KAO Corporation - Water 2018

W0. Introduction

W0.1

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

Kao. The Company is a Japan-based company that operates through two business segments: Comsumer Product and Chemical. The Consumer Product segment has three divisions. The Beauty Care division offers prestige cosmetics; premium skincare products such as face washes, as well as premium hair care products including shampoos, hair styling products and hair colouring products, among others. The Human Health Care division provides food and beverage products such as drinks ; sanitary products including hygiene products and paper diapers, as well as personal health products such as bath additives. The Fablic and Home Care division offers fabric care products including detergents for apparel use, and home care products including detergents for kitchen use. The Chemical segment provides oil and fat products such as fatty acids; functional materials products such as surface acting agents and additives for plastic use, as well as specialty chemical products such as essences, among others.

The beauty care business accounted for 39.3% of total turnover in fiscal 2017; human health care business,19.8%; fablic and home care business, 22.5%; and chemical business,20.8%. The Company reported JPY 1,489.4b in revenues and 33,560 permanent employees at December 31,2017.

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 2017	December 31 2017

W0.3

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

Australia
Austria
Belgium
Canada
China
China, Hong Kong Special Administrative Region
Czechia
Denmark
Finland
France
Germany
Indonesia
Italy
Japan
Malaysia
Mexico
Netherlands
New Zealand
Norway
Philippines
Republic of Korea
Russian Federation
Singapore
South Africa
Spain
Sweden
Switzerland
Taiwan (Province of China)
Thailand
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

W0.4

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

JPY

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	Vital	- Primary use of freshwater in direct operation and indirect operation Freshwater is used as raw materials of our products steam, cooling water for their production. and as drinking water, water for sanitation, for our employees. Even for indirect operations, we use freshwater for the same purpose. - Why the chosen importance rating was selected for freshwater in direct operations and indirect operation Main products of our company include products used on human bodies, or body washing products. That is why our factories and our supply chain require pure water with a certain quality as a material. Fresh water is also needed for safety of drinking water for our employees. Kao's business plan up to 2030 includes plans to increase sales. However, since changes in business domains are not planned, we do not expect any significant changes in water dependence per sales in both our direct and indirect operations.
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Not important at all	- Primary use of non-freshwater At our Mexico Plant, we obtain water recycled at another facility, purify it, and use it as steam or cooling water. None of our suppliers use non-freshwater. - Why the chosen importance rating was selected for non-freshwater in direct operation and indirect operation According to Kao's business plan until 2030, we plan to increase sales and the production volume at our plants in Mexico, which use recycled water. Accordingly, the importance of recycled water at the plant is vital. Since none of Kao's suppliers in the ingredient cultivation and procurement stages recognize non-freshwater as important according to surveys conducted by Kao, non-freshwater is not important at all in this regard. According to Kao's business plan until 2030, an increase in sales is planned, but changes in business domains are not. For this reason, we do not expect any significant change in water dependence per sales in both our direct and indirect operations.

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
Water withdrawals – total volumes	100%	The person in charge at each base checks the amount of water withdrawals every month or every other month and enters the relevant data for each intake source into a database managed by the Group. The person in charge at the head office checks the values entered into the database every month; if this person identifies any significant data fluctuation, he or she confirms the cause with the relevant base.
Water withdrawals – volumes from water stressed areas	100%	The person in charge at each base checks the amount of water withdrawals every month or every other month and enters the relevant data for each intake source into a database managed by the Group. The person in charge at the head office checks the values entered into the database every month; if this person identifies any significant data fluctuation, he or she confirms the cause with the relevant base.
Water withdrawals – volumes by source	100%	The person in charge at each base checks the amount of water withdrawals by source every month or every other month and enters the relevant data for each intake source into a database managed by the Group. The person in charge at the head office checks the values entered into the database every month; if this person identifies any significant data fluctuation, he or she confirms the cause with the relevant base.
Produced water associated with your metals & mining sector activities - total volumes	<Not Applicable>	<Not Applicable>
Produced water associated with your oil & gas sector activities - total volumes	<Not Applicable>	<Not Applicable>
Water withdrawals quality	100%	The person in charge at each base checks the water withdrawals quality like as coulor, odor, temperature every day. If there were any problems, the person in charge report to the water supplyer to solbe it.
Water discharges – total volumes	100%	The person in charge at each base checks the amount of water discharge every month or every other month and enters the relevant data for each intake source into a database managed by the Group. The person in charge at the head office checks the values entered into the database every month; if this person identifies any significant data fluctuation, he or she confirms the cause with the relevant base.

