

## W0. Introduction

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### W0.1

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#### (W0.1) Give a general description of and introduction to your organization.

Established in 1956, Tekfen Group of Companies operates in three core business areas: Contracting, Agri-Industry and Real Estate Development. The Group has 40 companies and 12 subsidiaries. Tekfen Holding, which owns all the companies and subsidiaries of Tekfen Group, is listed on Borsa Istanbul's BIST 30 Index. In 2017, the Group had TRY7,487 million in revenues and assets of TRY9,367 million. With 18,296 skilled employees and more than 60 years of experience, it is exemplary within the business world in terms of quality standards and ways of doing business.

The contracting group, which includes Tekfen Construction, is a solution partner preferred by leading employers around the world. Tekfen Construction is an internationally recognized leader of the Turkish contracting sector, operating in many countries. To date, it has completed over 350 projects, demonstrating its accumulated expertise. It is a sector leader for its capacity to deliver the most challenging projects and it has established a brand recognition through its commitment to maintaining global standards of quality, its ways of doing business, its experience, and the importance it places on health, safety and environment. Tekfen Construction is the preferred partner of many international companies.

The group's extensive experience is concentrated, first and foremost, on constructing oil, gas and petrochemical facilities. It offers engineering, procurement, construction (EPC) turn-key solutions for pipe lines, land and sea terminals, tank farms, oil refineries, offshore platforms, pumping and compressor stations, power stations, industrial facilities, highways and metros, sports complexes, infrastructure projects and superstructures. Tekfen Manufacturing's Derince Plant as well as Ceyhan Steel Structure Fabrication Plant and Bayıl Steel Structure Fabrication Plant within Tekfen Construction, specialize in steel fabrication and process equipment, and the construction of storage tanks. With US\$3.4 billion in active backlog, Tekfen Construction is ranked 112nd on Engineering News Record's list of the 250 largest international contracting companies. Directly under the group, Tekfen Engineering provides engineering design, procurement and project management services for group and non-group projects. The company undertakes technologically challenging projects requiring great know-how and it is one of Turkey's leading companies in its sector.

Tekfen Agri-Industry Group is the sector's largest private corporation in terms of business volume, product and service portfolio, and market share. Operating as Toros Tarım, it is Turkey's 59th largest industrial company. While principally a producer and marketer of fertilizer, Toros Tarım also engages in yield-raising, quality-improving agricultural inputs, seed production, techno-agriculture, and seedling production. Toros holds the highest share of installed production capacity for fertilizer in Turkey. It has 1,246 dealers and authorized sales points throughout Turkey, enabling it to distribute its products to every corner of the country. Terminal services is an important non-agricultural area of business for Toros Tarım. The company manages two terminals, in Ceyhan and Samsun, and it provides additional services such as pilotage, tugboat, and shipping agency services as well. Built in 1981 alongside Toros Tarım's Ceyhan Production Plant, the Toros Ceyhan Terminal is the second largest port in the Iskenderun Gulf. Toros Tarım's other business areas are free zone and gas station management. The Adana Yumurtalık Free Zone (TAYSEB), founded as an industrial facility in Ceyhan in 1998, covers an area 4.6 million m<sup>2</sup>, making it one of Turkey's largest free zones.

Tekfen Real Estate Group engages in investment, project development, construction management and facility management in the real estate sector. The group's commitment to design behoves it to work with the best architects and ensures the projects in its portfolio are conspicuous not only for their functionality and construction quality, but also for their unique design. Tekfen Real Estate Development projects have won many prestigious prizes. Tekfen Real Estate Development aims at customer satisfaction in every detail. Within the group, Tekfen Real Estate Development& Investment provides project development and management services, while Tekfen Tourism& Facilities Management (Tekfen Services) handles facility management services. As the author of the first green building projects in Turkey, the Real Estate Group is also founding member of the Turkish Green Building Council (ÇEDBİK).

Aside from its Contracting, Agri-Industry and Real Estate Development areas of business, Tekfen Group is involved in insurance, through Tekfen Insurance.

### W-CH0.1a

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**(W-CH0.1a) Which activities in the chemical sector does your organization engage in?**

Bulk inorganic chemicals  
Specialty inorganic chemicals

**W0.2**

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**(W0.2) State the start and end date of the year for which you are reporting data.**

	Start date	End date
Reporting year	January 1 2017	December 31 2017

**W0.3**

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**(W0.3) Select the countries/regions for which you will be supplying data.**

Turkey

**W0.4**

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**(W0.4) Select the currency used for all financial information disclosed throughout your response.**

USD

**W0.5**

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**(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.**

Companies, entities or groups over which operational control is exercised

**W0.6**

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**(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?**

No

**W1. Current state**

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**W1.1**

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**(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.**

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Important	Vital	Sufficient amounts of good quality freshwater is important for our direct operations. We provide our employees to WASH facilities in our construction, production and business processes and also use freshwater in our fertilizer production operations. We considered RCP4.5 as a realistic scenario for the impacts of climate change in Turkey. This is because we base our analyses on the "Climate Change Projections for Turkey" report published by the Turkey's General Directorate of Meteorology. According to the report, Turkey will face 2 to 3 degrees in Celsius increase in mean temperature during 2013-2040 and up to 4 degrees Celsius in later periods. Reductions in mean precipitation are also expected. We consider these impacts especially vital in our Agri-Industry operations. Therefore both direct and indirect use importance ratings will be higher in the future.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Neutral	Our Agri-Industry facilities use condensed water during electricity production therefore recycled water is important to our operations. We foresee an increase along with our growth rate in the direct use of recycled water in the future, therefore direct use rating will stay important for us. We do not consider indirect use important. This might be relevant to some of our suppliers so we are neutral at this point. We do not foresee an increase or decrease in indirect use in the future so the rating will not change.

**W1.2**

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**(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?**

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	76-99	We monitor water withdrawals from all our major operations. Water withdrawals are monitored through monthly bills from suppliers in our commercial operations. In our production operations, we monitor through both bills and meters.
Water withdrawals – volumes from water stressed areas	76-99	We monitor water withdrawals from all our major operations. Water withdrawals are monitored through monthly bills from suppliers in our commercial operations. In our production operations, we monitor through both bills and meters. We are mainly working in water stressed areas.
Water withdrawals – volumes by source	76-99	We monitor water withdrawals from all our major operations including their sources. Water withdrawals are monitored through monthly bills from suppliers in our commercial operations. In our production operations, we monitor through both bills and meters. Our companies monitor their water withdrawal quantities and report to Holding HSEQ Coordinatorship in a monthly periods.
Produced water associated with your metals & mining sector activities - total volumes	<Not Applicable>	<Not Applicable>
Produced water associated with your oil & gas sector activities - total volumes	<Not Applicable>	<Not Applicable>
Water withdrawals quality	76-99	We monitor the quality of water, used for drinking and sanitation purposes. In addition, the water used at the production process is also monitored. We periodically get samples and send them for microbiological and chemical analysis in the periods set by legal criteria and regulations. Apart from legal compliance, our Agri-Industry operations conduct lab analyses for certain quality of process water.
Water discharges – total volumes	76-99	We monitor water discharges from all our major operations. Our water discharge volume is monitored in real time due to regulation requirements by sensors. Our Samsun Plant has continuous waste water monitoring system that is directly connected to Ministry of Environment and Urbanization's system. The discharge parameters (pH, dissolved oxygen, flow rate, temperature, flow speed, conductivity) are monitored by legal authorities real time.
Water discharges – volumes by destination	76-99	We monitor water discharges from all our major operations including destination and treatment method. Our water discharge volume is monitored in specific destinations in real time due to regulation requirements by sensors.
Water discharges – volumes by treatment method	76-99	We monitor water discharges from all our major operations including destination and treatment method. Our water discharge volume is monitored in specific destinations in real time due to regulation requirements by sensors. For almost all activities we use our own water treatment facilities or discharge commercially directly to water treatment facilities.
Water discharge quality – by standard effluent parameters	76-99	Our fertilizer production facilities monitor standard effluent parameters for wastewater constantly. Our discharge quality is recorded in real time and reported to the Ministry of Environment. The real time reports can be reached 24/7 via web.
Water discharge quality – temperature	76-99	Our fertilizer production facilities monitor the temperature of waste coolant water to be in-line with regulations. Our discharge quality is recorded in real time and reported to the Ministry of Environment. The real time reports can be reached 24/7 via web.
Water consumption – total volume	76-99	We monitor all of our water consumption. In our fertilizer operations where we use freshwater, we monitor our water consumption in real time. In our commercial and contracting operations, water consumption is monitored as same as water withdrawals.
Water recycled/reused	76-99	We monitor all our recycled/reused water. We demineralise and reuse water in our agri-industry operations and monitor in real time.
The provision of fully-functioning, safely managed WASH services to all workers	76-99	We provide all our employees with fully functioning WASH facilities.

**W1.2b**

**(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?**

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	114605.4	Lower	Our total water withdrawals decreased %14 compared to 2016. This is because of cold stop happened in our Samsun facility. In Samsun facility, we use huge amount of seawater (%93 of total water withdrawal). Therefore cold stops of Samsun plant directly affect our water withdrawals and discharges. We expect our future water withdrawals to increase in line with our business growth plans.
Total discharges	108096.55	Lower	Our total water discharges decreased %15 compared to 2016. This is because of cold stop/ scheduled stop in our Samsun plant. In Samsun, we use huge amount of seawater (%93 of total water withdrawal). Therefore scheduled stops of Samsun plant directly affect our water withdrawals and discharges. We expect our future water discharges to increase in line with our business growth plans.
Total consumption	6508.86	About the same	Our water consumption is around %1 higher compared to 2016. We started to monitor our water quantities systematically since 01-01-2017 in all projects and workplaces. The reason of this slight increase is because of systematic monitoring of the water at all companies. Our W=D+C values match up because we do not consider reused/recycled water as part of total consumption.

