

## Welcome to your CDP Water Security Questionnaire 2019

### W0. Introduction

#### W0.1

**(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, Agricultural-Industry (Agri-Industry) and Real Estate Development. The Group has 43 companies and 11 subsidiaries. Tekfen Holding, which owns all the companies and subsidiaries of Tekfen Group, is listed on Borsa Istanbul's BIST 30 Index. In 2018, the Group had USD 2,308 million in revenues and assets of USD 2,287 million. With 19,180 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 nearly 400 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 Bayil Steel Structure Fabrication Plant within Tekfen Construction, specialize in steel fabrication and process equipment, and the construction of storage tanks. As of end-2018, Tekfen Construction's active projects portfolio had a contract value of USD 2.75 billion. In Engineering News-Record's 2018 list of the world's 250 biggest international contractors based on their 2017 operations, Tekfen Construction ranked in 98th position. Directly under the Contracting 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 engineering 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 Agri, it is Turkey’s 63th largest industrial company. While principally a producer and marketer of fertilizer, Toros Agri also engages in yield-raising, quality-improving agricultural inputs, seed production, techno-agriculture, and seedling production. Toros Agri holds the highest share of installed production capacity for fertilizer in Turkey. It has 1,256 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 Agri. Set up in 2017, in order to be involved in agricultural production, Tekfen Agri is active in the areas of techno agriculture as well as crop seed and fruit production and export. Adana-based Tekfen Agripark, one of Turkey’s first techno-agriculture research centres, explores and exploits Turkey’s rich biodiversity in order to produce disease-free quality seeds and saplings for farmers. Tekfen Agripark was awarded R&D center certification in 2018. Taken over by Tekfen Agri in early 2018 when a 90% stake in the company was acquired, Alanar Fruit is one of Turkey’s largest growers of high-quality stone fruit. About 70% of the fruit that the company grows in its own orchards or procures from other growers is exported. Alanar Fruit’s sister company Alara Fidan is a nursery that produces high-quality, high-yield saplings. Tekfen Real Estate Group engages in investment, project development, construction management and facility management in the real estate sector. 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 (CEDBİK). Aside from its Contracting, Agri-Industry and Real Estate areas of business, Tekfen Group is involved in insurance, through Tekfen Insurance and venture capital investment through Tekfen Ventures.

## W-CH0.1a

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

Bulk inorganic chemicals

## W0.2

**(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, 2018	December 31, 2018

## **W0.3**

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

Turkey

## **W0.4**

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

USD

## **W0.5**

**(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**

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

No

## **W1. Current state**

### **W1.1**

**(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	Vital	Important	<p>Sufficient amounts of good quality freshwater has become vital for our direct operations after the acquisition of a major stone fruit producing Company, Alanar Fruit, in 2018. We use water, at a good quality, as part of our direct operations intensively, covering 2 out of 3 major business areas we operate in, namely Agri-Industry; for fertilizer and stone fruit production, and Contracting Industry which require water for construction of big scale projects.</p> <p>Moreover, we also need good quality freshwater for the provision of WASH services to all our employees. As part of our indirect operations, we work with suppliers and sell products (fertilizers) to our customers (farmers) in the value chain that require adequate amounts of good quality freshwater for their operations as well. Considering their share in our overall indirect operations, we consider the importance of sufficient amount and good quality freshwater for our indirect operations as important. A lack of good quality freshwater can have a considerable impact on our direct and indirect operations hence the rating is “vital” and “important” respectively for direct and indirect operations. For future scenarios, we considered IPCC RCP 4.5 as a realistic scenario for the impacts of climate change on precipitation patterns and projected change in water stress in Turkey. We also 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 significant in our Agri-Industry operations. Therefore, the importance rating for our direct operations will remain the same whereas, we estimate the importance to become vital for our indirect operations in the future too.</p>
Sufficient amounts of recycled, brackish and/or	Important	Neutral	<p>Our Agri-Industry (Toros Agri fertilizer production) facilities use condensed water during electricity production and 91% of our total Holding-wide water withdrawal is from seawater in our Samsun facility, which is used for cooling purposes in sulfuric acid unit, production of demineralized water and washing in the Phosphoric Acid Unit. Due to its high amounts,</p>

<p>produced water available for use</p>			<p>recycling and reusing this cooling and washing water discharged from these units are also an important aspect of water management at the facility. Therefore, both brackish and recycled water is “important” for our direct 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 become “vital” for us. From quality perspective, availability of a decent temperature and quality seawater is also important. In line with the projected mean temperature rise according to climate change scenarios, if the seawater temperatures rise, we might come to a point where we need to further cool down the water we withdraw from the sea. As a result of this, we can say that the quality of brackish water will remain important and can even increase in magnitude of impact and become vital in the future. We do not consider the importance of current recycled water in our indirect use to be as important as our direct operations as the most needs in the value chain is met through freshwater. However, as both our Agri-Industry suppliers and customers need water either to produce or use our products (stone fruit and fertilizers respectively), it can be expected that, with the foreseen increase in water stress in Turkey, they may need to recycle water or withdraw recycled water at an increasing ratio in the future. Therefore, we consider the impact for our indirect operations to be neutral currently with a chance of becoming important in the long-term.</p>
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## W1.2

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

	% of sites/facilities/operations	Please explain
<p>Water withdrawals – total volumes</p>	<p>100%</p>	<p>We monitor water withdrawals from all our operations. Our operations cover all facilities and project construction sites that we operate at. Water withdrawals are therefore monitored at operational level through monthly bills from suppliers in our commercial operations. As part of our production operations, we monitor our water withdrawals through both bills issued by our suppliers as well as internal water meter readings. Moreover, the recently acquired Alanar Fruit with its orchards, we have an addition of fresh surface water withdrawal measured by pump flow</p>

		<p>rates and rainwater calculated using meteorological data (average precipitation rate mm per region and was multiplied by the total area (m2) at relevant regions) and the Food and Agriculture Organisations of the United Nations (FAO) method was used to calculate the effective rainfall by the plants annually. Water withdrawal volume is followed up and reported to Holding HSE&amp;Q Coordinatorship monthly.</p>
Water withdrawals – volumes from water stressed areas	100%	<p>We monitor water withdrawals from all our operations covering all facilities and sites. Water withdrawals are monitored via monthly bills from suppliers for commercial use. For production operations, we monitor our water withdrawals through bills issued by suppliers and internal meter readings. Via a Water Stress Test conducted using WRI Aqueduct Water Risk Atlas, we determined that 69% of our facilities (99.8% of total withdrawal) are located in areas with high water stress. Therefore, we monthly monitor water withdrawal at these facilities. With the recently acquired Alanar Fruit and its orchards, we have an addition of fresh surface water withdrawal measured by pump flow rates and rainwater calculated using meteorological data (average precipitation per region multiplied by our area per region) and the UN FAO method to calculate the effective rainfall that can be withdrawn by the fruit trees. Water withdrawal data is monthly monitored and reported to Holding HSE&amp;Q Coordinatorship.</p>
Water withdrawals – volumes by source	100%	<p>We monitor water withdrawals from all our operations including their sources. Our operations cover all facilities and project construction sites. Water withdrawals are therefore monitored at the operational level through monthly bills from suppliers in our commercial operations. As part of our production operations, we monitor our water withdrawals through both bills issued by our suppliers as well as internal water meter readings per source. Moreover, the recently acquired Alanar Fruit with its orchards, we have an addition of fresh surface water withdrawal measured by pump flow rates and rainwater calculated using meteorological data (average precipitation amount mm per region and was multiplied by the total area (m2) at relevant regions) and the UN FAO method was used to calculate the rainwater withdrawal annually. Our companies monitor their water withdrawal amounts and Report them to the Holding HSEQ Coordinatorship on a monthly basis.</p>

Water withdrawals quality	76-99	We monthly monitor the quality of water, used for drinking and sanitation purposes. In addition, water withdrawal quality in the production process is also fully monitored. We periodically get samples and send them for microbiological and chemical analysis to accredited laboratories in the frequency and period set by legal criteria and regulations (ex. Analysis are conducted in monthly and/ or bimonthly periods). Apart from legal compliance, our Agri-Industry operations conduct internal lab analyses to make sure the water is at a certain quality to be used as process water (e.g. Water withdrawal quality used at water preparation unit is being analyzed by Toros Agri Plant Laboratory continuously. The freshwater parameters analyzed are hardness, conductivity, suspended solids, pH, etc.). However, we cannot monitor the quality of rainwater directly falling to our Tekfen Agri orchards (1.5% of total withdrawal).
Water discharges – total volumes	100%	We monitor water discharges from all our operations. Our operations cover all facilities and project construction sites that we operate at. Our water discharge volume is monitored in real-time due to regulatory requirements by sensors at our Samsun Plant (98.6% of our Holding-wide water discharge), which has a continuous wastewater monitoring system that is directly connected to the Ministry of Environment and Urbanization's system. The discharge volume and quality parameters are monitored by legal authorities in real-time at our Samsun Plant. For all other facilities that supply water from third parties, the amount of water discharged is monitored via water bills as well as meter readings on a monthly basis. At recently acquired Alanar Fruit orchards, 25% of freshwater used for drip irrigation, was estimated as the discharge rate of the plants, since the plants can't absorb all the freshwater supplied.
Water discharges – volumes by destination	100%	We monitor water discharges from all our operations including discharge destination and treatment method. Our water discharge volume (100% to sea) is monitored at our fertilizer production plants located in Samsun in real-time due to regulatory requirements. The amount of water discharged from Samsun facility represent 98.6% of our Holding-wide water discharge. For all other facilities that supply water from third parties, the amount of water discharged is monitored via water bills as well as meter readings on a monthly basis. At recently acquired Alanar Fruit orchards, 25% of freshwater used for drip irrigation, was estimated as the discharge

		rate of the plants as they cannot absorb all water supplied. Therefore, we measure/monitor/calculate all our water discharge per volume and destination.
Water discharges – volumes by treatment method	100%	We monitor water discharges from all our major operations including discharge destination and treatment method. Our water discharge volume is monitored at our fertilizer production plant located in Samsun in real-time by sensors due to regulatory requirements, and in Ceyhan and Mersin plants through meter readings. For almost all activities we either use our own water treatment facilities or discharge commercially directly to third parties' water treatment facilities excluding water discharged to groundwater without any treatment after irrigation operations at Tekfen Agri orchards (0.1% of Holding-wide total water discharge). As per expert statements, we calculate that 25% of irrigation water can't be absorbed by the plants and discharged to groundwater or surface water. Overall, we monitor/calculate/measure all our water discharge per treatment method.
Water discharge quality – by standard effluent parameters	76-99	Our 3 fertilizer plants (99.5% of our total water discharge) have wastewater treatment units and water discharge qualities are monitored as per Turkish Water Pollution Control Regulation and its relevant discharged water quality limits in defined periods which is generally conducted bi-monthly. In addition, Toros Agri Samsun Plant uses a considerable amount of seawater for cooling purposes and the resulting discharge represents 98.6% of the total water discharges reported in the reporting period. Because of the resulting great amount of discharged water, Samsun Plant established Water Discharge Measuring and Monitoring Station that monitors standard effluent parameters of wastewater in real-time and reported to the Ministry of Environment and Urbanisation (the MoEU). The real-time reports can be reached 24/7 via the web in Samsun Plant. However, we do not monitor the discharge water quality for Tekfen Agri orchard operations as they are directly discharged as a result of irrigation.
Water discharge quality – temperature	76-99	Toros Agri Samsun Plant has water discharge measuring and monitoring station that monitors standard effluent parameters of wastewater continuously. The station is controlled and followed up by the Ministry of Environment and Urbanisation (the MoEU) and determined water discharge quality parameters are monitored and recorded in real-time by the MoEU. One of the parameters being monitored continuously is the temperature of discharged water. Samsun Plant



		represents 98.6% of the total water discharges reported Holding-wide in this reporting period. The majority of water is discharged to the sea. However, we do not monitor the discharge water temperature for Tekfen Agri orchard operations as they are directly discharged as a result of irrigation.
Water consumption – total volume	100%	We monitor/calculate all of our water consumption volume. In our 3 fertilizer operations where we use freshwater, groundwater, and brackish water, we monitor our water consumption either in real-time or via monthly meter readings as well as through cross-checks with bills provided by our water suppliers. In our commercial and contracting operations, water consumption is monitored as same as water withdrawals via monthly water meter readings. As part of our Tekfen Agri orchard agricultural practices, we calculate our rainwater consumption (plant rainwater intake/absorption) by using the UN FAO effective rainfall calculation using national (regional) rainfall data. As per regular irrigation practices, we estimated an average 25% plant water absorption rate based on expert opinion. Therefore, we monitor/calculate/measure 100% of our water consumption either annually (only rainwater) or monthly (for all other water sources).
Water recycled/reused	100%	We monitor the amount of water recycled/reused at all our facilities mostly via meters (monthly) where recycling/reusing takes place. We demineralize and reuse water in our Agri-Industry fertilizer production operations and monitor this data in real-time in one of the facilities, Samsun. The 99.8% of water recycling takes place at our 3 fertilizer production facilities. The remainder of our water reusing activities take place as part of Tekfen Construction operations and the amount is measured via volume calculation based on water truck capacity.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Health and safety of Tekfen personnel is our top priority. Therefore, all our employees/workers are provided with fully-functioning and safely managed WASH services at all times. The quality of drinking/ potable water provided is being monitored and analysed monthly and bi-monthly periods to ensure compliance with regulatory limits.

