%	63.9%	80.8%	64.4%	31.8%	51.6%	78.3%	36.4%	20.8%	14.7%	38.3%
Respondents that factor suppliers into water risk assessments	44.6%	55.4%	35.8%	51.4%	84.6%	58.4%	29.2%	38.4%	52.2%	38.8%	16.3%	9.5%	32.9%

KPI	Apparel	Biotech, Health Care & Pharma	Food, Beverage & Agriculture	Fossil Fuels	Hospitality	Infrastructure	Manufacturing	Materials	Power generation	Retail	Services	Transportation Services	Total
<b>Water risks</b>													
Respondents exposed to substantive water risk in either direct operations or along the value chain	48.2%	41.3%	58.3%	59.7%	53.8%	64.4%	38.5%	57.2%	78.3%	40.3%	22.9%	17.2%	43.6%
Respondents exposed to substantive water risk in direct operations only	16.1%	19.8%	23.5%	48.6%	30.8%	30.7%	22.8%	32.1%	54.3%	9.3%	10.1%	8.6%	23.5%
Respondents exposed to substantive water risk in the value chain only	7.1%	2.5%	5.4%	0.0%	0.0%	1.0%	1.9%	1.3%	0.0%	9.3%	1.4%	2.6%	2.4%
Percentage of water risks reported that are physical	81.8%	82.6%	87.5%	62.4%	94.2%	69.7%	75.4%	80.8%	72.3%	85.1%	79.6%	50.0%	78.8%
Percentage of water risks reported that are regulatory	9.1%	9.2%	9.3%	30.6%	1.9%	20.6%	18.3%	13.7%	25.0%	6.0%	14.8%	25.0%	15.3%
Percentage of water risks reported that are reputational	8.0%	7.3%	2.6%	4.7%	1.9%	8.6%	4.8%	5.0%	2.7%	9.0%	4.2%	25.0%	5.0%
Percentage of water risks reported that are technological	1.1%	0.9%	0.6%	2.4%	1.9%	1.1%	1.4%	0.6%	0.0%	0.0%	1.4%	0.0%	1.0%
Respondents reporting >50% of facilities at risk	8.9%	9.9%	21.3%	25.0%	15.4%	14.9%	11.4%	21.7%	28.3%	11.6%	6.2%	6.0%	14.0%
<b>Water opportunities</b>													
Respondents that identify and are realizing water-related opportunities	55.4%	54.5%	56.1%	61.1%	61.5%	72.3%	37.1%	58.3%	89.1%	48.1%	25.0%	19.8%	44.2%
Percentage of water opportunities relating to efficiency	50.0%	54.1%	64.7%	59.4%	58.6%	26.4%	56.1%	47.5%	51.3%	41.1%	48.1%	52.9%	52.8%
Percentage of water opportunities relating to resilience	20.0%	22.9%	17.4%	17.7%	10.3%	15.7%	8.6%	8.5%	18.4%	10.5%	10.4%	8.8%	11.7%
Percentage of water opportunities relating to products and services	21.7%	11.9%	5.5%	12.5%	13.8%	35.7%	21.9%	29.3%	15.8%	32.6%	33.0%	17.6%	21.8%
Percentage of water opportunities relating to markets	6.7%	7.3%	8.0%	7.3%	17.2%	17.9%	8.7%	9.7%	7.9%	10.5%	7.5%	5.9%	9.2%
<b>Governance &amp; strategy</b>													
Respondents with a documented water policy that is publicly available	51.8%	56.2%	38.5%	47.2%	69.2%	64.4%	36.1%	47.3%	76.1%	40.3%	21.5%	11.2%	38.9%
Respondents with board-level oversight of water issues	71.4%	82.6%	78.7%	88.9%	92.3%	83.2%	66.0%	81.1%	97.8%	66.7%	39.2%	41.4%	69.0%
Respondents that integrate water-related issues into long-term business objectives	55.4%	67.8%	65.0%	66.7%	84.6%	72.3%	37.7%	63.3%	87.0%	50.4%	25.7%	22.4%	47.1%
Respondents that integrate water-related issues into their strategy for achieving long-term objectives	55.4%	66.9%	62.7%	65.3%	80.8%	74.3%	36.7%	61.4%	84.8%	48.1%	25.0%	22.4%	45.9%
Respondents that integrate water-related issues into financial planning	44.6%	58.7%	59.1%	63.9%	65.4%	67.3%	32.9%	56.3%	82.6%	41.1%	21.9%	19.8%	41.6%
Respondents whose water-related CAPEX increased in the reporting year	28.9%	30.8%	37.0%	28.1%	25.0%	31.4%	29.6%	39.3%	28.6%	25.0%	18.0%	22.4%	31.1%
Respondents whose water-related OPEX increased in the reporting year	36.8%	34.1%	36.6%	33.3%	50.0%	30.2%	33.6%	37.9%	38.1%	31.8%	24.2%	20.4%	34.0%
Respondents using an internal price on water	15.8%	17.6%	18.7%	21.1%	4.2%	12.8%	11.9%	18.6%	26.2%	4.5%	9.4%	4.1%	13.9%
Respondents that provide C-suite incentives	35.7%	42.1%	35.0%	54.2%	57.7%	43.6%	21.9%	39.4%	56.5%	24.8%	16.7%	9.5%	28.0%
<b>Targets &amp; goals</b>													
Respondents with targets and/or goals that are monitored at the corporate level	71.4%	68.6%	66.9%	72.2%	84.6%	78.2%	57.7%	70.3%	89.1%	57.4%	33.3%	38.8%	60.1%
Respondents setting water intensity reduction targets	12.5%	1.7%	12.5%	6.9%	3.8%	5.9%	4.1%	9.4%	8.7%	5.4%	1.0%	0.0%	5.7%
Respondents setting supplier engagement targets	25.0%	8.3%	6.1%	4.2%	11.5%	5.0%	2.9%	3.8%	4.3%	17.8%	2.8%	4.3%	4.5%
Respondents setting Water, Sanitation & Hygiene (WASH) targets	3.6%	9.1%	5.4%	9.7%	23.1%	13.9%	8.2%	10.5%	6.5%	9.3%	5.9%	0.9%	8.2%
Respondents setting water consumption targets	23.2%	17.4%	13.5%	11.1%	7.7%	19.8%	16.3%	15.2%	32.6%	11.6%	11.5%	16.4%	15.6%
Respondents setting water withdrawal targets	10.7%	23.1%	13.7%	19.4%	38.5%	13.9%	14.7%	16.0%	26.1%	14.0%	8.3%	6.0%	14.6%
<b>Pollution indicators</b>													
Respondents setting pollution-related targets and/or goals	14.3%	17.4%	13.0%	19.4%	0.0%	24.8%	10.1%	20.8%	32.6%	9.3%	2.4%	4.3%	12.3%
Respondents identifying pollution-related risks	8.3%	14.0%	17.7%	19.4%	14.3%	23.0%	20.1%	23.0%	25.0%	6.7%	15.7%	22.2%	19.6%
Respondents subject to pollution-related penalties, fines and/or enforcement orders	0.0%	2.2%	3.8%	5.3%	0.0%	7.0%	1.2%	2.1%	0.0%	0.0%	0.8%	0.0%	1.8%
<b>Nature-based solutions (NbS)</b>													
Respondents with targets and/or goals on NbS	3.6%	5.8%	5.9%	9.7%	3.8%	15.8%	2.7%	4.3%	15.2%	3.1%	0.7%	0.9%	3.8%
Respondents deploying NbS related responses to water risks	0.0%	0.0%	2.5%	2.8%	0.0%	1.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.5%

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