**W1.2d**

**(W1.2d) Provide the proportion of your total withdrawals sourced from water stressed areas.**

	% withdrawn from stressed areas	Comparison with previous reporting year	Identification tool	Please explain
Row 1	99	About the same	WRI Aqueduct	We use WRI'S Aqueduct tool due to its ease of use and data availability. We enter all our coordinates to the tool. Almost all our operations in Turkey are listed as either Medium to High Risk with Baseline Water Stress Levels between 40-80% or more than 80%. We have some locations near the sea where water data is not available so we therefore decided to enter 99%. Our total water withdrawals decreased %14 compared to 2016. This is because of cold stop/ scheduled stop in our Samsun Plant happened in 2017. Samsun Plant is the most critical facility for our water data. Because %96 of total water withdrawals comes from Samsun Plant and %93 of total water withdrawals is seawater. Therefore scheduled stops affect our water data very much.

**W1.2h**

**(W1.2h) Provide total water withdrawal data by source.**

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	667.32	Much higher	TİTAŞ (Tekfen Construction) withdraws water from rivers, wells, lakes and third parties based on projects' conditions and requirements. In 2017, water withdrawn from rivers and wells in the TANAP Pipeline project rose because of hydro test activities of the pipes. This is the main reason of the increase in 2017. Total km of pipeline was 513 km, and pipe diameter was 56" (142.24 cm). Withdrawal of fresh surface water depends on Tekfen Construction's project activities. Therefore we can't say exact trends for the future.
Brackish surface water/seawater	Relevant	106110.99	Lower	We use seawater only in the Samsun plant of Toros Tarım (Agri-Industry). Seawater is used in the Sulfuric Acid Unit for cooling, production of demineralized water and washing in the Phosphoric Acid Unit. The reason of decrease in seawater usage is because of cold stop in Samsun facility. %96 of total water withdrawals comes from Samsun Plant and %93 of total water withdrawals is seawater. Therefore scheduled stops affect our water data very much. Withdrawal of brackish surface water/ seawater depends on Samsun Plant's production capacity. We can expect an increase this quantity in the future.
Groundwater – renewable	Relevant	4222.57	About the same	Renewable groundwater is used in Toros Tarım Mersin and Ceyhan Facilities. We use renewable groundwater for cleaning, toilets, drinking etc. in social facilities, guesthouses, irrigation, fire lines, site cleaning, docking and dust repression in stock areas. Usage does not change much year on year. We don't expect any increase of this quantity in the future.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	We do not use non-renewable groundwater in any of our operations.
Produced water	Relevant	3371.77	Higher	We reuse the water that is condensed during steam production in the Steam Turbine Generator in Toros Tarım Mersin and Samsun facilities. The electricity production was higher compared to the previous year. That is the reason of this difference. We can expect an increase this quantity in the future.
Third party sources	Relevant	232.76	Higher	Tekfen Real Estate's Hep İstanbul Project's works needed more water for tests, cleaning of the houses and the other finishing activities. The other reason was the tests performed at Tekfen Manufacturing (TİMAS)'s project. TİMAS is manufacturing and constructing storage tanks, spherical tanks that needs huge amount of water during hydrostatic tests. We have already launched water management initiatives. Therefore we can expect decrease withdrawal from third party sources in the future.

**W1.2i**

**(W1.2i) Provide total water discharge data by destination.**

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	748.52	Much higher	In 2017, water was withdrawn from rivers and wells in the TANAP Pipeline project that reached hydro test stage to test the pipes. This withdrawn water was discharged simultaneously. This is the main reason of the increase in 2017. Total km of pipeline was 513 km, and pipe diameter was 56" (142.24 cm).
Brackish surface water/seawater	Relevant	107179.9	Lower	We use seawater only in the Samsun facility of Toros Tarım (Agri-Industry). Seawater is used in the Sulfuric Acid Unit for cooling, production of demineralized water and washing in the Phosphoric Acid Unit. The reason of decrease in seawater usage is because of cold stop in Samsun plant. %96 of total water withdrawals comes from Samsun Plant and %93 of total water withdrawals is seawater. Therefore scheduled stops affect our water data very much. The withdrawn seawater is discharged wholly.
Groundwater	Relevant	3.6	About the same	There is no change compared to 2016.
Third-party destinations	Relevant	165.53	Much higher	Tekfen Construction generally builds and operates its own waste water treatment plants where municipal infrastructure is inadequate or insufficient. On the other hand, because of the project conditions Tekfen Construction generally used third party destinations, such as Client's and/or Owner's waste water treatment systems in Tanap Compressor Stations Project and Star Aegean Refinery Project in 2017.

## W1.2j

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### (W1.2j) What proportion of your total water use do you recycle or reuse?

	% recycled and reused	Comparison with previous reporting year	Please explain
Row 1	Less than 1%	About the same	During energy production from waste heat recovery, we first demineralize the water. Some of the demineralized water is condensed and re-used. We produced about the same amount of energy from waste heat in 2017 compared to 2016. Our Samsun and Mersin facilities reuse 3,500 m3/day and 600 m3/day of water respectively. We expect an increase in these values as we increase our Agri-Industry business. These recycled and reused water quantities are very high. On the other hand, huge seawater withdrawn and discharge quantity of Samsun Plant decreased recycled or reused rate to 1%. We have issued Water Policy and we have started to manage water more systematically. Water Policy is signed by our CEO and water management related principles and commitments are shared by this Policy. "Implementation of programmes to reduce water withdrawal, reuse water and use alternative water resources," "Build and operate treatment plants, where municipal infrastructure is inadequate or insufficient" are some of the principles that shall be complied by our Group Companies. Therefore we expect a continual increase of % recycled and reused water in the future.

## W-CH1.3

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### (W-CH1.3) Do you calculate water intensity for your activities in the chemical sector?

No, but we intend to do so within the next two years

## W1.4

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### (W1.4) Do you engage with your value chain on water-related issues?

Yes, our customers or other value chain partners

## W1.4c

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### (W1.4c) What is your organization's rationale and strategy for prioritizing engagements with customers or other partners in its value chain?

Our Agri-Industry group produces fertilizers and priorities engagements with customers in order to teach them proper fertilizer use. In addition Toros Tarım has 1246 dealers and sales points. Therefore Toros Tarım engages with its dealers, sales points and farmers. We make sure that our customers can produce most efficiently from their crops/area. We have launched a "Correct and Balanced Fertilizer Use Project". We show farmers what can be achieved through correct use of fertilizers by comparing to their regular fertilizing methods.

Our farmer training programs have been running since 1980s and we allow our customers to maximize their crop potentials from unit areas, making sure optimal water use and product efficiency is achieved. We supplement these trainings via Farmer Training Animations. Our measure of success is maximized product from crops/area.

By training our customers (farmers) and dealers we make sure they maximize their production while using water efficiently. If water availability drops in an area due to climate change and irresponsible use of water, our fertilizer sales will go down. Therefore it is very important for us to train and raise the awareness our customers and dealers for the best ways to use our products.

## W2. Business impacts

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### W2.1

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**(W2.1) Has your organization experienced any detrimental water-related impacts?**

Yes

#### W2.1a

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**(W2.1a) Describe the water-related detrimental impacts experienced by your organization, your response, and total financial impact.**

**Country/Region**

Turkey

**River basin**

Other, please specify (Marmara)

**Type of impact driver**

Physical

**Primary impact driver**

Inadequate infrastructure

**Primary impact**

Impact on company assets

**Description of impact**

Our HEP Istanbul project experienced flooding due to inadequate municipality infrastructure. Finishing works, floor coverings, electrical infrastructure, fire system, CCTV, mechanical installations, elevator system, landscape were affected by the flooding. This incident caused the delivery of the houses to be delayed that affected our reputation negatively.

**Primary response**

Infrastructure maintenance

**Total financial impact**

500000

**Description of response**

We first got in contact with the local municipality and asked them to take necessary actions to prevent similar flooding. After no action took place by the municipality, we started to make improvements in the infrastructure ourselves to prevent similar events in the future.

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### W2.2

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**(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?**

No

## W3. Procedures

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### W-CH3.1

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**(W-CH3.1) How does your organization identify and classify potential water pollutants associated with its activities in the chemical sector that could have a detrimental impact on water ecosystems or human health?**

Our fertilizer plants have certified Environmental Management System in parallel to ISO 14001 Environmental Management System Standard. We conduct environmental risk assessments. We identify environmental aspects including water pollutants, calculate relevant risk levels, determine mitigation/ control measures and follow up the actions taken. When calculating risk levels, we identify environmental impacts, probability and severity of the impacts and calculate the risk by multiplying probability and severity of the impact.

Tekfen prevents of pollution to land and water during implementation of its activities. All necessary precautions are taken to prevent the pollution of surface waters and groundwater resources in the vicinity of all Tekfen sites. The following general measures are adopted to minimize potential adverse impacts on surface and ground waters:

- If feasible, the first alternative is to build a Waste Water Treatment Plant. If it is not feasible to provide a Waste Water Treatment Plant, septic tanks should be used.
- All discharges to surface and ground waters, including effluents from wastewater treatment plants, will meet applicable water discharge standards.
- Mobile plant will be regularly maintained in accordance with the manufacturer's guidance.
- The appropriate approvals will be obtained to discharge water from the site, including discharge of test water from pipeline hydro testing.
- Fueling, washing or maintenance of plant or machinery will not occur in, over or adjacent to a drain or watercourse or in areas where high-level groundwater or unconfined aquifer conditions prevail.