## 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	126,290	Higher	We compile the data via meter readings and water bills in all operations whereas calculation method was used only for Tekfen Agri surface water withdrawal (based on pump flow rate) and rainwater withdrawal based on national meteorological data together with the UN FAO effective rainfall calculation formula. Our total water withdrawals in the reporting period has increased by 10.2% compared to 2017. This increase was partly (2%) a result of the acquisition made during the reporting period, Tekfen Agri, Alanar Fruit – major stone fruit producer. The remainder was mainly a result of the 1.81% increase in our Agri-Industry production volumes. We expect our future water withdrawals to increase in line with our business growth plans. While classifying the magnitude of change from previous year data, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower.
Total discharges	119,795	Higher	We compile the water discharge data via real time monitoring (Samsun Fertilizer Plant), meter readings and water bills (in all other operations) and additionally calculation method was used only for Tekfen Agri orchards plant water intake (and therefore the discharge) based on national meteorological data together with the UN FAO effective rainfall calculation formula. Our total water discharges in the reporting period has increased by 8.6% compared to 2017. This was mainly due to the increase in production volume of 1.81% at our Toros Agri (Agri-Industry) facilities which resulted in an 8.98% increase, which was balanced with an overall by the decrease experienced in water discharge amounts at other Group Companies such as Tekfen Real Estate (99% reduction in total discharge level at this Company; 68 megaliters, due to completion of projects such as HEP Istanbul LEED certified residential building). We expect our future water discharge amount to increase in line with our business growth plans.

			While classifying the magnitude of change from previous year data, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower.
Total consumption	6,495	Much higher	<p>Our water consumption has increased by a large 50.2% due to the recent acquisition of Tekfen Agri’s stone fruit producing company; Alanar Fruit. As this Company owns orchards and as a natural result of agricultural practices, overall water consumption level of Holding has increased considerably. Water consumption of Tekfen Agri related agricultural operations has been included for the first time this reporting period. The amount of water consumed by Tekfen Agri constitutes 35.6% of our total water consumption. To calculate total water consumed by our organization we use the water balance; <math>Withdrawal (W) = Discharge (D) + Consumption (C)</math>.</p> <p>When we compare the water consumption amount with the previous year excluding the newly acquired Tekfen Agri, we can see a decrease trend of 3.3%. We expect our future water consumption level to increase in line with our agricultural business growth plans. While classifying the magnitude of change from previous year data, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower.</p>

## 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	99.8	About the same	WRI Aqueduct	We use WRI Aqueduct Water Risk Atlas tool to identify overall water risks, baseline water stress, projected change in water stress, flood occurrence, drought severity, groundwater stress, etc. By using the tool, we assessed the water stress risk level for each of our locations by entering their coordinates on the tool and identifying the basin they are located at. Most of our operations in Turkey (31 out of 45 locations) are listed as having High to Extremely High Water Stress Levels between 40-80% and more than 80% respectively.

				Our total corporate-wide water withdrawals has increased by 10.2% in comparison with the previous reporting period. Despite the acquisition of Alanar Fruit, and resulting increase in the total number of locations (with 10 new locations, reaching 45 locations overall as Tekfen Holding), the % of water withdrawn from water stressed areas has only changed slightly (from 99% in 2017) as all the new locations included in our operational boundary are also located at water stressed areas. Therefore, overall the % has remained about the same.
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## 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	2,122	Much higher	Water withdrawal from the fresh surface water has increased by 218% (much higher) after Tekfen Agri Alanar Fruit acquisition. While previously our water withdrawal from this source constituted solely Tekfen Construction (TITAS) withdrawal based on hydro test of 512 km length pipeline project. In 2018, TITAS' hydro test activities were completed and the water withdrawn from this source has decreased by 93% (from 667 megaliters to 48). On the other hand, in 2018, we have started to account for rainwater withdrawn at our orchards which constitutes 86.6% of total water withdrawn, while the remaining 13.4% was identified via measurements. In order to calculate the amount of rain water withdrawal, meteorological data and UN FAO's effective rainfall calculation methods were used. We can say that fresh surface water withdrawal depends on TITAS' projects and precipitation, so we can't give exact future trends but estimate an increase in line with our growth strategy.

Brackish surface water/Seawater	Relevant	115,386	Higher	<p>Brackish surface water/ seawater withdrawal has increased by 8.74% (higher).</p> <p>We use seawater only in the Toros Agri Samsun Plant. Seawater is being used in the Sulfuric Acid Unit for cooling, production of demineralized water and washing in the Phosphoric Acid Unit. Seawater data is obtained via direct measurement. The reason for the stated increase, by 8.74% from the previous year, is because of a 7.5% increase in production capacity in our Samsun facility. 96.7% of total water at Samsun Plant is withdrawn from seawater. Therefore the total working hours as well as the mean seawater temperature during summer has direct influence on the amount of seawater withdrawal. While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower. We can expect an increase in this quantity in the future in line with our business strategy.</p>
Groundwater – renewable	Relevant	4,582	Higher	<p>Renewable groundwater withdrawal has increased by 8.50% (higher). Renewable groundwater is used in Toros Agri Mersin and Ceyhan Facilities as well as in our recently acquired Alanar Fruit orchards and is measured via meter readings or calculations by using pump flow rates. We use renewable groundwater for irrigation, cooling, cleaning, fire water, dust suppression in coal stock areas, etc. The withdrawal data is achieved via measurements.</p> <p>%7 of the increase in renewable groundwater withdrawal was a direct result of the Alanar Fruit acquisition made during the reporting period. While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower. In line with the predicted growth on Tekfen Agri and Alanar Fruit orchards area, we</p>

				expect the trend to be an increase in the future.
Groundwater – non-renewable	Not relevant			We do not use non-renewable groundwater in any of our operations. Therefore, water withdrawal from this source is currently not relevant for our business and will remain as not relevant in the future.
Produced/Entrained water	Relevant	3,891	Higher	<p>Produced water has increased by 15.40% (higher). During steam production in the Steam Turbine Generator (STG), condensed water is produced and collected for reuse. There are STGs in Toros Agri Mersin and Samsun facilities.</p> <p>The electricity production was higher compared to the previous year. That is the reason of this trend (a 15.4% increase).</p> <p>The withdrawal data is obtained via meter readings.</p> <p>While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower. We can expect an increase in this quantity in the future.</p>
Third party sources	Relevant	309	Much higher	<p>The amount of water withdrawn from third party suppliers has increased by 32.6% in comparison with the previous reporting period.</p> <p>This is a direct result of the inclusion of Tekfen Agri activities in 2018 which resulted in a 32% increase (74.8 megaliters) in total water withdrawn from third party sources.</p> <p>Tekfen Agri provides necessary amount of water from local irrigation unions and this data is directly obtained from the water bills of the unions.</p> <p>While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower. We constantly try</p>

				to launch water management initiatives. Therefore we expect decrease in withdrawal from third party sources in the future.
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## 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	260	Much lower	<p>Even though the amount of water withdrawn from fresh surface water has increased considerably, the amount of discharge to the same source has been decreased by 65.3%.</p> <p>There are fruit trees in our orchards and they consume some amount of rain water. We have calculated amount of rainwater consumed by the plants by using FAO's effective rainfall formulation and Turkish Meteorological data. On the other hand, since we can't control surface runoffs and deep percolation of rainwater, we don't account these amounts.</p> <p>In addition, another reason is the termination of hydro test activities in TITAS (Tekfen Construction TANAP project). This data is obtained via direct measurement.</p> <p>While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as "about the same", 5% to 20% as "higher/lower, and above 20% as much higher/lower. We expect this amount to remain about the same in the future.</p>
Brackish surface water/seawater	Relevant	119,063	Higher	We use and therefore discharge seawater only in the Samsun Plant of Toros Agri (Agri-Industry). Seawater is used in the Sulfuric Acid Unit for cooling, production of

				demineralized water and washing in the Phosphoric Acid Unit. The data is obtained via real time measurement. The reason of increase in seawater discharge, by 8.8% from the previous year, is because of a 7.5% increase in production volume in our Samsun facility. %96.7 of total water withdrawn at Samsun Plant is seawater. The total working hours as well as the mean seawater temperature during summer has direct influence on the amount of seawater withdrawn and therefore discharged. While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower. We can expect an increase in this quantity in the future in line with our business strategy.
Groundwater	Relevant	163	Much higher	There has been a drastic increase, over 4000% in the amount of water discharged to groundwater. The sole reason for this increase is the inclusion of Tekfen Agri (agricultural production activities) operations in the reporting boundary. Moreover, we have also accounted for the rainwater also in the water discharge boundary and considered that 25% of irrigation water supplied to the plants in Alanar Fruit orchards are not absorbed and therefore discharged to this destination. While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower.
Third-party destinations	Relevant	309	Much higher	Tekfen Construction builds and operates its own waste water treatment plants where municipal infrastructure is inadequate or insufficient. On the other hand, because of the project locations/conditions and client requests, Tekfen Construction mostly used third party destinations, such as Client’s and/or Owner’s waste water treatment systems such as Star Aegean Refinery, Turkstream and Tanap Compressor Stations Projects that were active in 2018. The amount of water discharged to third party sources have increased by 88.1% due to increasing operations of Tekfen Construction which resulted in a 38% increase on the amount of water discharged to third party destinations. While classifying the magnitude of



				change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower.
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## W1.2j

### (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	11-25	Higher	<p>The total amount of water recycled/reused has increased by 18.77% (1,576 megaliters) from 2017 to 2018, reaching 24% of total water consumed.</p> <p>During energy production from waste heat recovery, we first demineralize the water. Some of the demineralized water is condensed and re-used which is measured via meter readings. These recycled and reused water quantities are very high in Samsun and Mersin plants. In addition, water is being reused for coal dust suppression in Ceyhan Plant.</p> <p>As part of Tekfen Construction activities, we reuse the hydro test water for concrete washing and we determine the amount (0.2 megaliters) reused via calculation (water truck volume).</p> <p>We expect an increase in these values as we anticipate extending our Agri-Industry business. However, huge amount of seawater withdrawn and discharged at Samsun Plant resulted in a decrease in recycled or reused water rate (1% of water withdrawn is reused; 1,576 megaliters) at the facility. On the other hand, as Tekfen Holding, %24 of total water consumed was recycled/ reused water in 2018.</p> <p>Our recycled/reused water definition is the in line with CDP.</p> <p>We have issued a corporate-wide Water Policy and we have started to manage water more systematically during the reporting period. As a result, at our Samsun Plant we have dedicated a budget and invested in establishing the infrastructure to enable the procurement &amp; reuse of further demineralized condensed water and rainwater around both sulfuric acid and waste heat recovery units as well as water used for stack cleaning and adjusting acidity levels as part of production process. Through these investment, we are able to recycle and reuse on average an additional 130 megaliters of water corresponding to 10% of the total water reused at the Plant during the reporting period.</p>



			<p>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 all our Group Companies. Therefore we expect a continual increase of % recycled and reused water in the future.</p> <p>While classifying the magnitude of change from previous year, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower.</p>
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### W-CH1.3

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

No, and we have no plans to do so in the next two years

### W1.4

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

Yes, our suppliers

Yes, our customers or other value chain partners

### W1.4a

**(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?**

Row 1

**% of suppliers by number**

1-25%

**% of total procurement spend**

1-25

**Rationale for this coverage**

This engagement covers our Tekfen Construction operations who works with many suppliers and at the beginning of each project, depending on the geography, size and the nature of the project, 10 to 15 products with highest potential environmental impact, including water impact, are identified by the Project' HSE Manager. As part of the projects that were active during the reporting period, this evaluation resulted in the identification of 41 suppliers who provide the identified highest impact materials/services. In order to monitor the environmental impact of those, a Life Cycle Checklist, has been shared with them to better comprehend our wider environmental footprint and inform our critical suppliers on our efforts to effectively manage our production processes that have high climate- and water-related impacts. Suppliers are encouraged but not yet incentivized to provide data.

**Impact of the engagement and measures of success**

We have initiated this engagement in the previous reporting period with the aim of collecting environmental information from our strategic -at the same time with high environmental impact owning- suppliers. By doing so we believe not only we will be able to show the importance we place on environmental performance such as compliance with regulations, responsible consumption of all resources including water, renewable energy and material deployment and managing operations under Environmental Management System (EMS), but also we would like to increase awareness of our suppliers and potentially help us reduce our environmental impact, including water-related parameters, in the most important part of our value chain. In 2018, our HSE Project Managers have identified 41 strategic suppliers 28 of which have completed our Project Lifecycle Checklist Form (GM-SEC-FRM-017). We consider this 68.3% response rate (above expected 50%), a success and aim to increase this rate in the medium horizon.

**Comment****W1.4b**

**(W1.4b) Provide details of any other water-related supplier engagement activity.**

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**Type of engagement**

Onboarding & compliance

**Details of engagement**

Requirement to adhere to our code of conduct regarding water stewardship and management

**% of suppliers by number**

76-100

**% of total procurement spend**

76-100

**Rationale for the coverage of your engagement**

Over 60% of Tekfen Construction's field operations are handled by subcontractors/suppliers. Therefore, the Company pays utmost attention, while onboarding a supplier/subcontractor, for them to be fully compliant with its own publicly available Code of Conduct (CoC). The Company's CoC states environmental requirements as part of (a) being compliant with environmental laws and regulations at all times and (b) the aim to take preventive and sustainable measures to protect the environment and to minimize the environmental impact of its activities. The overall approach to the environment and sustainability, including water security, do focus on working towards becoming a Better Employer, a Better Contractor, a Better Partner and a Better Neighbour.