	% of sites/facilities/operations	Please explain
Water discharges – volumes by destination	100%	The person in charge at each base checks the amount of water discharge every month or every other month and enters the relevant data for each intake source into a database managed by the Group. The person in charge at the head office checks the values entered into the database every month; if this person identifies any significant data fluctuation, he or she confirms the cause with the relevant base. Note that the person in charge at the head office knows the discharge destination for each base, and he or she checks whether there is any change to the destinations once a year.
Water discharges – volumes by treatment method	100%	The person in charge at each base checks the amount of water discharge every month or every other month and enters the relevant data for each intake source into a database managed by the Group. The person in charge at the head office checks the values entered into the database every month; if this person identifies any significant data fluctuation, he or she confirms the cause with the relevant base. Note that the person in charge at the head office knows the treatment method for each base, and he or she checks whether there is any change to the destinations once a year.
Water discharge quality – by standard effluent parameters	100%	The person in charge at each base checks the water discharge quality by standard effluent parameters every day. He or she check them by using automatic evaluate equipment or by manual or third party evaluate equipment or under the standard on each base.
Water discharge quality – temperature	1-25	The person in charge at each base checks the water temperature every day. . He or she check them by using automatic evaluate equipment or by manual or third party evaluate equipment or under the standard on each base.
Water consumption – total volume	Please select	Since Kao considers the amount of water consumption to be the difference between the amount of water witharawals and the amount of water discharge, monitoring the amount of water withdrawals and the amount of water discharge achieves monitoring of the amount of water consumption. The person in charge at each base checks the amount of water withdrawals and the amount of water discharge every month or every other month and enters the relevant data for each intake source into a database managed by the Group. The person in charge at the head office checks the values entered into the database every month; if this person identifies any significant data fluctuation, he or she confirms the cause with the relevant base.
Water recycled/reused	100%	At our facilities where the water is recycled, we monitor the operation status of such facilities to observe the amount of water recycled. At other facilities where the water is not recycled, the person in charge at our head office conducts a survey of all bases once a year to determine whether the water is recycled or reused.
The provision of fully-functioning, safely managed WASH services to all workers	100%	In accordance with the basic policy on environmental safety, we provide a fully-equipped water, sanitation and hygiene (WASH) service to all workers at all our bases. At each base, a committee run by each base (for example, the Safety and Health Committee) checks if there is any quality problem in the water and hygiene services used by employees on a daily basis. Kao's headquarters confirms the presence of any problem in water and hygiene services during audits, etc. every year.

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	17295	About the same	Although there was some increase and decrease in each business site, there was no major change in total Kao group. We are in the process of growing business as a corporate group and the total volumes of water withdrawn is expected to increase accordingly.
Total discharges	10892	About the same	Although there was some increase and decrease in each business site, there was no major change in total Kao group. We are in the process of growing business as a corporate group and the total volumes of water discharged is expected to increase accordingly.
Total consumption	6403	About the same	Although there was some increase and decrease in each business site, there was no major change in total Kao group. We are in the process of growing business as a corporate group and the total volumes of water consumption is expected to increase accordingly.

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	21	Higher	WRI Aqueduct	Kao evaluates water risks by taking into account water intake, water quality, reputation, etc., in the next six years or so. The facilities to be evaluated include Kao's own facilities as well as suppliers' plants. WRI Aqueduct allows us to easily acquire the water risks for the above mentioned items at any location as long as its latitude and longitude are known. Kao evaluates the water risks at suppliers' plants, and evaluations based on WRI Aqueduct make it possible to acquire the status of risks in its own facilities and suppliers' plants at the same level.