**W-CH3.1a**

**(W-CH3.1a) Describe how your organization minimizes adverse impacts of potential water pollutants on water ecosystems or human health. Report up to ten potential pollutants associated with your activities in the chemical sector.**

Potential water pollutant	Value chain stage	Description of water pollutant and potential impacts	Management procedures	Please explain
All kinds of liquid hazardous substances can be classified as potential water pollutant	Direct operations	All kinds of hazardous substances can be classified as water pollutants. Ground water pollution and soil pollution are the main potential impacts of hazardous substances.	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Providing best practices instructions on product use	Tekfen controls exposures to hazardous substances to protect both employees and others who may be exposed from work activities. Tekfen evaluates the chemicals and their effects and also assesses the hazards and risks. The use, handling or storage of a hazardous substance shall not be permitted in a workplace unless the product carries a label and a Safety Data Sheet (SDS) meet the requirements of the regulations and unless the worker has received the training and information required to carry out the work. All chemicals brought on site are tracked. Tracking of chemicals are continuous process followed from acquisition, through storage and use, to final disposal. All hazardous materials including chemical wastes are stored in a manner that reduces the risk of worker exposure, spills and fire accidents. Chemicals are stored in clearly designated storage areas which are contained, secured, illuminated, well-ventilated, inspected and maintained. All hazardous materials are segregated and stored according to their chemical properties. Segregation could be by distance, by interspersing with other goods of low hazard, by inert substances or even a true physical barrier. If a hazardous substance / product is delivered without an SDS, the product is transported to the quarantine area assigned within the chemical storage area. Before handling any hazardous chemicals supervision must ensure all precautions identified in SDS have been communicated to the personnel performing the task and that all PPE requirements for the chemical have been met. Hazardous waste containers being prepared for off-site disposal are accumulated in a designated storage area that is designed with secondary containment and proper ventilation. Employees are trained for all requirements of Hazardous Materials Management.

**W3.3**

**(W3.3) Does your organization undertake a water-related risk assessment?**

Yes, water-related risks are assessed

**W3.3a**

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**(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.**

**Direct operations**

**Coverage**

Full

**Risk assessment procedure**

Water risks are assessed as part of an enterprise risk management framework

**Frequency of assessment**

Six-monthly or more frequently

**How far into the future are risks considered?**

6 to 10 years

**Type of tools and methods used**

Tools on the market  
Enterprise Risk Management  
Databases  
Other

**Tools and methods used**

WRI Aqueduct  
WWF-DEG Water Risk Filter  
ISO 31000 Risk Management Standard  
Regional government databases  
Internal company methods  
External consultants  
National-specific tools or standards

**Comment**

**Supply chain**

**Coverage**

Full

**Risk assessment procedure**

Water risks are assessed as part of an enterprise risk management framework

**Frequency of assessment**

Annually

**How far into the future are risks considered?**

6 to 10 years

**Type of tools and methods used**

Tools on the market  
Databases  
Other

**Tools and methods used**

WRI Aqueduct  
WWF-DEG Water Risk Filter  
Regional government databases  
Internal company methods  
External consultants  
National-specific tools or standards

**Comment**

## Other stages of the value chain

### Coverage

Full

### Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

### Frequency of assessment

Six-monthly or more frequently

### How far into the future are risks considered?

6 to 10 years

### Type of tools and methods used

Tools on the market  
Enterprise Risk Management  
Databases  
Other

### Tools and methods used

WRI Aqueduct  
WWF-DEG Water Risk Filter  
ISO 31000 Risk Management Standard  
Regional government databases  
Internal company methods  
External consultants  
National-specific tools or standards

### Comment

## W3.3b

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**(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?**

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Our projects/ workplaces draw necessary water from the nearest and suitable basins/ catchments. Therefore water availability is always considered by our projects/ workplaces at a basin/ catchment level. Therefore water supply capacity of the basins/ catchments are taken into consideration. Before water withdrawals from a freshwater supplies, we also analyse the current flow regime and we don't withdraw more than 10% of the flowrate. In addition, our Agri-Industry operations use freshwater in their operations and draw the necessary freshwater from dam reservoirs. While conducting risk assessment, we assess water availability and changes at a basin/catchment level through use of regional government databases, WWF-DEG Water Risk Filter and WRI Aqueduct for risk assessments.
Water quality at a basin/catchment level	Relevant, always included	Withdrawn and discharged water quality at basin/ catchment level is always taken into consideration during risk assessments. Both water available for use and waste water quality is analysed in our projects/ plants. We conduct microbiological and chemical analyses periodically specified in local regulation and/ or project requirements. As an example, in our Tanap pipeline project, we monitored water quality in the basin at all times and didn't allow machinery to be used in the rivers. We always store our hazardous materials in watertight containers and have spill response plans ready. Potable water quality in camps and offices are also analysed periodically. We also have waste water treatment facilities in our camps and waste water discharge parameters are also measured, monitored and analysed periodically. We use internal company methods (Environmental Risk Assessment in parallel to ISO 14001 Standard) to assess water quality at a basin/ catchment level.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	We have certified Environmental Management System in parallel to ISO 14001:2015 Standard which defines environment as surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships. Surroundings can extend from within an organization to the local, regional and global system and surroundings can be described in terms of biodiversity, ecosystems, climate or other characteristics. Since we have certified and audited Environmental Management System, we determine external and internal issues and stakeholders that are relevant to our work scope and that affect our ability to achieve the intended outcomes of the environmental management system. Stakeholder conflict can affect our facilities and we identify all kinds of risks that can affect us. Projects' Environmental and Social Impacts Assessments and other related requirements; such as Biodiversity Action Plan, are taken into consideration during planning and implementation of construction projects. As an example, in our TANAP project, we considered the local community (downstream) and never withdrawn more than 10% of the river flow volume. We did not cut down any trees, transported them to different locations. Ecosystem and habitat are always considered and Compliance to the Projects' environmental requirements is assessed and audited by our internal auditors and third party companies. Stakeholder conflicts concerning water resources at a basin/ catchment level is assessed by using internal company methods (Environmental Risk Assessment in parallel to ISO 14001 Standard).
Implications of water on your key commodities/raw materials	Relevant, always included	One of our key commodities is fertilizer. Water scarcity and water stress in important for our customers (farmers). Without enough water supply, our customers (farmers) would not be able to buy our product (fertilizer). Therefore water availability's impact on our product is apparent. This is why we train our customers (farmers) and dealers on the most appropriate uses of our fertilizer products, making sure they can grow their crops with maximal potential while using optimal amounts of water. Implications of water on our key commodities are assessed by using our Corporate Risk Management system. During the assessment, we use also regional government databases, WWF-DEG Water Risk Filter and WRI Aqueduct.
Water-related regulatory frameworks	Relevant, always included	Tekfen identifies and complies with the local regulatory and legislative requirements applicable to work scope. The revisions of the legal and other requirements are followed up and relevant parties are informed about changes. Tekfen periodically evaluates its compliance with applicable legal and other requirements and keep records of the results of periodic evaluation. Compliance to regulatory framework is our priority that is stated on our Policies and Tekfen values. Therefore water-related regulatory frameworks are always considered in our facilities. As an example, we conducted Environmental Impact Assessments, implemented Biodiversity Action Plans and run our activities according to certified ISO 14001 Environmental Management Systems in our Tanap Pipeline Project. In Toros Tarım Samsun Plant, we continuously monitor our water discharges in terms of volume, temperature and quality in order to stay within the thresholds set by regulations. Compliance to water-related regulatory framework is assessed by using internal company methods (Environmental Risk Assessment in parallel to ISO 14001 Standard).
Status of ecosystems and habitats	Relevant, always included	We have certified Environmental Management System in parallel to ISO 14001:2015 Standard which defines environment as surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationships. Surroundings can extend from within an organization to the local, regional and global system and surroundings can be described in terms of biodiversity, ecosystems, climate or other characteristics. Since we have certified and audited Environmental Management System, we always consider the status of ecosystem and habitats. During the risk assessments, we use WWF-DEG Water Risk Filter and WRI'S Aqueduct tools. These tools give us the water-related future risks at our facilities and their immediate environment. As examples, in our TANAP project, we did not cut down any trees, always transported them to different locations. Ecosystem and habitat are always considered and Compliance to the Projects' environmental requirements are assessed and audited by our internal auditors and third party companies. During fish spawning period, we stopped construction activities and no machinery and equipment were allowed to enter rivers. We used internal company methods in Tanap Pipeline Project.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	The availability of WASH facilities at premises is of critical importance. WASH services at our projects and workplaces are important in preventing infections and other diseases. In addition, the availability of WASH facilities at the workplace is fundamental so that people are able to work in a healthy and safe environment. We have documented and certified Health and Safety Management System in parallel to ISO 45001 Occupational Health and Safety Management System Standard. One of our goals is to provide healthy and safe premises for all our employees and third parties. Therefore access to fully-functioning safely managed WASH services for all times are taken into consideration in water related risk assessments by using internal company methods (Health and Safety Risk Assessments in parallel to ISO 45001 Standard). WRI Aqueduct, WWF-DEG Water Risk Filter and regional government databases are being used to assess the accessibility of WASH facilities in the future.
Other contextual issues, please specify	Please select	