Not only the Company ask 100% of its suppliers/subcontractors while onboarding to declare their compliance commitment to the CoC, but also requires environmental management systems documentation, including water management aspects.

**Impact of the engagement and measures of success**

In the reporting period, the engagement while onboarding a new supplier/subcontractor continued covering 100% of all new suppliers. In the reporting period, the response rate from our suppliers who fully committed to be compliant with our CoC and providing required data was 53.4%. As we consider this engagement an important impact management tool, we believe our efforts to include and require our new suppliers to meet and maintain the business excellence levels including responsibly managing environmental impacts such as energy and water performance, is a success. This engagement enables us to pro-actively manage environmental compliance with regulations while providing a platform for our key value chain partners –suppliers- to manage and minimize their environmental impact via for example implementing initiatives to maximize water recycle.

**Comment**

## W1.4c

### **(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 Company Toros Agri, who produces fertilizers, has 1256 dealers and sales points, which represent a valuable part of its value chain, and Toros Agri engages with its dealers, sales points as well as farmers (customers) directly in the form of field visits, meetings, trainings, village visits etc.. By doing so, we aim to maximize productivity while optimizing water use for their crops/area via maximizing efficiency. We have launched the "Correct and Balanced Fertilizer Use Project" via which we aim to communicate with farmers on what can be achieved through correct use of fertilizers compared to their regular fertilizing methods. This engagement has a number of benefits as it directly enables efficient use of water as well as via avoiding the application of excess fertilizer, this also helps reduce water and land pollution. We supplement these trainings via Farmer Training Animations and Mobile Training Bus. Our measure of success is maximized production per crops/area. In 2018, among closely monitored 47 wheat producers, through this training 14% productivity has been achieved which is considered a successful/positive impact.

In addition to engagements held with customers, Toros Agri also engages and actively collaborates with Universities as part of its R&D centre activities focusing on water-soluble fertilizer development with great potential to reduce water pollution and avoid excess water as well as energy consumption due to conventional agricultural practices. By engaging and working closely with Universities, we aim to turn the know-how shared into new and more sustainable products positively affecting the whole value chain. This engagement will enable multi-dimensional water related benefits once these products are commercialized in the medium to long term. Accordingly, we define the measure of success for this engagement/collaborations as commercialization of new, water-soluble fertilizers.

## W2. Business impacts

### W2.1

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

Yes

### W2.1a

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

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**Country/Region**

Turkey

**River basin**

Other, please specify  
Akdeniz Basin

**Type of impact driver**

Physical

**Primary impact driver**

Severe weather events

**Primary impact**

Impact on company assets

**Description of impact**

As a result of sudden hail incident took place in Antalya region in our Candir greenhouse lasting a few hours, around 250 glasses were broken causing damage to the facility. The hail incident also affected the output quality and quantity of fruits.

Although this impact is not considered substantive, it is very important in terms of future risks. We expect an increase in the frequency and severity of these kinds of climate events.

**Primary response**

Increased capital expenditure

**Total financial impact**

400

**Description of response**

In order to maintain the output of the facility without getting affected by this acute physical event, we promptly made an additional capital expenditure to replace the broken glasses with a total cost of USD 400. Unfortunately, due to the nature of greenhouses, there are not many measures to implement to be resilient to such acute and severe physical precipitation. However, we make sure our employees and facilities are well equipped to take immediate action to protect and maintain our business as usual operations. While this response is not directly linked to water security, it is caused by the changing climate/precipitation patterns and is considered as a chain in the water cycle. Our response to all incidents is to secure our operations with minimum or if possible no disruption, which includes maintaining our water security and resilience. As an example of these preventive measures, we have installed hail nets to protect our products (stone fruit) against a potential hail covering a 340 decares of our Alanar Fruit orchard. By doing so we minimized the risk of heavy precipitation related detrimental impact.

## W2.2

**(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

### W-CH3.1

**(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 (covering our chemical operations) have certified Environmental Management System (EMS) 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 via EMS. 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 pollution to land and water during its chemical operations as well as all aspects of its operations. All necessary precautions are taken to prevent the pollution of surface water 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 water sources:

- 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 water bodies, including effluents from wastewater treatment plants, will meet applicable water discharge standards meeting but not being limited to the regulatory requirements.
- Fuelling, 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 to as a result of its activities. Tekfen evaluates the chemicals and their effects and also assesses the hazards and risks associated with their applications as part of its chemical sector operations. 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 is a 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



			<p>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.</p>
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### W3.3

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

Yes, water-related risks are assessed

### W3.3a

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

**Direct operations**

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**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 years

**Type of tools and methods used**

Tools on the market

Enterprise Risk Management

International methodologies

Databases

Other

**Tools and methods used**

WRI Aqueduct

WWF-DEG Water Risk Filter

ISO 31000 Risk Management Standard

IPCC Climate Change Projections

Regional government databases

Internal company methods

External consultants

Other, please specify

ISO 14001 Environmental Management System Standard.

**Comment**

## Supply chain

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### 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 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

Other, please specify

ISO 14001 Environmental Management System Standard.

### Comment

## Other stages of the value chain

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### 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 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

Other, please specify

ISO 14001 Environmental Management System Standard.

### Comment

### W3.3b

#### (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	<p>Our projects/ workplaces withdraw the necessary amount of water, which is deemed crucial for continuation of our operations, from the nearest and suitable basins/ catchments. Therefore water availability is always considered by our projects/ workplaces at a basin/ catchment level.</p> <p>Our Agri-Industry operations now use more freshwater in their operations following the acquisition of Alanar Fruit, a stone fruit producer, and draw the necessary freshwater from rivers, streams, dam reservoirs, irrigation associations, and underground wells. In recent years, irrigation unions are not providing the requested amount of irrigation water to the users, demanding facilities.</p> <p>While on the other hand, Tekfen Construction sites require a certain amount of water for hydro test activities, etc.</p> <p>Before withdrawing water from freshwater supplies, we also analyze the current flow regime of the rivers/ streams and we don't withdraw more than 10% of the flowrate.</p> <p>In order to conduct a thorough water risk assessment, we, therefore, assess both current and future water availability and changes at a basin/catchment level through the use of regional government databases, WWF-DEG Water Risk Filter and WRI Aqueduct tool. Moreover, we also analyze IPCC Climate Change RCP 4.5 scenario projections for Turkey and its probable emerging impact on precipitation patterns as well as water availability over the long term. This element of risk assessment covers all aspects of our value chain and both current and future issues.</p>
Water quality at a basin/catchment level	Relevant, always included	<p>Withdrawn and discharged water quality at basin/ catchment level is always taken into consideration during water risk assessments. In order to maintain a certain level of operational excellence, both water to be consumed/recycled and waste water quality is analysed in our projects/ plants. We conduct microbiological and chemical analyses periodically (monthly and/or bimonthly) as specified in local regulation and/ or project requirements. As an example, in our Tanap pipeline project, we monitor water</p>

		<p>quality in the basin at all times and don't allow machinery to be used in the rivers to prevent any potential effect on water quality as well as on the natural habitat. We always store our hazardous materials in watertight containers and have spill response plans ready to prevent issues at all cost. Potable water quality in camps and offices are also analysed periodically according to legal requirements. We also have waste water treatment facilities in our camps where waste water discharge parameters are measured, monitored and analysed periodically. We use internal company methods (Environmental Risk Assessment in parallel to ISO 14001 Standard) to assess both current and possible future risks regarding water quality at a basin/ catchment level as well as tools available on the market such as WRI Aqueduct. This element of risk assessment covers all aspects of our value chain and both current and future issues.</p>
<p>Stakeholder conflicts concerning water resources at a basin/catchment level</p>	<p>Relevant, always included</p>	<p>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 a certified and audited Environmental Management System in place, we determine external and internal issues as well as stakeholders that are relevant to our operational 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 related risks that can affect us. As part of our contracting operations, each 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 but if needed transplanted them to different locations and maintained their well-being. 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). This element of risk assessment covers all aspects of our value chain and both current and emerging issues.</p>

<p>Implications of water on your key commodities/raw materials</p>	<p>Relevant, always included</p>	<p>One of our key commodities are fertilizers and stone fruits. Water scarcity and water stress is of great importance for our direct operations as stone fruit producers, but also for our supply chain whom we contractually buy stone fruit, and our customers (farmers) who buy fertilizers from us. Without enough water supply, we would not be able to produce or procure stone fruit but also 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 suppliers, customers (farmers) and dealers on the most appropriate production practices and uses of our fertilizer products, making sure they can grow their crops/products 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, as well as tools on the market namely, WWF-DEG Water Risk Filter and WRI Aqueduct. This element of risk assessment covers all aspects of our value chain and both current and emerging issues.</p>
<p>Water-related regulatory frameworks</p>	<p>Relevant, always included</p>	<p>Tekfen identifies and complies with the local regulatory and legislative requirements applicable to all its operations and business areas. The updates of existing legal and other requirements are closely followed and relevant parties are informed about changes and their implications on our operations. Tekfen periodically evaluates its compliance with applicable legal as well as other requirements and keep records of the results of periodic evaluations. Compliance with regulatory framework is our priority that is stated on our Policies and Tekfen values. Moreover, we are aware that there is an increasing concern on nitrate pollution on soil as well as water sources as a result of access fertilizer use. Therefore, water-related regulatory frameworks as well as rising concerns 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 Agri 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). This element of risk assessment covers all aspects of our value chain and both current and emerging issues.</p>

Status of ecosystems and habitats	Relevant, always included	<p>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 a certified and audited Environmental Management System in place, we always consider the status of ecosystem and habitats. Status of ecosystems and habitats are of high concern covering our Agri-Industry fertilizer production operations as there is an increasing concern on nitrate pollution on soil as well as water sources as a result of access fertilizer use. In order to effectively manage our direct and indirect role in the ecosystem and the surrounding habitat, we conduct a thorough risk assessment with the aid of available tool on the market, namely; 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 but if needed transplanted them to different locations and maintain their well-being. 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. This element of risk assessment covers all aspects of our value chain and both current and emerging issues.</p>
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	<p>The availability of WASH facilities at premises is of critical importance to us. 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 to provide our employees a healthy and safe working environment. We have a documented and certified Health and Safety Management System in parallel to OHSAS 18001/ 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 other value chain partners such as sub-contractors. Therefore, access to fully-functioning and safely managed WASH services at all times are taken into consideration in water related risk assessments by using internal company methods (Health and Safety Risk Assessments in parallel to OHSAS 18001/ ISO 45001 Standard) and includes both current and possible future risks. WRI Aqueduct, WWF-DEG Water Risk Filter and regional government databases are being used to assess the accessibility of WASH facilities in</p>



		the future. Therefore, this element of risk assessment covers all aspects of our value chain and both current and emerging issues.
Other contextual issues, please specify		

### W3.3c

**(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 currently 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, and 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. While assessing water-related risks for our customers, we include both current as well as potential customers covering all aspects of our value chain.
Employees	Relevant, always included	It is very important for us to provide our employees with fully-functioning and safely managed WASH services at all times. Water we use in our camps and offices are monitored and analysed periodically. Waste water in our camps are treated and discharge quality are continuously monitored. We also place importance on 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. While assessing water-related risks for our employees, we include both current as well as future risks covering all aspects of our value chain.
Investors	Relevant, always included	Investors' expectations of Tekfen are always included in both risk and opportunity assessments. As part of our Agri-Industry operations, our fertilizer production facilities operate in line with the regulatory requirements. We consider our large construction projects as especially important when it comes to investor requests. International Financial Institutions (IFI) have environmental and social standards at which we have to operate



		<p>within. 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 performance and our approach of managing water with our investors. We established a Sustainability Department and issued our first Sustainability Report in 2019, making sure all water-related issues are shared with the stakeholders. While assessing water-related risks for our investors, we include both current as well as potential investors covering all aspects of our value chain.</p>
Local communities	Relevant, always included	<p>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, but if needed transplanted them to different locations and maintained their well-being. Moreover, with our acquisition of a stone fruit producer company, we now own orchards as well as are in connection with farmers as suppliers. As a result of this, we are aware that we consider local communities as part of our water risk assessment now that we are in contact with local communities in an increased number of locations. Therefore, while assessing water-related risks for local communities, we include both current as well as future risks covering all aspects of our value chain.</p>
NGOs	Relevant, always included	<p>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 (TUSIAD) which are in the forefront when it comes raising awareness and working with policymakers 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 (CEDBİK). It is very important for us to align our strategies when it comes to climate change and water with these institutions. As part of our water-related risk assessment we consider NGO's and their current and future roles in all aspects of our value chain as well as keeping an open eye to constantly identify new NGO's that can be included in our water-related risk management engagements.</p>