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	Not relevant	<Not Applicable>	<Not Applicable>	Main products of our company include products used on human bodies, or body washing products. That is why our factories require pure water with a certain quality as a material. Freshwater is also used as drinking water, water for sanitation, for our employees. Therefore we don't use non-fresh water including brackish surface water/seawater. We think that the possibility of using it in the future is low so far.
Brackish surface water/seawater	Not relevant	<Not Applicable>	<Not Applicable>	Main products of our company include products used on human bodies, or body washing products. That is why our factories require pure water with a certain quality as a material. Freshwater is also used as drinking water, water for sanitation, for our employees. Therefore we don't use non-fresh water including brackish surface water/seawater. We think that the possibility of using it in the future is low so far.
Groundwater – renewable	Relevant	5080	Higher	Groundwater withdrawals in 2017 increased than the previous year. In 2017 we added one paper making facility in Fuji Factory. As a result, groundwater withdrawals for the additional equipment increased. It is expected that the amount of groundwater withdrawalsd will increase in line with the increase in the production volume, but we will manage so that the water will not increase excessively.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	Kao has a policy of not using non-renewable groundwater as it was suggested by third-party experts to suspend the use of such water because it is precious. This policy is in line with Kao's corporate message, "Enriching lives, in harmony with nature." In this regard, non-renewable groundwater is relevant. We will not change this policy in the future, so we will not take water from non-renewable groundwater either in the future.
Produced water	Not relevant	<Not Applicable>	<Not Applicable>	Main products of our company include products used on human bodies, or body washing products. That is why our factories require pure water with a certain quality as a material. Freshwater is also used as drinking water, water for sanitation, for our employees. Therefore we don't use non-fresh water including produced/process water. We think that the possibility of using it in the future is low so far.
Third party sources	Relevant	12215	About the same	Main products of our company include products used on human bodies, or body washing products. That is why our factories require pure water with a certain quality as a material. Compared with the previous year, the amount of the water used in 2017 remained almost unchanged. We anticipate an increase in water withdrawals as the business grows in the future but we hope to minimize it by promoting water conservation activities in parallel.

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	2344	Higher	Fuji Factory cleans up the used water with a purification facility inside the plant and then releases it to nearby rivers. Thus, Kao is aware that the amount and quality of water discharged directly affect river water quality. So Kao manage it as the important factor to influent the environment around our factory. In 2017 Fuji Factory added one paper machine in their production line. As a result, water discharged for the additional equipment increased. It is expected that the amount of water discharge will increase as production increases.
Brackish surface water/seawater	Relevant	5813	About the same	In some factories like as Wakayama factory, water discharges that has been cleaned by the purification equipment in their site is flowing into the neighboring sea. Thus, Kao is aware that the amount and quality of water discharged directly affect sea water quality. So Kao manage it as the important factor to influent the environment around our factory. The amount of water discharge in 2017 remained almost unchanged from the previous year. It is expected that the amount of water discharge will increase as production increases.
Groundwater	Not relevant	<Not Applicable>	<Not Applicable>	Groundwater is water that is filtered by natural soil, rich in mineral components, and is often used as a beverage. Kao is also aware that if Kao discharges wastewater into groundwater and said groundwater becomes contaminated due to a reason not attributable to Kao, Kao still cannot escape from moral responsibility, so discharging wastewater into groundwater is an extremely high risk act. Therefore, we have never done drainage to groundwater and we will not do it in the future.
Third-party destinations	Relevant	2735	About the same	Many Kao plants, including those of Kao USA Inc., discharge wastewater into groundwater. Therefore, Kao is aware that the amount and quality of water discharged from such plants matter because they impact the quality of wastewater discharged from processing facilities run by other organizations located downstream of the groundwater. For this reason, Kao manages discharging of wastewater to other organizations as one of the company's critical environmental load items. In this regard, discharging wastewater to other organizations is relevant. Although there was some increase and decrease in each business site, there was no major change in total Kao group. We are in the process of growing business as a corporate group and the total volumes of water discharged is expected to increase accordingly.