## (W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	Farmers are major customer group of Tekfen's Agri-Industry operations. This is why we train our customers (farmers) on the most appropriate uses of the fertilizers, making sure they can grow their crops with maximal potential while using optimal amounts of water. For our Real Estate operations (development and management), we consider our tenants' access to clean and adequate water both in the design and management process. Tekfen Real Estate develops and builds LEED certified green buildings.
Employees	Relevant, always included	It is very important for us to provide our employees with fully-functioning, safely managed WASH services for all times. Water we use in our camps and offices are tracked and analysed periodically. Waste water in our camps are treated and discharge quality are continuously monitored. We also give importance to the protection of natural resources and apart from trainings and posters about water consumption, we are taking measures such as converting to waterless urinals. This way we can make sure our employees use water as efficiently as possible.
Investors	Relevant, always included	Investors' expectations of Tekfen are always included in risk and opportunity assessments. Our fertilizer production facilities operate in line with the regulations. Large construction projects are especially important when it comes to investor requests. IFIs have environmental and social standards and we have to operate within their standards. As an example in our Tanap pipeline project, we were in line with Equator Principles. The project's Environmental and Social Impact Assessment and Biodiversity Action Plans were followed strictly. In addition, by participating in CDP Water Security Programme this year, we are sharing our water data and our approach of managing water with our investors. We established a Sustainability Department and our target is to publish the Sustainability Report in 2019, making sure all water-related issues are shared with the stakeholders.
Local communities	Relevant, always included	Local communities are always taken into consideration in our risk assessments. Our contracting projects always include stakeholder concerns at a basin/catchment level. This is important both due to legal regulations and reputation. Environmental Impact Assessments are conducted for our projects and Environmental and Social Action Plans are implemented and tracked. As an example, in our Tanap Pipeline Project, we considered the locals and didn't draw water more than 10% of the river flow volume. We did not cut down any trees, always transported them to different locations.
NGOs	Relevant, always included	Tekfen follows NGOs' activities closely. We are both a founding member and a member of some NGOs. Therefore we consider NGOs in our risk assessments. We are a member of the Turkish Sustainable Development Business Council (SKD) and the founding member of Turkish Industry and Business Association (TÜSİAD) which are in the forefront when it comes raising awareness and working with lawmakers on climate change and water issues in Turkey. We are also the founding member of Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats (TEMA) and Environmentally Friendly Green Building Association (ÇEDBİK). It is very important for us to align our strategies when it comes to climate change and water with these institutions.
Other water users at a basin/catchment level	Relevant, always included	We consider other water users in the areas where we do business during water-related risk assessments. If we are working near the river or when we are discharging the wastewater to wetlands, we pay attention to the water quality and quantity. If we draw water from the river, the amount of water we draw cannot be more than 10% above the river's flow volume. If we discharge the wastewater to the wetlands, the wastewater quality complies with the discharge limits stated in the relevant regulation. In order to protect underground water quality, machinery and equipment repair and maintenance are carried out in suitable/ impermeable areas. Hazardous chemicals are stored in banded and impermeable areas against any leakage or spillage.
Regulators	Relevant, always included	Policy makers, current and potential water-related regulations are taken into account. Well water is being used in Mersin and Ceyhan plants and we have active well permit licenses. On the other hand renewal of the licenses is critical for the operations. In Samsun, we use a high amount of seawater and we draw necessary fresh water from a dam by the permit of the General Directorate of State Hydraulic Works (DSİ). If we can't draw enough water from the dam, our Samsun operations might stop. Therefore engagement with regulators is important to prevent this kind of risk in fertilizer plants. Tekfen is a member of Turkish Sustainable Development Business Council (SKD) and Turkish Industry and Business Association (TÜSİAD) which have active engagements with policymakers. We are participating in the water-related workshops of SKD and we also want to play an active role in TÜSİAD's climate and water-related working groups.
River basin management authorities	Not relevant, explanation provided	The legal background for river basin management authorities is lacking in Turkey. Currently, there are seldom limitations. However, we are following the developments in this area closely. When the legal background is established, we will include river basin management authorities and their expectations in our risk assessments. But we think that the legislation related to watershed management will increase in the future and the risks related to water will be managed more effectively on watershed basis.
Statutory special interest groups at a local level	Relevant, always included	The General Directorate of State Hydraulic Works (DSİ) is the main authority for surface and groundwaters of Turkey. Approval for abstraction from and discharge to the points are obtained from the DSİ Regional Branches. Moreover, Provincial Environmental Directorates are notified about hydrostatic test discharge points and approval letters for discharge are sent to each directorate with proof of water quality analysis results if they require so. Ad-hoc meetings are performed with DSİ regional branches. Therefore we consider them at a local level.
Suppliers	Relevant, always included	We haven't any supplier that has been affected by water related impacts yet. But according to WEF Global Risks Report, water crisis is one of the top 10 risks in terms of likelihood and impact. Therefore it is clear that some of our suppliers will be affected by water crisis in the future. We are working to identify critical suppliers in terms of water and address this risk in our business continuity plans.
Water utilities at a local level	Relevant, always included	Municipal, industrial and private water suppliers and water utilities that treat wastewater are also considered at a local level. In our facilities, we draw some of the water from municipal suppliers and some of them from private water suppliers. If there is any problem with the suppliers we can't provide enough and good quality water to our operations and employees. Therefore local water resources are evaluated and we consider the risk of interruption of water supply. We have recently issued our Water Policy. "Build and operate treatment plants, where municipal infrastructure is inadequate or insufficient" is stated on the policy and this is an example of how we consider water utilities at local level.

	Relevance & inclusion	Please explain
Other stakeholder, please specify	Relevant, always included	During abstraction and discharge of water, Tekfen also considers downstream stakeholders in the affected areas. As an example, in our Tanap pipeline project water abstraction rate was set to 10% of the river's flow rate in order not to distort the hydrological regime. No chemical treatment was used during hydrostatic testing period to avoid chemical release to the environment. Tekfen ecologist/environmental inspectors attended the activity during water abstraction and discharge. Water was cascaded in order not to deteriorate the habitat integrity and not to cause surplus turbidity. Water discharge period was prolonged in order to decrease the flow rate. Water was oxygenated by physical means before discharge. The physicochemical characteristics of the discharged water (i.e. temperature, pH, dissolved oxygen, conductivity etc.) were measured by hand-held kits to make sure the discharged water quality was within the acceptable limits of recipient environment.

### W3.3d

#### **(W3.3d) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.**

In Tekfen Holding, companies' upper management and all employees are responsible for effective management of risks. Risks are managed by companies and are monitored by the Holding. All companies are responsible for determining, monitoring and make decisions and periodically report the risks to upper management. Corporate Risk Management specifically documents risks as Strategic, Operational, Financial, Compliance and Reputational Risks. Water related risks are considered both in Corporate Risk Management (Enterprise Risk Management) system in parallel to ISO 31000 Risk Management Standard and internal environmental risk management system in parallel to ISO 14001 Environmental Management System Standard. During these risk assessments, we use WRI Aqueduct, WWF-DEG Water Risk Filter, regional government databases to define risk probabilities and risk impact levels. We identify, assess and respond to our short-term water related risks through our ISO 14001 Environmental Management System. Our medium and long term water risks are covered by our Corporate Risk Management (CRM) System. Toros Agri and Tekfen Construction have certified EMS in parallel ISO 14001. Therefore, water related risks are being assessed by using internal company methodology since 2004. The other tools and methods have been in use since last year.

The first step of risk management we identify risk, determine root causes of the risk, define risk type, determine related risks and the responsible owner. At the second stage, we determine gross impact, gross probability and gross risk score (multiplying gross impact and gross probability). The third stage consists of determination of how to address the risk. Actions and the costs of actions are determined in the fourth stage by root cause analyses and detailed risk reduction methods/improvement of controls. The tracking of these actions make up the fifth step.

### W4. Risks and opportunities

#### W4.1

##### **(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes, both in direct operations and the rest of our value chain

#### W4.1a

#### (W4.1a) How does your organization define substantive financial or strategic impact on your business?

We consider financial impact is expense or fall in revenue arising out of a disaster, change in market conditions, failure of a product, or other events. If the financial impact is more than >5% of EBITDA (singular impact) or >2.5% of EBITDA (continuous impact), this situation is called Substantive Financial Impact.

We consider 5 main risk impacts on our business; impacts on financial target, impacts on reaching strategic goals, impacts on reputation, impacts on operations (e.g. sudden work/production halts and long term low performance), impacts on compliance (e.g. non-compliance with regulations, activities that do not correspond to business ethics, legal issues). Like substantive financial impact, we have also defined other risk impact's thresholds. For example, we consider substantive strategic impact as impacts on management, planning and important initiatives. Impact level 5 here is considered as having significant impacts on strategic plans and execution, meaning a need in very important changes in strategy.

These definitions are applied to both our direct operations and supply chain. While assessing our operational, compliance and reputational risks, we consider also our supply chain and production.

Our screening process for plants that could generate substantive change is as follows: We identify plants indicated as high (40-80%) or extremely high (> 80%) in terms of projected change in water stress (value in the year 2030 business as usual) results by using the WRI-Aqueduct Water Risk Atlas. Then we cross check whether these sites are considered strategic and/or if they account for more than >5% of EBITDA (singular impact) or >2.5% of EBITDA (continuous impact). If both criteria are met, then the risks faced by these plants can contribute to a substantive change in the business.

We have used this method on a scenario analysis on our Toros Tarım fertilizer plants. For example, Mersin Plant is in high risk area in terms of water security and the water related risks can affect the Plant's EBITDA more the 2.5%. So we have decided that Mersin Plant might have a substantial financial impact in the future.

#### W4.1b

##### (W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	3	1-25	We consider our Agri-Industry production facilities in Samsun, Mersin and Ceyhan to be exposed to water risks. While this represents a small number of facilities, approximately 27.6% of our revenue is based on these facilities.

#### W4.1c

##### (W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive impact on your business, and what is the potential business impact associated with those facilities?

###### Country/Region

Turkey

###### River basin

Other, please specify (Yesilirmak)

###### Number of facilities exposed to water risk

1

###### % company-wide facilities this represents

1-25

###### Production value for the metals & mining activities associated with these facilities

<Not Applicable>

**% company's annual electricity generation that could be affected by these facilities**

<Not Applicable>

**% company's global oil & gas production volume that could be affected by these facilities**

<Not Applicable>

**% company's total global revenue that could be affected**

1-25

**Comment**

This is Toros Tarım Samsun Plant.