Other water users at a basin/catchment level	Relevant, always included	We consider other current water users in the areas where we have operations as part of our water-related risk assessments. If we are working near the river or when we are discharging the wastewater to wetlands, we pay utmost attention to the discharged water quality and quantity. If we withdraw water from the river, the amount cannot be more than 10% above the river's flow volume. If we discharge the wastewater to the wetlands, every measure is taken so that the wastewater quality always 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 bunded and impermeable areas against any leakage or spillage. While assessing water-related risks for other users at a basin/catchment, we include both current as well as future risks covering all aspects of our value chain that can be affected by our direct and indirect operations.
Regulators	Relevant, always included	Policy makers as well as current and potential future water-related regulations are taken into account. Groundwater is being used in Mersin and Ceyhan plants through wells and we have active well permit licenses for each well we operate. 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 (DSI). If we can't draw enough water from the dam, our Samsun operations might face disruption. Therefore, engagement with regulators is important to prevent this kind of risk in our fertilizer plants. Tekfen is a member of Turkish Sustainable Development Business Council (SKD) and Turkish Industry and Business Association (TUSIAD) 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 TUSIAD's climate and water-related working groups. While assessing regulators related water risks, we include all aspects of our value chain covering both current and possible future regulators.
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 emerging developments in this area closely. When the legal background is established, we will include potential river basin management authorities and their expectations in our risk assessments covering all Tekfen Holding Group companies' operational locations. 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 current main authority for surface and groundwater 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 water risk assessment. While assessing water risks covering this particular stakeholder group, we include all aspects of our value chain both for current and possible future groups.
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. Moreover, according to WRI Aqueduct tool, we can see that Turkey will be subjected to increasing overall water risks in the medium to long-term horizon. 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. While assessing suppliers-related water risks, we include all aspects of our value chain covering both current and possible future suppliers and try to enhance our way of monitoring their performance as well as implementing awareness raising activities to improve water management practices.
Water utilities at a local level	Relevant, always included	Municipal, industrial and private water suppliers and water utilities that treat wastewater are always incorporated in our water risk assessment and are 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 Corporate-wide 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 current water utilities at local level covering all aspects of our value chain.
Other stakeholder, please specify	Relevant, always included	During withdrawal and discharge of water, Tekfen also considers downstream stakeholders in the same basin. As an example, in our Tanap pipeline project water withdrawal rate was set as 10% of the River's flow rate in order not to distort the hydrological regime or cause water stress in the basin that might affect other current or possible future water users from the same basin. No chemical treatment was used during hydrostatic testing period to avoid chemical release to the environment. Tekfen ecologist/environmental inspectors attended the

		<p>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.</p>
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### 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’ top management and all employees are responsible for effective risk management. Water-related risks are identified, assessed and managed at a Group Company level and are then consolidated and monitored at the Holding level. Tekfen Holding Strategic Planning and Risk Management Directorate determines the risk model to be utilized in the Corporate Risk Management (CRM) process parallel to ISO 31000 Risk Management Standard. CRM groups risks as Strategic, Operational, Financial, Compliance and Reputational Risks. Water-related risks are considered both in CRM (Enterprise Risk Management; ERM) system in parallel to ISO 31000 Risk Management Standard and internal Environmental Risk Management System in parallel to ISO 14001 Environmental Management System Standard for identification and assessment of corporate and asset level risks. During these assessments, we use; reputable tools on the market such as WRI Aqueduct, WWF-DEG Water Risk Filter; and regional government databases to define risk probabilities and risk impact levels. While managing our short-term water-related risks we use our ISO 14001 Environmental Management System. Our medium and long term water risks are covered by our CRM, ISO 31000 Risk Management Standard and we also use IPCC climate projections and their impact on precipitation. Toros Agri and Tekfen Construction have ISO 14001 certified EMS. Therefore, water risks are assessed by using internal company methodology since 2004. Moreover, for CDP Water Security reporting, we get external consultancy while reviewing the accuracy of our water-related risks.

The first step of risk management is identification at which we define risk, determine root causes, define risk type, determine related risks and the responsible owner. Identification includes risks whether or not their source is under the control of the organization, even though the risk source or cause may not be evident. Risk identification includes an examination of the knock-on effects of particular consequences, including cascade and cumulative effects. It also considers a wide range of consequences. As well as identifying what might happen, it is necessary to consider possible causes and scenarios that show what consequences can occur.

The risk assessment is carried out in the second stage at which the risk's gross impact, gross probability, both with a scale of 1-very low to 5-very high and the gross risk score is calculated by multiplying gross impact and gross probability and graded as low (1-4), medium (5-14) or high (15-25). Risk is analysed by determining consequences, likelihood, and other attributes. Existing controls and their effectiveness are also taken into account.

The third stage is addressing the risk (reduction, transfer, abstention, and acceptance). Actions and the cost of actions are determined in the fourth stage by root cause analyses and detailed risk elimination methods/improvement of controls. The tracking of these actions make up the fifth step. The responsible owner tracks and notifies the Risk Manager in due time. All risk management operations including actions and status tracking are followed by Group Company Risk Managers with the help of HSE Managers when it comes to climate/water related risks.

Risks are graded based on a portfolio approach. Risk portfolio including risks with grades more than a certain threshold is reported to the BoD every two months. Therefore, these risks are also tracked by the BoD through Early Detection of Risks Committee who consolidates the risk assessments conducted by each Group Company Board and makes decisions on management actions.

Company Level:

Top management of each Group company uses risk management actively in decision making. CRM is integrated into main planning processes such as strategic planning, business planning and operational management. Risks associated with important decisions are identified and graded. In addition, top management of companies make sure proper precautions are designed, applied and the process is run effectively. Tekfen Group Companies do regular risk assessments in every 2 months and report to the Holding. Risk assessment of high risk projects, activities, locations, tasks and operational areas are done more frequently.

Asset Level:

Each asset has its own risk assessments. Site HSE Management identifies/assesses water-related risks and reports to Project/ Workplace Manager who notifies site specific critical risks to Company Risk Manager. Projects/ workplaces also use CRM methods defined above.

We identify, assess and respond to our short-term water risks (up to 1 year) via ISO 14001 EMS. Our medium (1-5) and long term (5-10 years) water risks are covered by our CRM.

In 2018, we conducted our first stakeholder analysis to identify material sustainability issues covering a wide-range of issues including water management, and have incorporated the outcomes into our risk identification and management approach.

## 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 as additional cost or loss of revenue arising out of a disaster, change in market conditions, failure of a product, or similar events. If the financial impact resulting from our direct operations or from our entire value chain is more than >5% of EBITDA (singular impact) or >2.5% of EBITDA (continuous impact), this situation is called Substantive Financial Impact. This substantive financial impact threshold is defined in our Corporate-wide Risk Management Procedure as the highest impact criteria (Impact Criteria level 5) which is determined as the overall impact based on the magnitude and the probability of a risk and its impact(s).

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 direct operations.

Our monitoring process for assets and operations 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. In line with our company-wide risk assessment process, substantive risks/impacts with impact grades more than a certain threshold are monitored and reported to the BoD every two months for action determination.

We consider substantive change covering our operations as any financial impact varying more than +/- 5%.

We have used this method on a scenario analysis on our Toros Agri fertilizer plants. As an example to explain the process, our Mersin Plant is located 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 located in Samsun, Mersin and Ceyhan to be exposed to substantive water risks and substantive strategic and financial impact the most. At these facilities (especially Samsun), in the absence of adequate amount of water, the production will directly be disrupted and the water need cannot be easily supplied from other sources as the amount is substantial (97.6% of total water withdrawal). While this constitutes a small number of facilities (3 out of 45 in the reporting period), they represent approximately 22% of our total revenue and we consider this revenue ratio as substantive.

### 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

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

1-25

**Comment**

This facility is our Toros Agri Samsun Fertilizer Plant.

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**Country/Region**

Turkey

**River basin**

Other, please specify

Tarsus

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

1-25

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

1-25

**Comment**

This facility is our Toros Agri Mersin Fertilizer Plant.

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**Country/Region**

Turkey

**River basin**

Other, please specify

Ceyhan

**Number of facilities exposed to water risk**

1

**% company-wide facilities this represents**

1-25

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

1-25

**Comment**

This facility is our Toros Agri Ceyhan Fertilizer Plant.

**W4.2**

**(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.**

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**Country/Region**

Turkey

**River basin**

Other, please specify

Yesilirmak, Ceyhan, Tarsus, Marmara, Akarcay, Akdeniz, Gediz

**Type of risk**

Regulatory

**Primary risk driver**

Higher water prices

**Primary potential impact**

Increased production costs

**Company-specific description**

Along with basic WASH services provision needs, water is an indispensable raw material for our operations. Water is being used in fertilizer production plants in Samsun, Mersin, and Ceyhan. Water is also being used for producing stone fruit as well as saplings in Tekfen Agri premises spreading across Western Turkey (with 7 out of 10 facilities located in high baseline water-stressed areas).

As a result of the fact that water stress is increasing in Turkey, a potential increase in (or the introduction of) water prices are likely to be implemented. This will directly cause an increase in our before-mentioned companies' and locations' production costs as they make up around 99.4% of our total water withdrawal.

Therefore, increasing water stress in our production locations might impact our bottom line if water prices increase considerably.

**Timeframe**

4 - 6 years

**Magnitude of potential impact**

Medium

**Likelihood**

Very likely

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

9,113,375

**Potential financial impact figure - minimum (currency)**

**Potential financial impact figure - maximum (currency)**

**Explanation of financial impact**

A large portion of Tekfen's total water withdrawal results from Toros Agri and Tekfen Agri activities. Both companies depend on water to carry on production.

The water withdrawn from a dam and wells in Toros Agri's three production facilities and freshwater and groundwater withdrawn at Tekfen Agri's locations with high baseline water stress level equals to 4.46 million m<sup>3</sup>. We are currently not paying any fees for water (3.98 million m<sup>3</sup>) at Toros Agri plants. However, due to water stress, this may change in the future. If we base the prices on average water price in Turkey in 2018 (around 2.29 USD/m<sup>3</sup>), we would have a USD 9.1 million annual liability.

**Primary response to risk**

Increase investment in new technology

**Description of response**

In the reporting period, we have conducted a number of projects to achieve higher water efficiency and maximize the water reuse/recycle rate both in Toros Agri and Tekfen Agri Facilities (asset level) in line with the vision stated in our Water Policy highlighting the alignment with international initiatives such as SDG 6.

A new project was implemented in 2018 for collecting and reusing all surrounding water between 10 megaliters to 15 megaliters (depending on the adequateness of conductivity and pH levels) in the sulfuric acid unit and demineralization unit in Samsun fertilizer plant. In addition, the

establishment of a new wastewater treatment and recovery plant in Mersin was included in the investment plan of Toros Agri. The facility is planned to be operational in 2020. Moreover, there is a planned investment to reuse the outlet of ammonia compressor cooling water in Samsun Plant instead of directly discharging. By doing this we aim to reuse up to 100 megaliters of water.

As part of Tekfen Agri operations, maximized installation of efficient and new technology irrigation systems (drip clips with up to 50% water savings and smart filtering automated systems up to 15% water savings) to eligible orchards were completed. In addition, 7 humidity sensors and 5 meteorological stations to optimize water use (up to 20% water savings) were installed in 5 orchards. This application will continue in line with our business growth strategy.

**Cost of response**

10,480,000

**Explanation of cost of response**

The total investment amount for Toros Agri water efficiency projects implemented in 2018 was approximately USD 130,000 and new wastewater treatment and recovery plant investment was USD 10,350,000.

In addition, the total investment figure for the described response for Tekfen Agri was around USD 40,000.

The total realized investment amount for enabling water efficiency and reuse projects implemented in the reporting period amounts to USD 10.5 million.

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**Country/Region**

Turkey

**River basin**

Other, please specify

Yesilirmak, Ceyhan, Tarsus, Marmara, Akarcay, Akdeniz, Gediz

**Type of risk**

Physical

**Primary risk driver**

Increased water stress

**Primary potential impact**

Reduction or disruption in production capacity

**Company-specific description**

IPCC RCP 4.5 scenario projections foresee a decrease in mean precipitation and WRI Aqueduct Water Risk Atlas foresees an increase in baseline water stress risk levels for Turkey. And our operations are located in high and extremely high water stressed areas described by WRI Aqueduct tool.

That means, a potential increase in water stress will increase pressures coming from the stakeholders on our operations. So these pressures may directly affect our operations and result in reduced production capacity as part of Toros Agri and Tekfen Agri operations.

Considering that 99.4% of our total water withdrawal takes place in these 2 companies' locations with high baseline water stress, an increase in the water stress levels causing less water availability will result in lower production of fertilizers and stone fruit both of which need water as primary raw material.

Increased water stress poses great risk for Tekfen Agri as the fruits being produced needs a certain quality & quantity of water timely. Otherwise not only the production capacity but also the quality of the products yielded will also be negatively impacted, causing further loss in revenue due to both reduced unit product price as well as less product compliant with customer requirements.

**Timeframe**

4 - 6 years

**Magnitude of potential impact**

High

**Likelihood**

Likely

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

23,000,000

**Potential financial impact figure - minimum (currency)****Potential financial impact figure - maximum (currency)****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%) to extremely high (more than 80%) in areas where our Agri-Industry companies Toros Agri and Tekfen Agri operate. Due to the effect of this potential increase in water stress and resulting water scarcity (may even be inability to have access to enough quality and quantity of water), our fertilizer and recently acquired stone fruit production activities can be adversely affected. As having enough freshwater is vital for especially our Agri-Industry, in the absence of enough water even to cause a 5% decrease in production capacity, Toros Agri's and Tekfen Agri's revenues will directly be affected. In 2018, both companies' fertilizer and stone fruit production/sales related total revenue was USD 460 million. Estimating a 5% loss in revenue due to this risk may result in a USD 23 million revenue loss.

**Primary response to risk**

Secure alternative water supply

**Description of response**

As part of diversifying or securing additional (or alternative) water sources, a number of response methods are applied and planned based on needs and locations. For example, as part of Toros Agri fertilizer production activities generally draw fresh water from groundwater wells. Only the fresh water requirement of our Samsun facility is drawn from the nearby dam reservoir. In the recent years, 40 additional wells have been opened in Samsun and permissions have been taken so in case any problems occur in the dam, the water demand will be met through these wells. Same method has been applied in Mersin fertilizer plant in the reporting period by opening up 6 new wells to make sure there are alternative supply sources to the existing and operational wells. For Tekfen Agri, water need for irrigation is met mostly through rainwater and groundwater wells. In order to benefit from rainwater the most, rainwater collection and storage ponds are established as well as wells. These realized or precautionary response strategy will enable water security at our most water intensive operations on asset level.