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	Less than 1%	About the same	Since no new water recycling facilities were installed in 2017, the use of recycled water was almost at the same level as the previous year. While recycling water reduces the dependency on freshwater and minimizes the impact on the water environment in the surrounding areas, we also predict that greenhouse gas (GHG) emissions will increase because energy is required to operate a recycling facility. Going forward, we may install water recycling facilities if the water intake risk increases at specific plants due to the effects of climate change.

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

26-50

Rationale for this coverage

- A company-specific explanation of how and why these suppliers were selected for reporting Firstly we select suppliers from the aspect of the impact on business, and secondly we select suppliers among the those by the first screening from the aspect of water risks assessed by the method mentioned. As a first screening, we selected suppliers from the aspect of the impact on our business. Secondly we selected suppliers who are particularly risky to be reported as a result of conducting the water risk analysis among the suppliers selected by the first screening. - How suppliers are incentivized to report The response situation and contents to CDP Water supply chain program from a supplier is evaluated in our supplier score card.

Impact of the engagement and measures of success

- information requested from suppliers We request our suppliers to provide related information through the CDP SC Program. Such information includes the amount of water withdrawal and discharge, reduction target, and water risk level and management level at facilities, which we use for the purpose of managing the supply chain. - How the information is used We use the information mainly to confirm the water risk level at the plants of suppliers. In addition, if a facility has a high risk level, we use the information to confirm the supplier's risk management level. - how success is measured We aim to eliminate water risks at plants of suppliers manufacturing ingredients for Kao and to improve the water risk management level of suppliers, thereby reducing the water risks at other plants. To achieve that, we calculate the number of plants of suppliers with water risks that manufacture ingredients for Kao, as well as the level of water risk management performed by such suppliers.

Comment

W1.4b

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

Type of engagement

Incentivizing for improved water management and stewardship

Details of engagement

Water management and stewardship is integrated into supplier evaluation processes
Water management and stewardship is featured in supplier awards scheme

% of suppliers by number

76-100

% of total procurement spend

76-100

Rationale for the coverage of your engagement

Since Kao monitors the plants of all suppliers through the CSR self-assessment in accordance with the Kao Guidelines for Supplier's Assessment, the coverage for both the number of suppliers and the purchase amount is 100%.

Impact of the engagement and measures of success

Kao monitors the plants of all suppliers through the CSR self-assessment in accordance with the Kao Guidelines for Supplier's Assessment to check for any issues. Kao visits suppliers that we have determined pose a risk and we share issues and work to make improvements. We conduct a survey on 29 items, including the presence of a system for managing water in terms of the amount of water used and wastewater management, and manage the fulfilment of criteria by plants as KPIs. In 2017, 94% of plants (of suppliers to Kao Corporation) fulfilled our criteria.

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?

We understand the percentages of the amount of water used at each lifecycle stage of Kao products to be as follows: 87% in the usage stage, 11% in the ingredients procurement stage, and 1% in the manufacturing stage. Accordingly, Kao considers these three stages in which much water is used to be the important phases. For this reason, Kao engages in various activities with consumers, suppliers, and other stakeholders related to our plants.

For consumers, Kao offers plant tours and visits schools to give lectures. We also transmit information in collaboration with the national government, local governments, and other parties involved in distribution. For suppliers, Kao promotes the establishment of water management systems and requests that important suppliers respond to the Carbon Disclosure Project's Supply Chain (CDP SC) Program. As for plants, Kao continues to reduce the amount of water used from the viewpoint of 3R (Reduce, Reuse, and Recycle) and works on joint projects related to water with the local government on-site at each Kao plant. Since these activities by Kao effectively reduce the amount of water used throughout the lifecycles of Kao products, we have set the amount of water used throughout the product lifecycle as well as in each stage (ingredients procurement, manufacturing, and product usage) as important KPIs; we measure the results every year.