---

**Country/Region**

Turkey

**River basin**

Other, please specify (Tarsus)

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

1-25

**Production value for the metals & mining activities associated with these facilities**

<Not Applicable>

**% company's annual electricity generation that could be affected by these facilities**

<Not Applicable>

**% company's global oil & gas production volume that could be affected by these facilities**

<Not Applicable>

**% company's total global revenue that could be affected**

1-25

**Comment**

This is Toros Tarım Mersin Plant.

---

**Country/Region**

Turkey

**River basin**

Other, please specify (Ceyhan)

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

1-25

**Production value for the metals & mining activities associated with these facilities**

<Not Applicable>

**% company's annual electricity generation that could be affected by these facilities**

<Not Applicable>

**% company's global oil & gas production volume that could be affected by these facilities**

<Not Applicable>

**% company's total global revenue that could be affected**

1-25

**Comment**

This is Toros Tarım Ceyhan Plant.

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**(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.**

**Country/Region**

Turkey

**River basin**

Other, please specify (Yesilirmak, Ceyhan, Tarsus, Marmara)

**Type of risk**

Regulatory

**Primary risk driver**

Higher water prices

**Primary potential impact**

Increased production costs

**Company-specific description**

Increase in costs due to the potential increase in the price of water. Toros Tarim uses water in the production process and increasing water stress in Turkey might impact our bottom line if water prices are increased a lot.

**Timeframe**

4 - 6 years

**Magnitude of potential impact**

Medium

**Likelihood**

Likely

**Potential financial impact**

8500000

**Explanation of financial impact**

A large portion of Tekfen's water footprint is from Toros Tarim. The freshwater volume withdrawn from a dam and wells in 3 production facilities is 4,012,176 m3. We are currently not paying any fees for water withdrawn from these sources. However, due to water stress, this may change in the future. If we base the prices on water bills in 2017 (about 7.95 TRY/m3), we would have a 8.46 million USD liability (31.9 million TRY).

**Primary response to risk**

Increase investment in new technology

**Description of response**

Water consumption in fertilizer production facilities is monitored closely. In Samsun plant, we replaced the membrane in the demi water unit, increasing the regeneration process to 4 days from 2 days, achieving almost 50% water savings from reusing and washing water loss. A new project was started for collecting and reusing all surrounding waters in the Sulfuric Acid Unit and demineralization unit in Samsun plant. Current air compressors in Samsun use a significant amount of water for cooling. By the end of 2018, we are going to replace these compressors with the new ones that won't require cooling water. In addition, the establishment of a new wastewater treatment plant of Mersin Plant was included in the investment plan of Toros Tarim. The facility is planned to be operational in 2020. Tekfen Construction has replaced urinals with waterless ones and achieved c. 1,650 m3/year water savings.

**Cost of response**

10730000

**Explanation of cost of response**

Total investment amount for water efficiency projects (c. USD 340,000.) and new wastewater treatment plant (c. USD 10,350,00) in Toros Tarim was around USD 10,690,000. In addition, investments in waterless urinals and other renovations (water pipe replacement, water storage renovation, security valve replacement, mechanical shaft seal replacements, automated water supply systems) amounted to approximately 40,000 USD.

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**Country/Region**

Turkey

**River basin**

Other, please specify (Yesilirmak, Tarsus)

**Type of risk**

Physical

**Primary risk driver**

Increased water stress

**Primary potential impact**

Reduction or disruption in production capacity

**Company-specific description**

Increased water stress may hamper our fertilizer production directly as Toros Tarım uses large amounts of water to produce fertilizer.

**Timeframe**

4 - 6 years

**Magnitude of potential impact**

Medium-high

**Likelihood**

About as likely as not

**Potential financial impact**

30000000

**Explanation of financial impact**

According to WRI Aqueduct Water Risk Atlas projected change in water stress (Value in the year 2020 business as usual ) is high (40-80%) and extremely high (more than 80%) in areas where we operate. Due to the effect of the increase in water stress, fertilizer production can be adversely affected. If our production decreases % 5, Toros Tarım revenue will result in 29.7 million USD impact based on 2017 numbers.

**Primary response to risk**

Secure alternative water supply

**Description of response**

Toros Tarım generally draws fresh water from the wells. Only the fresh water requirement of our Samsun facility is drawn from the dam reservoir. In Samsun, 40 new wells have been opened and permissions have been taken against a problem that may be experienced in the dam reservoir. We have not used these wells since, but they are ready in case of a water emergency. In Toros Tarım Mersin Plant, 5 new deep wells were opened and all are utilized except one.

**Cost of response**

760000

**Explanation of cost of response**

Investment amounts required to open the wells in Mersin and Samsun. The investment amounts includes: initial investments for the project (machinery, digging, labor etc.), permits, rents etc.

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**Country/Region**

Turkey

**River basin**

Other, please specify (Yesilirmak, Ceyhan, Tarsus,)

**Type of risk**

Reputation & Markets

**Primary risk driver**

Increased stakeholder concern or negative stakeholder feedback

**Primary potential impact**

Brand damage

**Company-specific description**

Toros Tarım also uses water at fertilizer production process. When Tekfen's total water consumption is examined, it is seen that most of the water is used at fertilizer production facilities. And Turkey is expected to be one of the countries most affected by the water crisis. If non-governmental organizations and other stakeholders do not consider Toros Tarım's water management to be effective and sufficient, the water related pressures may be increased on Toros Tarım that can seriously damage both Toros Tarım and Tekfen's brand reputation.

**Timeframe**

4 - 6 years

**Magnitude of potential impact**

Medium-high

**Likelihood**

About as likely as not

**Potential financial impact**

6000000

**Explanation of financial impact**

When we look at the relationship between the decline in brand value and the negative events that companies have experienced, we can see different financial effects depending on the seriousness of the event and the size of the company. We examine the reports prepared by Brand Finance in this regard and decide that the wrong water policies and the effect of water management on Toros Tarım will be a minimum of 1%. A 1% reduction in Toros Tarım revenues represents USD 5.94 million impact.

**Primary response to risk**

Adopt water efficiency, water re-use, recycling and conservation practices (Please refer to our Water Policy.)

**Description of response**

Tekfen is reporting to the CDP Water Security Program for the first time this year. During this study, water-related surveys and workshops we attended have shown us the importance of water management. We have decided to manage water-related issues more systematically. For this reason, first of all, we have published our Water Policy which was signed by our CEO. In the context of Enterprise Risk Management, we have identified our water-related risks and opportunities, we have included them in our risk inventories, defined responsibilities for mitigation measures and started to following actions. We have started to observe our water-related processes in our fertilizer production plants. We have started to replace our water-cooled compressors with air-cooled ones. On the policy, we have described in principle the reduction of water withdrawn, the reuse of water and the work to use alternative water resources. Another principle stated in the policy is to establish and operate a wastewater treatment plant where the local infrastructure is inadequate. We are going to increase awareness of water consumption by employees and other stakeholders via training, posters, campaigns etc. And we are going to improve cooperation with public institutions / organizations, establish closer relations with civil society organizations and support the collective activities. Tekfen is reporting to the CDP Water Security Program for the first time this year. During this study, water-related surveys and

**Cost of response**

1000000

**Explanation of cost of response**

Cost of wastewater treatment plants, maintenance and operational cost of cooling towers, maintenance and operational cost of water-related infrastructure.

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**W4.2a**

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**(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.**

**Country/Region**

Turkey

**River basin**

Other, please specify (Kizilirmak, Marmara, etc. Various in TR)

**Stage of value chain**

Use phase

**Type of risk**

Physical

**Primary risk driver**

Drought

**Primary potential impact**

Disruption to sales due to value chain disruption

**Company-specific description**

According to WRI Aqueduct Water Risk Atlas, projected change in water stress (Value in the year 2020 business as usual ) is high (40-80%) and extremely high ( more than 80%) in areas where we operate. Therefore, farmers will be affected heavily because of water-related problems. The impact on agriculture due to water stress may result in a reduction of sales in solid fertilizers.

**Timeframe**

4 - 6 years

**Magnitude of potential financial impact**

High

**Likelihood**

Very unlikely

**Potential financial impact**

60000000

**Explanation of financial impact**

According to WRI Aqueduct Water Risk Atlas, projected change in water stress (Value in the year 2020 business as usual ) is high (40-80%) and extremely high (more than 80%) in areas where we operate. Therefore, farmers will be affected heavily because of water-related problems. The impact on agriculture due to water stress may result in a reduction of sales in solid fertilizers., A 10% reduction (around USD 59.4 million) in Toros Tarım revenues were considered based on 2017 figures.

**Primary response to risk**

Develop new products and/or markets

**Description of response**

An Research and Development Center was established in Toros Tarım. The aim is to develop new and innovative products that require less water. Special fertilizers, developed by Toros Tarım, are products that completely dissolve in water and are being used in conjunction with modern irrigation techniques such as drip and rain irrigation. Drip irrigation is becoming more and more common due to lack of enough water sources. Therefore we anticipate an increase in special fertilizer demand due to the increased adoption of modern irrigation techniques. Toros Tarım considers them a high potential product group. We have increased special fertilizer sales by 28% in 2017 compared to 2016.

**Cost of response**

715000

**Explanation of cost of response**

Approximately 715,000 USD was invested so far in Research and Development Center and new facilities for special fertilizer production.