**Cost of response**

56,140

### **Explanation of cost of response**

Cost of response includes the investment realized in 2018 to open 6 new groundwater wells in Mersin facility. Total cost is USD 33,000 opened which includes initial investment (machinery, digging, labor etc.), as well as necessary permits.

Moreover, as part of Tekfen Agri operations, we have installed a rainwater collection pond (USD 1,140) and opening of a 2 new wells in Kemer orchard (USD 22,000).

Total cost of response in 2018 therefore equals to USD 56,140.

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### **Country/Region**

Turkey

### **River basin**

Other, please specify

Yesilirmak, Ceyhan, Tarsus, Marmara, Akarcay, Akdeniz, Gediz

### **Type of risk**

Reputation & Markets

### **Primary risk driver**

Increased stakeholder concern or negative stakeholder feedback

### **Primary potential impact**

Brand damage

### **Company-specific description**

We are aware that all stakeholder groups require companies to be responsible and manage their non-financial performance as well as their financial. As part of leading environmental concerns, GHG emissions and water consumption has become topics of great importance for stakeholders, especially investors. According to leading international investor survey conducted by EY, we see that 97% of institutional investors now evaluate and make their investment decisions considering non-financial data including environmental aspects such as water management. As part of Tekfen operations, our Agri-Industry companies Toros Agri and Tekfen Agri have operations that use intensive water representing



99.5% of Tekfen Holding's total water withdrawal. Together with the fact that agricultural sector is among the ones that is likely to be impacted by climate change and other environmental impacts, and Turkey is expected to be one of the countries to be most affected by the water crisis, we can say that if we take no action to manage and transparently disclose our water performance, leading stakeholders such as investors but also shareholders, non-governmental organizations and customers would not consider our water management practices to be effective and sufficient. This can seriously damage Tekfen's brand reputation while causing loss in stock prices as 47.24% of Tekfen Holding shares are traded in the Borsa Istanbul.

**Timeframe**

4 - 6 years

**Magnitude of potential impact**

Medium

**Likelihood**

More likely than not

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

6,520,040

**Potential financial impact figure - minimum (currency)**

**Potential financial impact figure - maximum (currency)**

**Explanation of financial impact**

The estimated potential financial impact figure was calculated with the assumption of 1% decrease in Tekfen Holding stock price due to brand damage resulting from the defined risk. In 2018 our average stock price was USD 3.73 for 174.8 million shares on free float. Assuming a 1%

decrease per share, we may be faced to a financial impact of USD 6.5 million. If no action is taken to prevent this risk or to reduce its impact, we may be facing this risk over the medium term (up to 5 years) with a risk of getting a higher potential financial over the long-term.

**Primary response to risk**

Adopt water efficiency, water re-use, recycling and conservation practices

Water Policy

**Description of response**

Having placed great importance to our stakeholder expectations and brand value, we cautiously define our response strategy. Our recently published and publicly available Water Policy (2018), signed by our CEO, states our standpoint and principles regarding water management. Accordingly, Tekfen has been reporting to the CDP Water Security Program for the second year now to ensure the transparent disclosure of water management practices. In the context of Enterprise Risk Management, water-related risks and opportunities are included in our risk inventories, together with defined responsibilities for mitigation measures and following actions. We monitor our water withdrawal and discharge from 100% of our facilities. Another principle stated in the policy is to establish and operate a wastewater treatment plant where the local infrastructure is inadequate. Moreover, CDP water trainings were provided to Toros Agri and Tekfen Agri's white collar employees to raise awareness. We also implement water efficiency initiatives as well as having close relations with public institutions, local water authorities and being an active member in leading NGO's on sustainability such as Business Council on Sustainable Development (Turkish branch of WBCSD).

**Cost of response**

10,536,000

**Explanation of cost of response**

The stated cost of response includes the cost of wastewater treatment plant in Mersin (USD 10,350,000), total investment made in 2018 to achieve treated water reuse at Toros Agri (USD 130,000) and Tekfen Agri (USD 40,000). Moreover, measures such as membership fees and external consultancy services (USD 16,000).

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**Country/Region**

Turkey

**River basin**

Other, please specify

Various River Basins in Turkey where agricultural activities take place

**Type of risk**

Physical

**Primary risk driver**

Declining water quality

**Primary potential impact**

Increased compliance costs

**Company-specific description**

Nitrates related pollution is caused through the introduction of excessive amounts of nitrogen to surface and ground waters, mainly as a result of agricultural practices. About 50-70% of nitrogen input to water came from agriculture and nitrate pollution may increase in the coming years (medium term).

One of the leading agri-environmental indicators is the nitrate pollution of groundwater. Due to wrong/over application of fertilizers, along with environmental characteristics such as average temperature and precipitation as co-factors, there is a risk of nitrate pollution in groundwater sources are likely to get higher over the medium term. Based on the EU Directive, Turkey has a regulation in place for Protection of Water Against Agricultural Nitrate Pollution. If the nitrate concentration levels get higher, there is a risk of compliance cost to be introduced as part of encouraging farmers and fertilizer producers to adopt sustainable agriculture practices.

Fertilizer production we undertake as part of Toros Agri operations has high stake in managing nitrate pollution. Therefore, if such a compliance cost is introduced, we may be faced with additional cost per tonne of nitrate containing fertilizer products we produce, namely Calcium ammonium nitrate (CAN) and Ammonium Nitrate (AN) fertilizers. This will increase our compliance costs.

**Timeframe**

More than 6 years

**Magnitude of potential impact**

Low

**Likelihood**

About as likely as not

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

2,625,000

**Potential financial impact figure - minimum (currency)**

**Potential financial impact figure - maximum (currency)**

**Explanation of financial impact**

Tekfen Agri revenue covering the sales of Calcium ammonium nitrate (CAN) and Ammonium Nitrate (AN) fertilizers CAN and AN was USD 17.5 million in 2018. Assuming a 5% additional compliance cost applied to these products, we would face a USD 875,000 additional cost. Moreover, in the long run, this may result in a decrease in sales of these products as a result of probable limitations introduced to the fertilizers acceptable by authorities. If we include an estimation of a 10% drop in sales of these products (based on 2018 actual revenue) due to limitations, this may result in an additional USD 1.75 million potential loss. Therefore a drop in sales and compliance costs would reach USD 2.6 million.

**Primary response to risk**

Engage with customers

**Description of response**

Supporting agriculture as the biggest privately-owned concern in its industry, Toros Agri not only feels a responsibility to provide farmers with high-quality fertilizers but also undertakes social responsibility projects focused on the development of Turkish agriculture in general and improving the living standards of those whose livelihood is farming in particular. With the aim of preventing nitrate pollution as well as supporting sustainable agricultural practices, Toros Agri launched a Mobile Training Bus (Toros Academy) & Mobile Technical Team project in 2018 covering Turkey's predominantly agricultural regions and which has begun spreading the "4R" (the four "rights" of good fertilizer practices: the

right source, the right rate, the right time, and the right place) practices/awareness among farmers. By doing so, we aim to prevent nitrate pollution of water at the very focal point, farming practices.

**Cost of response**

380,000

**Explanation of cost of response**

The cost of response to this risk includes the total expenditure realized as part of farmer training project during the reporting period; USD 380,000 which includes the cost of training materials, trainers, vehicles, etc.

**W4.2a**

**(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.**

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**Country/Region**

Turkey

**River basin**

Other, please specify

Yesilirmak, Ceyhan, Tarsus, Marmara, Akarcay, Akdeniz, Gediz and various other basins in Turkey

**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 in 2030 (according to the optimistic scenario, SSP2 RCP 4.5) is high (40-80%) and extremely high (more than 80%) in many parts of Turkey. In addition, majority of Turkey has medium to high risk in terms of drought severity.

Therefore, the farmers will be affected heavily because of water-related problems in medium to long term. The impact on agriculture due to water stress may result in a reduction of sales in solid fertilizers.

**Timeframe**

>6 years

**Magnitude of potential financial impact**

High

**Likelihood**

Likely

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

56,300,000

**Potential financial impact figure - minimum (currency)**

**Potential financial impact figure - maximum (currency)**

**Explanation of financial impact**

Toros Agri fertilizer sales is USD 563 million based on 2018 figures. When we use WRI Aqueduct Water Risk Atlas, projected change in water stress in 2030 compared to 2020 will be 1.4 to 2 times higher. That means, farmers will be adversely affected. Some of the farmers will stop farming because of water-related problems.

The impact on the water stress on the farmers may result in a reduction of sales in solid fertilizers. Therefore, a 10% reduction (around USD 56.3 million) in Toros Agri revenues were considered based on 2018 figures.

### **Primary response to risk**

Develop new products and/or markets

### **Description of response**

A Research and Development Center was established in Toros Agri. The aim is to develop new and innovative products that require less water and avoids water pollution. Special fertilizers, developed by Toros Agri, are products that completely water soluble 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 which will extend our existing market. Toros Agri considers them a high potential product group. We have increased special fertilizer sales by 49% in 2018 compared to 2017.

### **Cost of response**

1,240,000

### **Explanation of cost of response**

Toros Agri authored a first in the country's fertilizer-manufacturing industry by opening an R&D center at its Mersin plant. This plant, which has been awarded Ministry of Industry and Technology certification, is the first center of its kind in Turkey devoted to plant nutrition and nutrients. Engaging in scientific studies to meet the agricultural sector's demands and needs, the center gives priority to the development of new products that will help improve agricultural productivity. Employing a staff of 33 people, the center's goals include developing new products that will further diversify Toros Agri's plant nutrients portfolio as well as addressing such issues as improving existing products, developing production processes, optimization, production-related energy conservation, and reducing environmental impact.

The cost of response covers the initial investment made for Mersin Research and Development Center for development of special fertilizer products (USD 715,000) was invested so far in as well as the operational cost of the R&D centre in the reporting period (USD 525,000).

## W4.3

**(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

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

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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**

According to WRI Aqueduct Water Risk Atlas, projected change in water stress between 2020 and 2030 (SSP2 RCP 4.5 scenario) is high (40-80%) and extremely high (>80%) in many parts of Turkey. That means, existing and traditional products, production techniques will have to change soon. Therefore, as a leading company in Agri-Industry business area, development of new fertilizers is a strategic opportunity. To realize this strategic opportunity, Toros Agri authored a first in the country's fertilizer-manufacturing industry by opening an R&D center at its Mersin plant. This plant, which has been accredited by the Ministry of Industry and Technology, is the first center of its kind in Turkey devoted to develop more efficient and water-soluble liquid fertilizers which will help improving agricultural productivity. One of the first developments of R&D Center is special fertilizers that completely water soluble and are being used in conjunction with modern irrigation techniques such as drip and rain irrigation. Drip irrigation is becoming 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 which will extend our existing market. Toros Agri considers them a high potential product group. We have increased special fertilizer sales by 49% in 2018 compared to 2017.



**Estimated timeframe for realization**

Current - up to 1 year

**Magnitude of potential financial impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

8,500,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact**

Total fertilizer production of Toros Agri was 1,603 thousand tonnes in 2018. The specialty fertilizer portfolio was enriched by the addition of Toros Organomix (worm castings), CalMag, two new entries with new ingredients in the water-soluble NPK market (Nutriactive and Greenfeed) and FloraTech (lawn fertilizer) both with lower water needs and carbon footprint. Toros Agri pioneered the specialty fertilizer product group in Turkey and continues to have a significant presence in it. The company's operations in this market continued to increase in 2018, with increase in sales by 49% year-on and reaching a total of 29 thousand tonnes equivalent to an; (a) 1.8% of total production which is 0.8% higher than the previous year, and (b) increase in revenue of USD 8.5 million.

---

**Type of opportunity**

Efficiency

**Primary water-related opportunity**

Improved water efficiency in operations

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

With the increasing water stress, improving water efficiency in our operations is a strategic opportunity for us, since we have water-intensive production activities. (e.g. fertilizer production, fruit production, hydro test etc.). If we can't access the necessary amount and quality water, our operations will be affected adversely.

Any measure we implement to achieve greater reduction in water withdrawal levels have also multi-benefits such as actual as well as potential future operating cost savings and reduced environmental impact while increasing our water security.

To realize this opportunity, as a responsible corporate citizen, we have issued our Water Policy that includes principles, commitments.

We have defined the roles and responsibilities of Top Management, Group Companies, employees and our partners. We have established HSE&Q Coordination Group to develop water-related projects, comply with principles and commitments mentioned in the Policy. At the asset level, we have started to measure and monitor critical water consumption and started to develop water-related projects.

As an example, to improve water efficiency in our operations, we have installed humidity sensors and meteorological stations in our orchards. By implementing this new technology in our orchards, we easily and efficiently control irrigation and we have achieved 20% water savings. As this was the first year of reporting for Tekfen Agri, we will see the tangible consumption savings in 2019.