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**W4.3**

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**(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes, we have identified opportunities, and some/all are being realized

W4.3a

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**(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.**

**Type of opportunity**

Markets

**Primary water-related opportunity**

Improved community relations (Educating our farmers )

**Company-specific description & strategy to realize opportunity**

Those who are the customers of Toros Tarım are critical in terms of water management. For this reason, farmers are being educated on how to use fertilizer properly and use water effectively. Toros Tarım gives great importance to farmers' awareness. To raise the farmers' awareness, Toros Tarım has prepared educational videos and shared with all interested parties. "Toros Farmer" application helps the farmers to make the most appropriate application of fertilizers. These kinds of efforts improve our relations with the communities. All kinds of training related to agriculture, provides a contribution to economic and quality produce in agricultural production. The increase in quantity and quality of produce yielded from a unit field helps our domestic economy as well as increasing the income of the producer. Toros Tarım, with this awareness, has been organizing nationwide "Farmer Training Meetings" continuously since the 1980's, when the company started its operations, to increase quality and hence contribute to farmer's wealth. In the fertilizer sector, farmer-training seminars, firstly and only applied by Toros Tarım, are organized throughout Turkey, in countless cities and districts, and open to everyone. In addition to the seminars, thanks to meetings at village cafes and TV programs, Toros Agri has reached over a hundred thousands of farmers until today. Toros is in close cooperation with regional agricultural organizations in relation to this matter.

**Estimated timeframe for realization**

Current - up to 1 year

**Magnitude of potential financial impact**

Low-medium

**Potential financial impact**

6000000

**Explanation of financial impact**

While it is inherently difficult to measure the impact in reputation, educating farmers for correct water use is very important for us. Because we do not give financial impacts that much importance when it comes to this, we only estimated a 1% increase in potential revenue based on 2017 numbers.

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**Type of opportunity**

Products and services

**Primary water-related opportunity**

Sales of new products/services

**Company-specific description & strategy to realize opportunity**

Toros Tarım is directly contributing in the achievement of goals such as increasing crop production per unit area, increasing quality of living for farmers and ensuring food and nutrient safety by providing adequate and high-quality nutrients needed by the rapidly increasing population of the world, all constituting the basis of the concept of sustainability in agriculture. A Research and Development Center has established in Mersin. Scientific studies aimed at meeting the demands and requirements of the sector will be conducted in such Research and Development Center that will be the first established in Turkey in this field. One of the goals of Research and Development Center is to develop new products that require less water. Special fertilizers, which Toros Tarım innovated and has a significant market share are products that completely dissolve in water and are used in conjunction with modern irrigation techniques such as drip and rain irrigation. Drip irrigation is becoming more and more common due to the necessity that water sources should be used more economically. We anticipate a large increase in special fertilizer demand due to the increased adoption of modern irrigation techniques and Toros Tarım considers them a high potential product group. We have increased special fertilizer sales by 28% in 2017 compared to 2016.

**Estimated timeframe for realization**

Current - up to 1 year

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### Magnitude of potential financial impact

Medium

### Potential financial impact

6000000

### Explanation of financial impact

Total fertilizer production of Toros Tarim was 1,947 thousand tonnes in 2017. Sales of special fertilizers made up 19 thousand tonnes of this. We are starting to produce our own special fertilizers which were imported previously. This makes c. 1% of our production capacity. A conservative 1% potential increase in revenue was considered for special fertilizers based on 2017 numbers.

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### Type of opportunity

Efficiency

### Primary water-related opportunity

Cost savings

### Company-specific description & strategy to realize opportunity

In Toros Tarim Samsun Plant, we replaced the membrane in the demi water unit, increasing the regeneration process to 4 days from 2 days, achieving almost 50% water savings from reusing and washing water loss. A new project was started for collecting and reusing all surrounding waters in the Sulfuric Acid Unit and demineralization unit in Samsun Facility. New compressors were purchased for cooling water in Samsun Facility.

### Estimated timeframe for realization

Current - up to 1 year

### Magnitude of potential financial impact

Low

### Potential financial impact

2000000

### Explanation of financial impact

By these mitigation measures, we have calculated to reach approximately 1,020,000 m<sup>3</sup> water savings. Average water bills received amounted to c. 7.95 TL/m<sup>3</sup> in 2017. Conversion to USD based on the 31.12.2017 currency results in c. 2 mio USD potential impact.

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### Type of opportunity

Efficiency

### Primary water-related opportunity

Cost savings

### Company-specific description & strategy to realize opportunity

We have replaced urinals in Tekfen Contracting and Tekfen Tourism's HQ buildings with waterless ones. One waterless urinal saves 150 m<sup>3</sup> of water/year.

### Estimated timeframe for realization

Current - up to 1 year

### Magnitude of potential financial impact

Low

### Potential financial impact

4300

### Explanation of financial impact

We replaced 11 urinals that will save 150 m<sup>3</sup> of water/year. Based on December 2017 household water prices in Turkey and converting to USD results in savings around 4,300 USD/year. Increasing water prices will only increase our savings.

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## W5. Facility-level water accounting

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## W5.1

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(W5.1) For each facility referenced in W4.1c, provide coordinates, total water accounting data and comparisons with the previous reporting year.

**Facility reference number**

Facility 1

**Facility name (optional)**

Toros Tarım Samsun Plant

**Country/Region**

Turkey

**River basin**

Other, please specify (Yesilirmak)

**Latitude**

41.241734

**Longitude**

36.457503

**Primary power generation source for your electricity generation at this facility**

<Not Applicable>

**Oil & gas sector business division**

<Not Applicable>

**Total water withdrawals at this facility (megaliters/year)**

109489.61

**Comparison of withdrawals with previous reporting year**

Lower

**Total water discharges at this facility (megaliters/year)**

106206.59

**Comparison of discharges with previous reporting year**

Lower

**Total water consumption at this facility (megaliters/year)**

3283.02

**Comparison of consumption with previous reporting year**

About the same

**Please explain**

We implemented cold production halts in November and December, 2017. Our Samsun facility uses brackish seawater for cooling purposes and the cold production halts affected these uses the most.

---

**Facility reference number**

Facility 2

**Facility name (optional)**

Toros Tarım Mersin Plant

**Country/Region**

Turkey

**River basin**

Other, please specify (Tarsus)

**Latitude**

36.819615

**Longitude**

34.673121

**Primary power generation source for your electricity generation at this facility**

---

<Not Applicable>

**Oil & gas sector business division**

<Not Applicable>

**Total water withdrawals at this facility (megaliters/year)**

3132.26

**Comparison of withdrawals with previous reporting year**

Lower

**Total water discharges at this facility (megaliters/year)**

842.79

**Comparison of discharges with previous reporting year**

Lower

**Total water consumption at this facility (megaliters/year)**

2289.47

**Comparison of consumption with previous reporting year**

Lower

**Please explain**

Our production was about the same compared to last year and there were not unplanned events. The % amount was very close to the 5% threshold.

---

**Facility reference number**

Facility 3

**Facility name (optional)**

Toros Tarım Ceyhan Plant

**Country/Region**

Turkey

**River basin**

Other, please specify (Ceyhan)

**Latitude**

36.92355

**Longitude**

35.983394

**Primary power generation source for your electricity generation at this facility**

<Not Applicable>

**Oil & gas sector business division**

<Not Applicable>

**Total water withdrawals at this facility (megaliters/year)**

873.05

**Comparison of withdrawals with previous reporting year**

Higher

**Total water discharges at this facility (megaliters/year)**

130.51

**Comparison of discharges with previous reporting year**

Higher

**Total water consumption at this facility (megaliters/year)**

742.54

**Comparison of consumption with previous reporting year**

Higher

**Please explain**

Our production was about the same compared to last year and there were not unplanned events. The % amount was very close to

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the 5% threshold.

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## W5.1a

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(W5.1a) For each facility referenced in W5.1, provide withdrawal data by water source.

**Facility reference number**

Facility 1

**Facility name**

Toros Tarım Samsun Plant

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**

0

**Brackish surface water/seawater**

106110.98

**Groundwater - renewable**

0

**Groundwater - non-renewable**

0

**Produced water**

3371.76

**Third party sources**

6.86

**Comment**

---

**Facility reference number**

Facility 2

**Facility name**

Toros Tarım Mersin Plant

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**

0

**Brackish surface water/seawater**

0

**Groundwater - renewable**

3132.26

**Groundwater - non-renewable**

0

**Produced water**

0

**Third party sources**

0

**Comment**

---

**Facility reference number**

Facility 3

**Facility name**

Toros Tarım Ceyhan Plant

**Fresh surface water, including rainwater, water from wetlands, rivers and lakes**

0

---

**Brackish surface water/seawater**

0

**Groundwater - renewable**

873.05

**Groundwater - non-renewable**

0

**Produced water**

0

**Third party sources**

0

**Comment**

---

W5.1b

---

(W5.1b) For each facility referenced in W5.1, provide discharge data by destination.

**Facility reference number**

Facility 1

**Facility name**

Toros Tarım Samsun Plant

**Fresh surface water**

0

**Brackish surface water/Seawater**

106206.6

**Groundwater**

0

**Third party destinations**

0

**Comment**

---

**Facility reference number**

Facility 2

**Facility name**

Toros Tarım Mersin Plant

**Fresh surface water**

0

**Brackish surface water/Seawater**

842.79

**Groundwater**

0

**Third party destinations**

0

**Comment**

---

**Facility reference number**

Facility 3

**Facility name**

Toros Tarım Ceyhan Plant

**Fresh surface water**

0

**Brackish surface water/Seawater**

130.51

**Groundwater**

0

**Third party destinations**

0

**Comment**

---

W5.1c

---

**(W5.1c) For each facility referenced in W5.1, provide the proportion of your total water use that is recycled or reused, and give the comparison with the previous reporting year.**

**Facility reference number**

Facility 1

**Facility name**

Toros Tarım Samsun Plant

**% recycled or reused**

Less than 1%

**Comparison with previous reporting year**

Higher

**Please explain**

We have increased the reused water amount in our steam turbine generator in Samsun.

---

**Facility reference number**

Facility 2

**Facility name**

Toros Tarım Mersin Plant

**% recycled or reused**

2-10%

**Comparison with previous reporting year**

Higher

**Please explain**

We produce electricity from waste heat in Samsun and Mersin plants by Steam Gas Turbines and we are reusing water in this process. During electricity generation, the steam is condensed and the condensed water obtained is reused again. The quantity of condensed water is around 600m<sup>3</sup>/day in Mersin. Total reused water depends on the production duration. If there are scheduled stops at the production, the reused water quantity decreases. And there were less scheduled stops in 2017.

---

**Facility reference number**

Facility 3

**Facility name**

Toros Tarım Ceyhan Plant

**% recycled or reused**

None

**Comparison with previous reporting year**

About the same

**Please explain**

There is no recycling/reuse in Ceyhan.

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## W5.1d

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**(W5.1d) For the facilities referenced in W5.1, what proportion of water accounting data has been externally verified?**

**Water withdrawals – total volumes**

**% verified**

Not verified

**What standard and methodology was used?**

This is our first year of reporting. We have issued our Water Policy signed by CEO, Tekfen Group of Companies. We have started to engage NGOs and attended relevant workshops. We are at the beginning of the journey. In the future, we intend to verify our all water withdrawals and discharges in accordance with accepted standards.

---

## Water withdrawals – volume by source

### % verified

Not verified

### What standard and methodology was used?

This is our first year of reporting. We have issued our Water Policy signed by CEO, Tekfen Group of Companies. We have started to engage NGOs and attended relevant workshops. We are at the beginning of the journey. In the future, we intend to verify our all water withdrawals and discharges in accordance with accepted standards.

## Water withdrawals – quality

### % verified

Not verified

### What standard and methodology was used?

This is our first year of reporting. We have issued our Water Policy signed by CEO, Tekfen Group of Companies. We have started to engage NGOs and attended relevant workshops. We are at the beginning of the journey. In the future, we intend to verify our all water withdrawals and discharges in accordance with accepted standards.

## Water discharges – total volumes

### % verified

76-100

### What standard and methodology was used?

The waste water discharged to the sea in Samsun is monitored in real time by the Ministry of Environment and Urbanism through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation.

## Water discharges – volume by destination

### % verified

76-100

### What standard and methodology was used?

The wastewater discharged to the sea in Samsun is monitored in real time by the Ministry of Environment and Urbanism through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation.

## Water discharges – volume by treatment method

### % verified

76-100

### What standard and methodology was used?

The wastewater discharged to the sea in Samsun is monitored in real time by the Ministry of Environment and Urbanism through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation.

## Water discharge quality – quality by standard effluent parameters

### % verified

76-100

### What standard and methodology was used?

The wastewater discharged to the sea in Samsun is monitored in real time by the Ministry of Environment and Urbanism through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation.

## Water discharge quality – temperature

### % verified

76-100

### What standard and methodology was used?

The wastewater discharged to the sea in Samsun is monitored in real time by the Ministry of Environment and Urbanism through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation.

## Water consumption – total volume

### % verified

Not verified

### What standard and methodology was used?

This is our first year of reporting. We have issued our Water Policy signed by CEO, Tekfen Group of Companies. We have started to engage NGOs and attended relevant workshops. We are at the beginning of the journey. In the future, we intend to verify our all water withdrawals and discharges in accordance with accepted standards.

## Water recycled/reused

### % verified

Not verified

### What standard and methodology was used?

This is our first year of reporting. We have issued our Water Policy signed by CEO, Tekfen Group of Companies. We have started to engage NGOs and attended relevant workshops. We are at the beginning of the journey. In the future, we intend to verify our all water withdrawals and discharges in accordance with accepted standards.

## W6. Governance

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### W6.1

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#### (W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

### W6.1a

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**(W6.1a) Select the options that best describe the scope and content of your water policy.**

Row	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Description of water-related standards for procurement Reference to international standards and widely-recognized water initiatives Company water targets and goals Commitment to align with public policy initiatives, such as the SDGs Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change	We have HSE Policy. On the HSE Policy, we define our vision, commitments and principles related to health, safety and environment. We commit to protect environment through prevention of pollution along with reducing the carbon footprint and conservation of energy and natural resources. On the other hand, we have issued a separate Water Policy to reflect the rising importance of water stress especially in the regions we operate in. Tekfen Holding takes climate change and water impacts very seriously and continuously updates its policies with relevant and up-to-date issues to become a leading sustainable company. Tekfen_Water Policy.pdf

**W6.2**

**(W6.2) Is there board level oversight of water-related issues within your organization?**

Yes

**W6.2a**

**(W6.2a) Identify the position(s) of the individual(s) on the board with responsibility for water-related issues.**

Position of individual	Please explain
Board Chair	Climate related issues including water security are monitored by Tekfen Holding's Chairman of the Board. Board Members are directly informed on climate issues in Tekfen Holding Board meetings. Chairman of Board states Tekfen's values and one of the values of Tekfen is the protection of nature and the environment. The Chairman of Board follows climate related issues closely. Therefore we can say that our Chairman of Board is the highest responsible person for climate and water-related issues.

**W6.2b**

**(W6.2b) Provide further details on the board's oversight of water-related issues.**

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Providing employee incentives Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Reviewing innovation/R&D priorities Setting performance objectives	Board members are informed regularly on climate and water related issues. CEO of Group of Companies has the executive power for important issues such as strategy, risks/ opportunities, targets and etc. In September 2017, the Sustainability Committee was found and is being headed by VP of Corporate Affairs. The committee is also a subcommittee of the Corporate Governance Committee and reports at least once a year to the Corporate Governance Committee. The Corporate Governance Committee reviews the reports and recommendations presented by the Sustainability Committee and notifies the Board of Directors for approval when necessary.

**W6.3**



**(W6.3) Below board level, provide the highest-level management position(s) or committee(s) with responsibility for water-related issues.**

**Name of the position(s) and/or committee(s)**

Chief Executive Officer (CEO)

**Responsibility**

Both assessing and managing water-related risks and opportunities

**Frequency of reporting to the board on water-related issues**

More frequently than quarterly

**Please explain**

CEO is the chairman of the Executive Board. There are bi-weekly Executive Board Meetings. At these meetings, critical issues including water-related risks and opportunities are also discussed by Executive Board members. Material issues, risks, and opportunities related to water are identified by Group Company HSE representatives and the Sustainability Committee is notified from issues deemed most important by the HSEQ Coordinator who is also a member of the Committee. Vice President of Corporate Affairs is the chairman of Sustainability Committee and also the member of Executive Board. Vice President of Corporate Affairs notifies the Executive Board that consists of President & CEO and Group Vice Presidents on the material risks and opportunities related to water. Water-related issues are monitored by the Sustainability Committee. The results are being reported to Executive Board via Sustainability Committee Chairman who is also a member of Executive Board.

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**W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4**

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**(W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?**

No, and we do not plan to introduce them in the next two years

**W6.5**

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**(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?**

Yes, other

**W6.5a**

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**(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?**

In 2017, Tekfen Holding established Sustainability, HSEQ Departments. In addition Sustainability Committee was established in 2017. The committee consists of group company representatives. At the same time, HSE & Q Coordination Group was established and the group consists of company HSE&Q representatives.

Environment-related company practices are discussed in the HSEQ Coordination Group, while critical issues are addressed to the Sustainability Committee. HSEQ Coordination Group's lead is also a member of the Sustainability Committee. Hence, the compatibility of our water related commitments with our works is first evaluated by the HSEQ Coordination Group and then by the Sustainability Committee. If an inconsistency discovered, the issue is communicated to the Executive Board and the CEO via the Head of the Sustainability Committee. If the issue is more critical, it is transferred to the Chairman of the Board via the CEO and taken to the agenda of the Board of Directors.

**W7. Business strategy**

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## W7.1

### (W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	11-15	Starting from last year, we started to include responding to climate change and water risks amongst our business priorities going forward. We have published the Tekfen Water Policy. Water risk assessment, integrating these risks into strategy, goal and target setting for water and reducing water footprint continuously are amongst the principles laid out in the Tekfen Water Policy. We used the predictions of the calculation tools and studies while setting our goals, strategies, and financial planning. The studies and risk assessment tools give us long term predictions. For this reason 11-15 years was chosen as the future we considered water-related issues.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	11-15	We have started to develop our sustainability strategy. Our Corporate Risk Management program includes risks related to water security. We have established an HSEQ Coordination Group and company's HSE representatives attend the group meetings. Head of HSEQ Coordination Group reports HSE related issues, including water security, regularly to the Sustainability Committee and critical issues are reported to the Board of Directors via Corporate Governance Committee for action when necessary. Water security issues have started to manage more systematically from the year 2017. High water consumption areas are monitored and analyzed, new technology investments are made to minimize water consumption in the facilities. (e.g. membrane and compressor replacements in Samsun Facility, waterless urinal usage etc.). These are done to reduce the dependency on water and potential future fee liabilities. We try to prevent loss in revenue due to anticipated higher water costs over the longer term and also because of a projected lack of resource availability. We also made a large investment in Research and Development in our Mersin plant due to a projected water stress in Turkey. We anticipate consumer behavior shifts for more efficient farming methods and fertilizers that use less water. Our intention is to exploit this new potential market. We are also aiming to realize positive linkage with long term carbon emissions reductions by providing our customers with energy efficiency.
Financial planning	Yes, water-related issues are integrated	11-15	Water related issues are always considered in our financial planning and will continue to do so. For example, in our projects/ workplaces, we consider the costs of water quality analysis, waste water treatment plants, waste water quality analysis, LEED certification and necessary human resources. In our facilities, we make constant investments in new technology to minimize our water use. We do this because we anticipate higher water prices in the future. By replacing membrane at demi water facility, renewal of compressors, collection and reuse of surrounding process waters in Samsun Plant, we will save approximately 1,000,000 m3/year of water. We also replaced our urinals with waterless ones in our HQ buildings, achieving 150 m3/year water savings per urinal. All these efforts will decrease of water cost. We used the predictions of the calculation tools and studies while setting our goals, strategies, and financial planning. The studies and risk assessment tools give us long term prediction. For this reason 11-15 years was chosen as the future we considered water-related issues. In addition, the establishment of a new wastewater treatment plant of Mersin facility was included in the investment plan of Toros Tarım . The waste water treatment plant is planned to be operational in 2020.