**Estimated timeframe for realization**

Current - up to 1 year

**Magnitude of potential financial impact**

Low

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

591,965

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

### **Explanation of financial impact**

The financial impact represents the potential cost savings gained through implementation of a water reuse project at Toros Agri Samsun Facility. This initiative results in a 150,000 m<sup>3</sup> reduction in water withdrawal at the plant. Moreover, by installing METOS system (humidity sensors and meteorological stations) in Adala, Afyon, Çanakkale and Kemer orchards of Tekfen Agri we achieved enable an achievement of 20% water savings resulting in 108,500 m<sup>3</sup> of realized savings. By avoiding these water consumption, we created a monetary savings of USD 591,965 based on average 2018 water price (ISKI price was used in calculation; 2.29 USD/m<sup>3</sup>). There are a number of additional water efficiency / reuse initiatives to be implemented, however, as the estimated amount of water saving cannot be foreseen, we cannot yet quantify the further financial impact of this opportunity.

---

### **Type of opportunity**

Products and services

### **Primary water-related opportunity**

Increased sales of existing products/services

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

We are aware that all stakeholder groups require companies to be responsible and manage their non-financial performance as well as their financial. Moreover, as part of leading environmental concerns, they also require products with lower GHG emissions and water consumption, especially customers.

With the aim of using this concern and expectations a leverage to create an opportunity, Tekfen Real Estate commits to develop all new residential estates with LEED Green Building certification. As these buildings realize energy and water efficiency for their tenants, they are becoming more and more preferred by the customers for their environmentally friendly and cost saving aspects. Taking into account our latest project completed in the previous reporting period, HEP Istanbul LEED certified residential building, we foresee a potential of sales increase in these kind of projects that result in a direct revenue increase for Tekfen Real Estate Company. This opportunity presents a company-wide benefit while on a wider scale results in cost saving benefit for the customers during usage phase. As with all other opportunities, we consider this opportunity as substantive as this requires no additional measures than our business as usual practices.

### **Estimated timeframe for realization**

4 to 6 years

**Magnitude of potential financial impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

40,000,000

**Potential financial impact figure – maximum (currency)**

50,000,000

**Explanation of financial impact**

This financial impact range was calculated based on the assumption of 50% to 100% increase in sales of LEED certified building HEP Istanbul Project's 2018 revenue covering a long term horizon due to gradual increase in customer awareness and resulting shift in their preferences to choose environmentally friendly and cost effective housings. The realized revenue gained through HEP Istanbul Project in 2018 was USD 25.4 million. Therefore, the provided estimated range is 50% to 100% higher than the current reporting period revenue reaching between USD 40 to 50 million.

## W5. Facility-level water accounting

### W5.1

**(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 Agri Samsun Plant

**Country/Region**

Turkey

**River basin**

Other, please specify  
Yesilirmak

**Latitude**

41.241734

**Longitude**

36.457503

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

119,283

**Comparison of withdrawals with previous reporting year**

Higher

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

118,061

**Comparison of discharges with previous reporting year**

Higher

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

1,221

**Comparison of consumption with previous reporting year**

Higher

**Please explain**

Our Samsun Fertilizer Plant operates in the stated location. Data provided in megaliters are obtained through direct measurement. Withdrawal amount has increased by 8.9%, Discharge amount has increased by 8.9% and the consumption has increased by 11.22%. The amount of increase realized between 2017 and 2018 is a direct result of the 7.5% increase in production volume at Samsun Plant. While classifying the magnitude of change from previous year data, we consider the change up to +/- 5% as "about the same", 5% to 20% as "higher/lower, and above 20% as much higher/lower. We consider the future trend of as increase in line with strategic business growth plan.

---

**Facility reference number**

Facility 2

**Facility name (optional)**

Toros Agri Mersin Plant

**Country/Region**

Turkey

**River basin**

Other, please specify  
Tarsus

**Latitude**

36.819615

**Longitude**

34.673121

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

3,321

**Comparison of withdrawals with previous reporting year**

Higher

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

902

**Comparison of discharges with previous reporting year**

Higher

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

2,419

**Comparison of consumption with previous reporting year**

Higher

**Please explain**

Our Mersin Fertilizer Plant operates in the stated location. Data provided in megaliters are obtained through direct measurement. Withdrawal amount has increased by 6%, Discharge amount has increased by 7% and the consumption has increased by 5.6%. The amount of increase realized between 2017 and 2018 is a direct result of the 4% increase in production volume at Mersin Plant. While classifying the magnitude of change from previous year data, we consider the change up to +/- 5% as "about the same", 5% to 20% as "higher/lower, and above 20% as much higher/lower. We consider the future trend of as increase in line with strategic business growth plan.

---

**Facility reference number**

Facility 3

**Facility name (optional)**



Toros Agri Ceyhan Plant

**Country/Region**

Turkey

**River basin**

Other, please specify

Ceyhan

**Latitude**

36.92355

**Longitude**

35.983394

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

652

**Comparison of withdrawals with previous reporting year**

Much lower

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

211

**Comparison of discharges with previous reporting year**

Much lower

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

441

**Comparison of consumption with previous reporting year**

Much lower



**Please explain**

Our Ceyhan Fertilizer Plant operates in the stated location. Data provided in megaliters are obtained through direct measurement. Water withdrawal and consumption levels have decreased by 25.4% and 40.6% respectively, while the discharge amount has increased by 61.5%. The amount of decrease realized between 2017 and 2018 is a direct result of the 6.2% decrease in production volume at the Plant. 54% of the 61.5% increase realized in discharge levels are a result of inclusion of the water discharged to third party coal storage areas for further use (dust suppression). While classifying the magnitude of change from previous year data, we consider the change up to +/- 5% as “about the same”, 5% to 20% as “higher/lower, and above 20% as much higher/lower. We consider the future trend of as increase in line with strategic business growth plan.

**W5.1a**

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

**Facility reference number**

Facility 1

**Facility name**

Toros Agri Samsun Plant

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

0

**Brackish surface water/seawater**

115,386

**Groundwater - renewable**

0

**Groundwater - non-renewable**

0



**Produced/Entrained water**

3,891

**Third party sources**

6

**Comment**

At our Samsun Plant, water withdrawal data from all sources are obtained via direct measurements. Third party sources represent the municipal supplier and there are no withdrawal from fresh surface water or any groundwater sources.

---

**Facility reference number**

Facility 2

**Facility name**

Toros Agri Mersin Plant

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

0

**Brackish surface water/seawater**

0

**Groundwater - renewable**

3,321

**Groundwater - non-renewable**

0

**Produced/Entrained water**

0

**Third party sources**

0

**Comment**

At our Mersin Plant, water withdrawal data is obtained via direct measurements. Water withdrawal only takes place from renewable groundwater sources.

---

**Facility reference number**

Facility 3

**Facility name**

Toros Agri Ceyhan Plant

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

0

**Brackish surface water/seawater**

0

**Groundwater - renewable**

652

**Groundwater - non-renewable**

0

**Produced/Entrained water**

0

**Third party sources**

0

**Comment**

At our Ceylan Plant, water withdrawal data is obtained via direct measurements. Water withdrawal only takes place from renewable groundwater sources.

**W5.1b**

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

---

**Facility reference number**

Facility 1

**Facility name**

Toros Agri Samsun Plant

**Fresh surface water**

0

**Brackish surface water/Seawater**

118,061

**Groundwater**

0

**Third party destinations**

0

**Comment**

At our Samsun Facility, water is only discharged to the sea once it is used for; (a) cooling - without any processing and (b) for domestic use – after treated at 2 biological package wastewater treatment plants. The amount of water discharged is obtained via direct measurement done by

continuous measurement system and reported to the MoEU. There is no discharge to third parties, nor is any water we discharge is further used by other organisations.

---

**Facility reference number**

Facility 2

**Facility name**

Toros Agri Mersin Plant

**Fresh surface water**

0

**Brackish surface water/Seawater**

902

**Groundwater**

0

**Third party destinations**

0

**Comment**

At our Mersin Facility, water is only discharged to the sea once it is treated at our wastewater treatment facility. The amount of water discharged is obtained via direct measurement. There is no discharge to third parties, nor is any water we discharge used by other organisations.

---

**Facility reference number**

Facility 3

**Facility name**

Toros Agri Ceyhan Plant

**Fresh surface water**

0

**Brackish surface water/Seawater**

98

**Groundwater**

0

**Third party destinations**

113

**Comment**

At our Ceyhan Facility, water is discharged to the sea once it is treated at our wastewater treatment facility. And some of the withdrawn water is given to third party neighbouring coal storage facilities who recycle this water and use it for washing the storage area. The amount of water discharged is obtained via direct measurement. There are no additional discharge destinations at this facility for the given reporting period.

## 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 Agri Samsun Plant

**% recycled or reused**

1-10%

**Comparison with previous reporting year**

Higher

**Please explain**

At our Samsun facility we reuse the water used at steam turbine generator (STG). Our approach to monitor our water recycle/reuse consolidation approach is in line with approach defined by CDP. We obtain the recycled/reused water data for process water via direct measurement while the condensed recycled/reused water amount is determined via calculation. In the reporting period, we have invested in a system that enables the reuse of water from sulfuric acid as well as enabling further water to be collected from our STG unit. As a result of this investment together with a 7.5% increase in production volume, we have increased our water reuse ratio by 10.85% from the previous period. Samsun facility reuses 1.1% of the water it uses. This increase trend will continue in line with the production increase planned for this facility.

---

**Facility reference number**

Facility 2

**Facility name**

Toros Agri Mersin Plant

**% recycled or reused**

1-10%

**Comparison with previous reporting year**

Much 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 is obtained and reused again. Our approach to monitor our water recycle/reuse consolidation approach is in line with approach defined by CDP. We obtain the recycled/reused water data via calculation. The amount of total reused water depends on the production duration. If there are scheduled stops at the production, the reused water quantity



decreases. During the reporting period, our Mersin Plant has recycled/reused 9% of its total water use, which was almost 65% increase from the ratio of water recycled at the same Plant in the previous reporting period.

---

**Facility reference number**

Facility 3

**Facility name**

Toros Agri Ceyhan Plant

**% recycled or reused**

None

**Comparison with previous reporting year**

About the same

**Please explain**

There is currently no water recycling in Ceyhan Plant.

## W5.1d

**(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?**





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

### **Water withdrawals – volume by source**

---

**% verified**

Not verified

**What standard and methodology was used?**

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

### **Water withdrawals – quality**

---

**% verified**

Not verified

**What standard and methodology was used?**

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

### **Water discharges – total volumes**

---

**% verified**

76-100

**What standard and methodology was used?**

The waste water discharged to the sea in Samsun, amounting 98.6% of our total water discharge as a Group, is monitored in real time by the Ministry of Environment and Urbanisation through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation. This amount of discharge is due to sulphuric acid, STG, ammonia storage unit and phosphoric acid units. All the discharge waters of the mentioned units are collected and delivered to Deep Sea Discharge System. Discharge water is continuously pumped to the system by means of the pumps. The water is continuously monitored by the Ministry. Continuous samples are taken on the final line where all the discharge waters of the facilities are collected. The parameters measured in the system are pH, conductivity, dissolved oxygen, flow rate and temperature. Therefore, water discharge volume, destination, treatment method, quality parameters are continuously verified by Ministry of Environment and Urbanisation.

**Water discharges – volume by destination**

---

**% verified**

76-100

**What standard and methodology was used?**

The waste water discharged to the sea in Samsun, amounting 98.6% of our total water discharge as a Group, is monitored in real time by the Ministry of Environment and Urbanisation through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation. This amount of discharge is due to sulphuric acid, STG, ammonia storage unit and phosphoric acid units. All the discharge waters of the mentioned units are collected and delivered to Deep Sea Discharge System. Discharge water is continuously pumped to the system by means of the pumps. The water is continuously monitored by the Ministry. Continuous samples are taken on the final line where all the discharge waters of the facilities are collected. The parameters measured in the system are pH, conductivity, dissolved oxygen, flow rate and temperature. Therefore, water discharge volume, destination, treatment method, quality parameters are continuously verified by Ministry of Environment and Urbanisation.

**Water discharges – volume by treatment method**

---

**% verified**

76-100

**What standard and methodology was used?**

The waste water discharged to the sea in Samsun, amounting 98.6% of our total water discharge as a Group, is monitored in real time by the Ministry of Environment and Urbanisation through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation. This amount of discharge is due to sulphuric acid, STG, ammonia storage unit and phosphoric acid units. All the discharge waters of the mentioned units are collected and delivered to Deep Sea Discharge System. Discharge water is continuously pumped to the system by means of the pumps. The water is continuously monitored by the Ministry. Continuous samples are taken on the final line where all the discharge waters of the facilities are collected. The parameters measured in the system are pH, conductivity, dissolved oxygen, flow rate and temperature. Therefore, water discharge volume, destination, treatment method, quality parameters are continuously verified by Ministry of Environment and Urbanisation.

**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, amounting to 98.6% of our total water discharge as a Group, is monitored in real time by the Ministry of Environment and Urbanisation through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation. This amount of discharge is due to sulphuric acid, STG, ammonia storage unit and phosphoric acid units. All the discharge waters of the mentioned units are collected and delivered to Deep Sea Discharge System. Discharge water is continuously pumped to the system by means of the pumps. The water is continuously monitored by the Ministry. Continuous samples are taken on the final line where all the discharge waters of the facilities are collected. The parameters measured in the system are pH, conductivity, dissolved oxygen, flow rate and temperature. Therefore, water discharge volume, destination, treatment method, quality parameters are continuously verified by Ministry of Environment and Urbanisation.

**Water discharge quality – temperature**

---

**% verified**

76-100

**What standard and methodology was used?**

The waste water discharged to the sea in Samsun, amounting 98.6% of our total water discharge as a Group, is monitored in real time by the Ministry of Environment and Urbanisation through the continuous wastewater monitoring system according to Continuous Wastewater Monitoring Tracking Systems Regulation. This amount of discharge is due to sulphuric acid, STG, ammonia storage unit and phosphoric acid units. All the discharge waters of the mentioned units are collected and delivered to Deep Sea Discharge System. Discharge water is continuously pumped to the system by means of the pumps. The water is continuously monitored by the Ministry. Continuous samples are taken on the final line where all the discharge waters of the facilities are collected. The parameters measured in the system are pH, conductivity, dissolved oxygen, flow rate and temperature. Therefore, water discharge volume, destination, treatment method, quality parameters are continuously verified by Ministry of Environment and Urbanisation.

**Water consumption – total volume**

---

**% verified**

Not verified

**What standard and methodology was used?**

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

**Water recycled/reused**

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**% verified**

Not verified

**What standard and methodology was used?**

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

## W6. Governance

### W6.1


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

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

### W6.1a

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

	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	Defining water as the source of life itself, we operate in business areas such as agriculture and construction where water is a vital source for continuation of our operations together with the need to maintain WASH service provision for all our employees. Tekfen Holding has a corporate-wide HSE Policy which defines our vision, commitments and principles related to health, safety and environment. We are committed to protect the environment through prevention of pollution along with reducing the carbon footprint and conservation of energy and other natural resources, especially water while making sure we effectively manage and try to minimize our business' impact on water. As an important step taken to further express the value water possessed for our business and in all 3 business areas, we have recently issued a separate Water Policy to reflect the rising importance of water stress especially in the regions we operate in as well as its impact on each of our 3 business areas. Our publicly available Water Policy can be found at our website and outlines our objective and

	<p>Reference to international standards and widely-recognized water initiatives</p> <p>Company water targets and goals</p> <p>Commitment to align with public policy initiatives, such as the SDGs</p> <p>Commitments beyond regulatory compliance</p> <p>Commitment to water-related innovation</p> <p>Commitment to stakeholder awareness and education</p> <p>Commitment to water stewardship and/or collective action</p> <p>Acknowledgement of the human right to water and sanitation</p> <p>Recognition of environmental linkages, for example, due to climate change</p>	<p>lays out the path leading to fundamental water-related aspects such as setting long term targets, supporting water stewardship at all our operational locations, enabling innovation that achieves water performance improvement etc. Tekfen Holding takes climate change and water related impacts very seriously and continuously updates its policies with relevant and up-to-date issues to become a leading sustainable company.</p> <p> 1</p>
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 1Tekfen Holding 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) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.**

Position of individual	Please explain
Board Chair	Climate- and water-related issues including performance review, reporting and risk/opportunity management are among the responsibilities of Tekfen Holding's Chairman of the Board. Board Members are directly informed on climate issues in Tekfen Holding Board Meetings. Chairman of the Board states Tekfen's values, one of them is "the protection of nature and the environment". The Chairman of the Board follows climate- and water-related issues closely. Therefore, we can say that our Chairman of the Board is the highest responsible person with the ultimate authority to make decision and manage climate-as well as water-related issues.
Chief Executive Officer (CEO)	Tekfen Holding's CEO has the ultimate responsibility to monitor and approve the annual CDP Water Security disclosure content. The CEO follows the reporting outcomes and reviews the improvement points identified for the short-medium and long term. Therefore, the CEO had an active responsibility while managing water-related issues in Tekfen Holding covering the whole content of this CDP disclosure.

## 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	Board Members are informed regularly on climate- and water-related issues in the form of global trends as well as corporate performance, risks and opportunities. CEO has the executive power for important issues such as strategy, risks/opportunities, targets etc. In September 2017, the Sustainability Committee (SC) was established and is being chaired by Vice President of Corporate Affairs. The Committee is also a subcommittee of the Corporate



		<p>Overseeing major capital expenditures</p> <p>Providing employee incentives</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding strategy</p> <p>Reviewing and guiding corporate responsibility strategy</p> <p>Reviewing innovation/R&amp;D priorities</p> <p>Setting performance objectives</p>	<p>Governance Committee. Sustainability Committee reports critical issues at least once a year to the Corporate Governance Committee. The Corporate Governance Committee reviews the annual outcomes and recommendations presented by the Sustainability Committee and notifies the Board of Directors for reviewing and guiding strategy, major action plans, policies etc. The Board of Directors reviews and guides business plans and approves annual budgets. Sustainability Committee sets performance objectives for climate change and water management while also monitoring the realization of climate change and water-related objectives on behalf of the Board of Directors. Changes in emissions &amp; water usage data are also reported to the Board of Directors annually while water-related risks that are classified as over the critical threshold are directly reported to and evaluated by the Board as part of Corporate Risk Management process every two months if such cases arise.</p>
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**W6.3**

**(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).**





**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**

Accountability on water-related issues start at the top, with the Executive Board, which includes our CEO as the Chairman, is responsible for providing governance and oversight over strategy, operations as well as management of the Holding and its Group Companies. In order to do so, the Executive Board holds bi-weekly meetings where they discuss and delegate the authority to manage day-to-day operations of the Company including climate- as well as water-related strategy. Therefore, as the chairman of the Executive Board, our CEO represents the highest responsibility for overall governance of water-related issues.

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

Other C-Suite Officer, please specify  
Vice President of corporate Affairs

**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**

The Vice President (VP) of Corporate Affairs is the Chairman of the Sustainability Committee and also the member of the Executive Board. The VP of Corporate Affairs briefs the Executive Board that consists of the CEO and Group Vice Presidents regularly on current and emerging climate change- and water-related issues including material risks and opportunities together with overall water performance.

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

Sustainability committee

**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**

The Sustainability Committee is formed under the Corporate Governance Committee in order to help the Board oversee and effectively manage water-related issues with a holistic approach. The Sustainability Committee is regularly being notified on sustainability related issues deemed crucial by the Holding HSE and Quality Coordinator who is also a member of the Sustainability Committee.

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

**(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, not currently but we plan to introduce them in the next two years

**W6.5**

**(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

### **(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?**

Activities regarding water related direct and indirect activities are coordinated both by the Sustainability Committee and the HSE&Q Coordinatorship. An HSE&Q Coordination Group was established with representatives from all group companies who meet periodically, chaired by the Holding HSE&Q Coordinator. Strategies and actions regarding climate change and water management are discussed at the HSE&Q Coordination Group and submitted to Sustainability Committee (SC). After the approval of SC and/or BoD, the decisions are shared with Tekfen Group Company representatives. The implementation of the actions are monitored by Holding HSE&Q Coordinatorship and the results are reported to Tekfen Group of Companies' President& CEO.

Additionally, the SC meets quarterly to discuss the Group Companies' progress and strategies on a wide range of sustainability issues including climate change and water strategies. As a result of the discussions held at both groups together with the feedback received from the Board of Directors, we consequently plan and initiate our direct and indirect activities with our value chain, including the policy makers and authorities on water-related issues. By initiating this approval and decision-making process, we eliminate any risk of, and ensure there are no inconsistencies between, our activities and our Water Policy. However, if any gaps to fulfill our Water Policy are identified, it will immediately be addressed at the first BoD meeting.

## W6.6

### **(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?**

Yes (you may attach the report - this is optional)

 TEKFEN HOLDING ANNUAL REPORT 2018.pdf

## W7. Business strategy

### 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	<p>Baseline water stress, flood occurrence, drought severity, groundwater stress, regulatory and reputational risks, current and future market opportunities are mainly used to determine long term business objectives. We used the predictions of the international tools and studies while setting our goals, strategies, and financial planning. We have determined that the development of new fertilizers suitable for future conditions is vital for us. Another concern is access to good quality and necessary amount of water, stakeholder pressure and brand value loss because of water related issues. Therefore, water efficient production, building environmental friendly projects are another long term objectives for us.</p> <p>For example, we have published Water Policy in 2017 which defines principles and commitments including water risk assessment, integration of risks into strategy, goal and target setting for water management. We have set an objective to invest in R&amp;D projects and established an R&amp;D centre to facilitate the development of water-soluble fertilizers requiring less water in usage phase. Commercialisation of these products will provide us a new market. Moreover, Tekfen Real Estate has committed to develop all new projects with LEED Green Building certification to achieve value chain water efficiency. For this reason on average 11-15 years was chosen for the time horizon for water-related issues affecting our business objectives.</p>
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	11-15	<p>We developed our Sustainability Strategy in 2018 which includes water management and published in the first Sustainability Report covering 2018 operations. Our Corporate Risk Management includes risks related to water security. We have established an HSEQ Coordination Group formed by company's HSE representatives. 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. Water security issues are managed more systematically since the launch of our Water Policy. Water stressed areas are monitored and analysed, new technology investments are made to minimize water consumption in the facilities and potential future fee liabilities (e.g. to increase water reuse in Samsun Facility, renewal of potable water system to prevent leakages in Ceyhan Facility, installation of humidity</p>

			sensors and meteorological stations (METOS) in Tekfen Agri orchards etc.). We try to prevent loss in revenue due to anticipated higher water costs over longer term. We also made a large investment in an R&D Center in our Mersin plant. We anticipate consumer behaviour shift to more efficient fertilizers using less water. Our intention is to exploit this potential market via R&D activities held in this center. We also aim to realize positive linkage with long term carbon emissions reductions by enabling energy efficiency in usage phase.
Financial planning	Yes, water-related issues are integrated	11-15	Water related issues are always considered in our financial planning and will continue to remain 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 WASH services. In our facilities, we make constant investments in new technology to minimize our water use & footprint. 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 megaliters/year of water. As part of recently acquired Alanar Fruit activities, we install (7 in 2018) relative humidity sensors and (5 in 2018) meteorological stations and modern irrigation systems to achieve water savings. All these efforts will decrease our 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 perspective. 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 in Mersin facility was included in the investment plan of Toros Agri with the aim of maximizing our water recycling ratio and therefore reduce water withdrawal and is planned to become 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?**

Row 1



**Water-related CAPEX (+/- % change)**

1,700

**Anticipated forward trend for CAPEX (+/- % change)**

3,000

**Water-related OPEX (+/- % change)**

12

**Anticipated forward trend for OPEX (+/- % change)**

5

**Please explain**

The stated % change values are directly calculated based on our financial data. Our water-related CAPEX has increased as we acquired Alanar Fruit stone fruit producing Company and invested in 7 humidity sensors and 5 meteorological stations on our orchards as well as installing more efficient irrigation systems; namely drip irrigation and smart filter automation systems and opening/maintaining wells towards starting as of 2017 year-end. Moreover, there was compressor replacement investment at our Samsun Plant in 2017. We expect a significant (over 3000%) increase in our Water CAPEX due to planned Mersin Wastewater Treatment and Recovery Plant investment. Moreover, in line with our business strategy in Tekfen Agri agricultural operations, our water-related OPEX is likely to increase as an estimate of around 5% while we estimate our water-related CAPEX to remain about the same.

We have made renovations regarding our water infrastructure in 2018 and will continue to do so in 2019.

**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

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

Yes

### W7.3b

**(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	<p>We considered IPCC RCP 4.5 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 change scenarios, RCP 4.5 and RCP 8.5. 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. Our direct operations (Tekfen Agri orchards) and value chain will be directly impacted as limited amount of water resources available will need to be used more efficiently. According to RCP 4.5 scenario, our Mersin and Ceyhan Plants are likely to face pressuring water stress beyond 2046.</p>	<p>Seeing RCP 4.5 climate scenario analysis and its potential precipitation projections as well as the implications that may cause, especially in southern Turkey, has encouraged us to evaluate water risks and adjust our strategy over long-term. In line with this outcome, we have invested in Research and Development Center in Mersin to develop special fertilizer products that should be used with modern irrigation methods such as drip and rain irrigation. Special fertilizers are in liquid form and can dissolve in water. Previously, we were importing special fertilizer products rather than producing them internally. Via this R&amp;D Center investments in this area, we are looking to capitalize on the impacts of climate change in Turkey. For example, we are aware that climate change will have a considerable impact on agriculture. In order to support resilience of the sector, as part of Tekfen Agri’s first international collaboration under the EU Horizon 2020 Programme, we participate in PRIMA (Partnership For Research and Innovation in the Mediterranean Area) GENDIBAR Project, aiming to ensure</p>



			sustainable agricultural practices in barley production value chain including increasing productivity while achieving energy and water savings during production. Tekfen Agri is the only Turkish company engaged this project.
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## W7.4

### (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.

## W8. Targets

### W8.1

#### (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	Company-wide targets and goals Business level specific targets and/or goals	Targets are monitored at the corporate level	Tekfen Holding considers water as one of the most valuable resources on our planet. Water, the source of life itself, is being used for cooling, cleaning, manufacturing, irrigation, testing, sanitation and hygiene purposes in our operations. Tekfen identifies and assesses water related risks and opportunities, integrates water risks into its business strategy, sets meaningful goals and targets at business units and implements innovative business solutions to achieve these goals and targets, These management principles are



	<p>Activity level specific targets and/or goals</p> <p>Site/facility specific targets and/or goals</p>	<p>Goals are monitored at the corporate level</p>	<p>publicly announced and committed at Corporate-wide Water Policy encouraging Tekfen group companies to set targets and goals in line with this.</p> <p>Targets and goals are set by individual businesses based on activity type, risks and opportunities of the business unit while Tekfen Holding sets policies and goals which are supported by the business units' policies, and aim at reaching a company-wide goals and targets.</p> <p>Depending upon their sectors and geographical locations, the Group Companies have different sensitivity levels for each water-related aspect. Business units generally set targets and goals in parallel to their specific risks and opportunities, location, environment, regulatory requirements etc.</p> <p>As an example, Tekfen Construction Headquarter sets targets related to the releases of uncontrolled spills to land or water. Projects/ sites set also target to support this target. The target realizations are monitored monthly by Tekfen Construction HSE&amp;Q Department and Holding HSE&amp;Q Coordinatorship.</p> <p>While identifying and realizing water-related forward-looking strategic goals and targets, we also consider climate scenario projections (IPCC RCP 4.5) and their possible impact on our corporate-wide operations covering all Group Companies.</p> <p>All goals and targets are monitored at the corporate level (both Group Company and Holding Headquarters).</p>
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### 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 pollution reduction

**Level**

Site/facility

**Primary motivation**

Reduced environmental impact

**Description of target**

% of tests/samples compliant with legal standards for effluent discharge. This target in our TANAP CS 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. The investment made to achieve this target consists of lab analysis fees. Moreover, with “beyond legal requirements” vision, we also target to comply with IFC effluent limits which is considerably more strict than national legal limits.