## W7.2

### (W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

	Water-related CAPEX (+/- % change)	Anticipated forward trend for CAPEX (+/- % change)	Water-related OPEX (+/- % change)	Anticipated forward trend for OPEX (+/- % change)	Please explain
Row 1	11.26	40.72	0	0	We have made renovations regarding our water infrastructure in 2017 and will continue to do so in 2018

## W7.3

### (W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

	Use of climate-related scenario analysis	Comment
Row 1	Yes	

## W7.3a

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### (W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

Yes

## W7.3b

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### (W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization's response?

	Climate-related scenario(s)	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	Other, please specify (RCP 4.5)	We considered RCP4.5 as a realistic scenario for the impacts of climate change in Turkey. This is because we base our analyses on the "Climate Change Projections for Turkey" report published by the Turkey's General Directorate of Meteorology. The report includes 2 different climate changes scenarios, RCP4.5 and RCP8.5. 2013-2040, 2041-2070, 2071-2099 are considered as 3 defining time periods. According to the report, Turkey will face 2 to 3 degrees in Celsius increase in mean temperature during 2013-2040 and up to 4 degrees Celsius in later periods. Reductions in mean precipitation are also expected. We consider these impacts especially important in our Agri-Industry operations. While we are not expecting large impacts to our direct operations, our value chain will be directly impacted as farmers will need to use limited water resources more efficiently.	We have invested in Research and Development Center and special fertilizer products that should be used with modern irrigation methods such as drip and rain irrigation. Special fertilizers are liquid and can be dissolved in water. Previously, we were importing special fertilizer products and selling. With our investments in this area, we are looking to capitalize on the impacts of climate change in Turkey.

## W7.4

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### (W7.4) Does your company use an internal price on water?

#### Row 1

#### Does your company use an internal price on water?

No, but we are currently exploring water valuation practices

#### Please explain

Water valuation practices are an issue we intend to discuss in the upcoming periods with our sustainability committee and Board of Directors.

## W8. Targets

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### W8.1

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**(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.**

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Business level specific targets and/or goals Activity level specific targets and/or goals Site/facility specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	Targets and goals are set by individual businesses based on activity type. Most targets are introduced for risk mitigation purposes in specific projects to monitor staying within legal limits and rolled each month for 100% adherence. There are also targets related to the releases of uncontrolled spills to the to land or water. All goals and targets are monitored at the corporate level.

**W8.1a**

**(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.**

**Target reference number**

Target 1

**Category of target**

Water discharge

**Level**

Site/facility

**Primary motivation**

Risk mitigation

**Description of target**

% of tests/samples compliant with legal standards for effluent discharge. This target in our TANAP pipeline project adheres to strict legal limits. We have introduced this target for risk mitigation purposes, therefore it is monitored monthly at a corporate level. Adhering to legal limits for effluent quality is both important from a risk mitigation perspective and local watershed security perspective.

**Quantitative metric**

Other, please specify (% of tests/samples compliant with legal)

**Baseline year**

2017

**Start year**

2017

**Target year**

2017

**% achieved**

100

**Please explain**

This is a rolling monthly target that was active in 2017. We monitor this target monthly. All discharge tests and samples has to be inline with legal standards for effluent discharge and they were meaning the % achieved rate was 100%

**Target reference number**

Target 2

**Category of target**

Monitoring of water use

**Level**

Site/facility

**Primary motivation**

Risk mitigation

**Description of target**

% tests/samples compliant with legal standards for potable water This target in our TANAP pipeline project adheres to strict legal limits. We have introduced this target for risk mitigation purposes, therefore it is monitored monthly at a corporate level. Adhering to legal limits for potable water quality is both important from a risk mitigation perspective.

**Quantitative metric**

Other, please specify (% of tests/samples compliant potable)

**Baseline year**

2017

**Start year**

2017

**Target year**

2017

**% achieved**

100

**Please explain**

This is a rolling monthly target that was active in 2017. We monitor this target monthly. All potable water tests has to be in line with legal standards for potable water and they were meaning the % achieved rate was 100%

---

**Target reference number**

Target 3

**Category of target**

Water discharge

**Level**

Site/facility

**Primary motivation**

Risk mitigation

**Description of target**

% tests/samples compliant with Project hydrotest water discharge requirements. This target in our TANAP pipeline project was introduced this target for risk mitigation purposes, therefore it is monitored monthly at a corporate level. While not a legal limit, we have introduced this target for risk mitigation and watershed security purposes.

**Quantitative metric**

Other, please specify (% tests/samples compliant with Project)

**Baseline year**

2017

**Start year**

2017

**Target year**

2017

**% achieved**

100

**Please explain**

This is a rolling monthly target that was active in 2017. We monitor this target monthly. All discharge tests and samples have to be in line with Project hydro test water discharge requirements and they were meaning the % achieved rate was 100%.

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**Target reference number**

Target 4

**Category of target**

Watershed remediation and habitat restoration, ecosystem preservation

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**Level**

Site/facility

**Primary motivation**

Risk mitigation

**Description of target**

The number of serious hazardous substance spills (spills to land or water in between 1.000-10.000 litres) This was Tekfen Construction's corporate target. Tekfen Construction has set up this target for risk mitigation and watershed security/ecosystem prevention purposes.

**Quantitative metric**

Other, please specify (Number of spills to water and land)

**Baseline year**

2017

**Start year**

2017

**Target year**

2017

**% achieved**

100

**Please explain**

This is a rolling monthly target that was active in 2017. There were no serious spills to land and water. Therefore 100% completion rate was achieved.

---

**Target reference number**

Target 5

**Category of target**

Watershed remediation and habitat restoration, ecosystem preservation

**Level**

Site/facility

**Primary motivation**

Risk mitigation

**Description of target**

Number of complaints received regarding negative impact to third-party water quality or quantity. This target in our TANAP pipeline project has been introduced for risk mitigation purposes.

**Quantitative metric**

Other, please specify (Number of complaints received )

**Baseline year**

2017

**Start year**

2017

**Target year**

2017

**% achieved**

100

**Please explain**

This is a rolling monthly target that was active in 2017. Our target each month and therefore the whole year is 0 complaints received for third party water quality. There were no complaints in 2017, therefore 100% completion rate was considered.

---

**(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.**

**Goal**

Engagement with suppliers to help them improve water stewardship

**Level**

Business

**Motivation**

Risk mitigation

**Description of goal**

Tekfen Construction has introduced a questionnaire for its potential high climate risk suppliers against ISO14001:2015. The goal is to raise awareness of environmental related high-risk suppliers by answering our questionnaire.

**Baseline year**

2017

**Start year**

2017

**End year**

2017

**Progress**

68.3%. 28 of 41 environmentally high-risk suppliers have answered our questionnaire. Our goal is a yearly rolling one and eventually to have all our suppliers to answer our questionnaire to help improve water stewardship and risk mitigation.

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**W9. Linkages and trade-offs**

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**W9.1**

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**(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?**

Yes

**W9.1a**

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**(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.**

**Linkage or tradeoff**

Linkage

**Type of linkage/tradeoff**

Decreased energy use

**Description of linkage/tradeoff**

We are reusing water in our waste heat electricity generation facilities. This way we are using less water and also reducing the need for external electricity purchase. We produce electricity from waste heat in Samsun and Mersin plants through Steam Gas Turbines. Instead of purchasing electricity from the electric network, we produce our electricity that is being consumed at our plants. We are reusing water in our waste heat electricity generation facilities (Steam Gas Turbines). During electricity generation, the steam is condensed and the condensed water obtained is used again and condensing water is reused instead of drawing water again to obtain steam. This way we are using less water and also reducing the need for external electricity purchase.

**Policy or action**

To increase the availability of reused water in our waste heat electricity generation facilities. This way we will increase our water efficiency and internal energy generation. We increased reused water 21% in 2017, compared to 2016.

---

**Linkage or tradeoff**

Linkage

**Type of linkage/tradeoff**

Decreased energy use

**Description of linkage/tradeoff**

We use membranes in our demineralized water production process. After membrane replacement, regeneration period decreased from once every 2 days to once every 4 days in Samsun Plant. Increased regeneration period means less electricity and water is being used by the pumps.

**Policy or action**

To increase the regeneration duration. We reduced regeneration period from once every 2 days to once every 4 days. By replacing the membranes and we are expecting 1,655.25 kWh/month energy savings and 25,650 m3/year water savings.

---

**Linkage or tradeoff**

Tradeoff

**Type of linkage/tradeoff**

Increased energy use

**Description of linkage/tradeoff**

We have decided to collect and reuse all surrounding waters in the Sulfuric Acid Unit and demineralization unit in Samsun Facility. While this process will allow us to reduce water withdrawals by reusing water, on the other hand we will use more energy for collection and re-pumping.

**Policy or action**

We will construct a collection pool to collect all surrounding waters and install a 30 kW pump. Estimating a 10hr/day operation, we expect a monthly increase of 9,000 kWh in energy consumption.

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**W10. Verification**

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**W10.1**

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**(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?**

No, we do not currently verify any other water information reported in our CDP disclosure



## W11. Sign off

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### W-FI

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**(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

### W11.1

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**(W11.1) Provide details for the person that has signed off (approved) your CDP water response.**

	Job title	Corresponding job category
Row 1	President and CEO, Tekfen Group of Companies	Chief Executive Officer (CEO)

### W11.2

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**(W11.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].**

No

## Submit your response

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**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	Investors

**Please confirm below**

I have read and accept the applicable Terms