If wastewater is not properly treated, the environment and human health can be negatively impacted. These impacts can include harm to wildlife, oxygen depletion, restrictions on recreational water use, restrictions on fish and shellfish harvesting and contamination of drinking water. Therefore treated wastewater quality is very important for us.

**Quantitative metric**

Other, please specify

% of tests/samples compliant with legal

**Baseline year**

2018

**Start year**

2018

**Target year**

2018

**% achieved**

100

**Please explain**

This is a year-on-year rolling target that was active in 2018. Our performance against this target was monitored monthly. All discharge tests and samples have been tested to be in line with national legal standards for effluent discharge, meaning the % achievement rate was 100%.

---

**Target reference number**

Target 2

**Category of target**

Water, Sanitation and Hygiene (WASH) services in the workplace

**Level**

Site/facility

**Primary motivation**

Risk mitigation

**Description of target**

Tekfen commits to provide good quality water for its employees. Therefore, it is standard practice to provide the employees with safe-reliable drinking water, as safe drinking water is recognized as a basic human right and a cost effective measure of reducing disease (i.e., preventative medicine). This target covers % tests/samples to be fully compliant with legal standards for potable water. This target in our TANAP CS 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. The investment made to achieve this target consists of lab analysis fees.

**Quantitative metric**

Other, please specify

% of tests/samples compliant potable water

**Baseline year**

2018

**Start year**

2018

**Target year**

2018

**% achieved**

100

**Please explain**

This is a year-on-year rolling target that was active in 2018. Our performance against this target was monitored monthly. All potable water tests results have been tested to be in line with legal standards for potable water, meaning the % achievement rate was 100%.

---

**Target reference number**

Target 3

**Category of target**

Water pollution reduction

**Level**

Site/facility

**Primary motivation**

Reduced environmental impact

**Description of target**

The pipeline and tanks are routinely pressure tested to ensure operational integrity. Hydrostatic testing is the application of internal pressure above the normal or maximum operating pressure for a fixed period of time, utilizing water as a test medium.

The most significant environmental risk associated with hydrostatic testing is the potential to deposit, either through an uncontrolled release during testing, or the controlled return of water to the watershed, a deleterious substance (contaminated water) into waters frequented by fish, or in an area where such a substance may enter any such water. Our Target covers % tests/samples to be fully compliant with Project hydro test water discharge requirements. This target in our TANAP CS pipeline project was introduced for environmental impact reduction/control purposes, therefore it is monitored monthly at a corporate level. While this is not a legal limit, we have introduced this target for watershed security purposes.

**Quantitative metric**

Other, please specify

% tests/samples compliant with Project metrics

**Baseline year**

2018

**Start year**

2018

**Target year**

2018

**% achieved**

100

**Please explain**

This is a year-on-year rolling target that was active in 2018. Our performance against this target was monitored 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%.

---

**Target reference number**

Target 4

**Category of target**

Watershed remediation and habitat restoration, ecosystem preservation

**Level**

Site/facility

**Primary motivation**

Water stewardship

**Description of target**

Our target is: zero complaints received regarding negative impact to third-party water quality or quantity. This target in our TANAP CS pipeline project has been introduced as part of water stewardship.

**Quantitative metric**

Other, please specify

Number of complaints received

**Baseline year**

2018

**Start year**

2018

**Target year**

2018

**% achieved**

100

**Please explain**

This is a year-on-year rolling target that was active in 2018. Our performance against this target was monitored monthly and therefore the whole year 0 complaints received regarding third party water quality. There were no complaints in 2018, therefore 100% completion rate was determined.

---

**Target reference number**

Target 5

**Category of target**

Water discharge

**Level**

Site/facility

**Primary motivation**

Reduced environmental impact

**Description of target**

As part of our Tekfen Construction project site operations, our target is to achieve 100% treatment of domestic waste water via on site as well as available near-by third party wastewater treatment facilities. The aim of this target is to reduce our environmental impact and prevent water pollution.

**Quantitative metric**

Other, please specify

% proportion of wastewater that is treated

**Baseline year**

2018

**Start year**

2018

**Target year**

2018

**% achieved**

100

**Please explain**

This is a rolling year-on-year target that was active in 2018. Our performance against this target was monitored monthly. Our on-site waste water treatment facilities operated at full capacity and the access amount of domestic wastewater was transferred to third party treatment facilities to maintain the domestic waste water treatment rate at 100%. As a result of these measures taken in 2018, 100% completion rate was determined for this target.

## W8.1b

**(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**

Shared value

**Description of goal**

Tekfen Construction has introduced a questionnaire, "Product Life Cycle Check List", for suppliers with high environmental impact products /services in line with ISO 14001:2015 Standard. The goal is to raise the awareness of environment related high-risk suppliers using a life cycle thinking approach by answering our questionnaire and in the medium term help them contribute to our Water Policy vision by improving their water management practices while managing water-related risks effectively This is important for Tekfen Holding to holistically and effectively maintain or contribute to water security and water stewardship in the medium to long term time horizon. Currently, we measure progress as the response rate to our checklist.

**Baseline year**



2018

**Start year**

2018

**End year**

2018

**Progress**

In 2018, 28 out of 41 environmentally high-risk and/or impact suppliers, identified by each Project's HSE Manager, have answered our questionnaire. This resulted in a 68.3% response rate. Our goal is a yearly rolling one and our aim is therefore eventually having all our suppliers to answer the questionnaire to help improve water stewardship and risk mitigation. Tekfen Construction projects are at temporary locations and the nature of each project varies. Therefore, it is not possible to set a threshold number but we aim to make sure all strategic suppliers on each project is identified and encouraged to respond to our Product Life Cycle Check List.

---

**Goal**

Promotion of sustainable agriculture practices

**Level**

Business

**Motivation**

Shared value

**Description of goal**

Toros Agri's goal is to constantly raise awareness on sustainable agricultural practices. Toros Agri's main customers are farmers who have a significant impact on both water and proper fertilizer use. Therefore, Toros Agri gives great importance to raising farmers' awareness. In order to do so, educational videos have been prepared and are continually shared with all interested parties. In addition to the trainings, Toros Agri also launched the "Toros Farmer Application", a digital app, which 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 cost effective

and quality produce in agricultural production which in return helps our domestic economy as well as increasing the income of the producer while creating shared value for the community.

**Baseline year**

1980

**Start year**

1980

**End year**

2018

**Progress**

Toros Agri, 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 and well-being. In the fertilizer sector, farmer-training seminars, firstly and solely applied by Toros Agri and are organized throughout the country, 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. To date, 7000 farmers producing on over 7500 fields together with 800 sellers are benefited from the “Toros Farmer App”. As a result of efforts made in 2018, through the use of the App, a total of 14% increase in productivity was measured through the appropriate application of irrigation and fertilizers. We consider this a success and aim to increase the number of farmers included in the app and therefore achieve even greater efficiency.

---

**Goal**

Promotion of sustainable agriculture practices

**Level**

Business

**Motivation**

Water stewardship

**Description of goal**

Tekfen Agri has begun its agricultural production following the acquisition of Alanar Fruit. Efficient use of irrigation water is focal point of the fruit production planning. Therefore, Tekfen Agri aims to initiate efficient/water conserving new irrigation system which is supported by humidity sensor sensors and meteorological stations. The new system assesses the exact water need of the fields and opens/closes irrigation system automatically. The goal is to continually increase the number of orchards owned by Tekfen Agri/Alanar Fruit using the new irrigation system.

**Baseline year**

2018

**Start year**

2018

**End year**

2018

**Progress**

In the reporting period, among 8 orchards operated by us, we initiated drip irrigation clip system in 2 and automated irrigation system in 1. However, 4 of these orchards are not suitable for new technology irrigation systems due to the intensity and size of the plantation. As a result of these system implementation, with drip irrigation clip system app. 50% and with automated system around 15% water efficiency was achieved on average per application. Moreover, we have installed 7 humidity sensors and 5 meteorological stations in our orchards and on average achieved 20% water and energy savings. As this was the first year of reporting for Tekfen Agri, we will see the tangible proof of our success in the upcoming periods but we consider these outcomes a success.

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**Goal**

Providing access to safely managed Water, Sanitation and Hygiene (WASH) in workplace

**Level**

Site/facility

**Motivation**

Commitment to the UN Sustainable Development Goals

**Description of goal**

As part of our site/facility specific operations, our overall goal is to provide good quality and adequate WASH services to all our employees at all times, especially for Tekfen Construction sites, often located in remote locations due to the nature of projects. This is ultimately a part of our best practice vision. This goal covers all our facilities. All necessary capital and operational budget is allocated to meet this goal.

**Baseline year**

2018

**Start year**

2018

**End year**

2018

**Progress**

The ultimate measure of success for this goal is to receive no complaints regarding inadequacy of WASH services on our premises from any of our employees/workers or subcontractors operating on the same site. In 2018, we have not received such complaint and always made sure we have alternative water supply sources in cases of any problems occurring with existing sources. This goal is assessed and our progress is tracked on an annual basis. Therefore, as a result of no complaints received in 2018, we consider 100% achievement of this goal.

## W9. Linkages and trade-offs

### W9.1

**(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

**(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**

As part of operational cost management and environmental impact minimization in our direct operations, we produce electricity by recovering waste heat in our Samsun and Mersin plants through Steam Gas Turbines. This way, instead of purchasing electricity from the grid, we produce our electricity that is being consumed at our plants and the access amount is sold to the grid. We are also reusing water in our waste heat recovery electricity generation facilities. This way we are using less water and also reducing the need for external electricity purchase. During electricity generation, the steam is condensed and the condensed water obtained is used again and condensing water is reused instead of with drawing water again to produce steam. By doing so, we are using less water and also reducing the electricity need to get & condition that water to be used in the process.

**Policy or action**

In order to increase the positive impact this linkage creates, we are constantly trying to maximize the reused water amount in our waste heat recovery electricity generation facilities. This way we will increase our water efficiency while reducing the need for energy to withdraw and condition that water. As a result of actions made during the reporting period to maximize the benefit of this linkage, we have increased our water reuse ratio by almost 18.8% compared to 2017.

---

**Linkage or tradeoff**

Linkage

**Type of linkage/tradeoff**

Decreased energy use

**Description of linkage/tradeoff**

In our direct operations, we use membranes in our demineralized water production process. Mindful of the operational cost management and resource efficiency, we have replaced membranes which enabled a decreased in regeneration period from once every 2 days to once every 4 days in our Samsun Plant. Increased regeneration period results in less electricity consumption as well as water that is used by the pumps.

**Policy or action**

Our action regarding maximizing the positive impact of this linkage is to implement initiatives to increase the regeneration duration. As part of the efforts made we reduced regeneration period from once every 2 days to once every 4 days. By replacing the membranes, we estimate an achievement of 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**

As part of our direct operations, we have implemented an initiative to collect and reuse all surrounding water in the Sulfuric Acid Unit and demineralization unit in Samsun Plant. While this process allows us to reduce water withdrawals by reusing the existing water, on the other hand we will use more energy during collection and re-pumping of the collected water.

**Policy or action**

During the reporting period, we have invested in the described water recollection system which also involved the installation of a 30 kW water pump. While this investment enables us to save up to 150 megaliters of water annually, at the same time it creates an additional monthly increase around 9,000 kWh in energy consumption.

**Linkage or tradeoff**

Linkage

**Type of linkage/tradeoff**

Decreased energy use

**Description of linkage/tradeoff**

As part of our newly acquired agricultural production operations, we place great importance on managing our water usage effectively. One of the agricultural sector's main problems is the wrong irrigation practices resulting in more water usage. In order to distribute the water used in irrigation in orchards, energy is also required. Therefore, we can say that there is a direct linkage between water and energy consumption at our orchards. If well managed, this linkage creates great opportunities not only financially but also environmentally (by reducing resource use) and socially (distributing best practice to contribute to local communities' well-being).

**Policy or action**

In order to benefit from this linkage and maximize its positive impact, we have installed new irrigation systems on our orchards together with placing humidity sensors and meteorological stations to identify the exact amount of water needed by the plant at any given time so the excessive water (and energy) use have been prevented. As the irrigation system renewal enables up to 20% water and energy efficiency, we can say that all necessary actions are done and CAPEX budget allocated to scale up this initiative.

## W10. Verification

### W10.1

**(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

### W-FI

**(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

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

	Job title	Corresponding job category
Row 1	President & Chief Executive Officer	Chief Executive Officer (CEO)

### W11.2

**(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)].**

Yes

## Submit your response

**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