W2. Business impacts

W2.1

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

No

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?

Yes, fines

W2.2a

(W2.2a) Provide the total number and financial value of all water-related fines.

Row 1

Total number of fines

1

Total value of fines

33876

% of total facilities/operations associated

3

Number of fines compared to previous reporting year

About the same

Comment

W2.2b

(W2.2b) Provide details for all significant fines, enforcement orders, and/or penalties for water-related regulatory violations in the reporting year, and your plans for resolving them.

Type of penalty
Fine

Financial impact
33876

Country/Region
United States of America

River basin
Other, please specify (Mill Creek)

Type of incident
Other, please specify (Violation of the local gov agreement)

Description of penalty, incident, regulatory violation, significance, and resolution
There was one penalty that was due to late reporting for sewage oil concentration exceeded. We will formulate and implement measures to prevent recurrence.

W3. Procedures

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

Coverage
Full

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

Frequency of assessment
Annually

How far into the future are risks considered?
>10 years

Type of tools and methods used
Tools on the market
International methodologies
Other

Tools and methods used
WRI Aqueduct
Life Cycle Assessment
Internal company methods

Comment

Supply chain

Coverage
Full

Risk assessment procedure
Water risks are assessed as a standalone issue

Frequency of assessment
Annually

How far into the future are risks considered?
>10 years

Type of tools and methods used
Tools on the market
International methodologies
Other

Tools and methods used
WRI Aqueduct
Life Cycle Assessment
Internal company methods

Comment

Other stages of the value chain

Coverage
Partial

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

Frequency of assessment
Annually

How far into the future are risks considered?
>10 years

Type of tools and methods used
Tools on the market
International methodologies
Other

Tools and methods used
WRI Aqueduct
Life Cycle Assessment
Internal company methods

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	Almost all Kao detergents (for example, ATTACK clothing detergent, Bioré body detergent, etc.), which are Kao's key products, use water as the main ingredient. In addition, a large amount of water is used to manufacture such products. Thus, we include the availability of water in watershed or catchment areas in the plants that manufacture the products in the risk assessment. Surfactant, which is an ingredient found in various Kao detergents, is supplied by many suppliers in the chemical sector. Since Kao is aware that suppliers in the chemical sector are highly dependent on water, we include the availability of water in watershed or catchment areas for such suppliers in the risk assessment. Water risk assessment conducted by Kao always includes water availability. In addition, risk assessment on water availability includes both current and emerging issues. For the assessment of our own plants, we use WRI Aqueduct and an internal company method as the assessment tools. For the assessment of our suppliers, we use WRI Aqueduct as well. We use Lifecycle Assessment to conduct assessment throughout the product lifecycle.
Water quality at a basin/catchment level	Relevant, always included	Almost all Kao detergents (for example, ATTACK clothing detergent, Bioré body detergent, etc.), which are Kao's key products, use water as the main ingredient. In addition, a large amount of water is used to manufacture such products, so we have developed or improved various facilities on the assumption that the available water has a certain level of quality. For this reason, we include the water quality in watershed or catchment areas in the plants that manufacture our products in the risk assessment. Surfactant, which is an ingredient found in various Kao detergents, is supplied by many suppliers in the chemical sector. Generally, facilities that specify the water intake quality are also installed at the plants of suppliers in the chemical sector, as in the case of Kao plants. For this reason, we include the water quality in watershed or catchment areas for such suppliers in the risk assessment. Water risk assessment conducted by Kao always includes water quality. In addition, risk assessment on the water quality includes both current and emerging issues. Furthermore, water discharged from plants is not only subject to various limit values, but has also faced tighter regulations in recent years in general. As such, we have also added the current status and future forecast on wastewater quality regulations in the water risk survey. For the assessment of our own plants, we use WRI Aqueduct and an internal company method as the assessment tools. For the assessment of our suppliers, we use WRI Aqueduct as well.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Almost all Kao detergents (for example, ATTACK clothing detergent, Bioré body detergent, etc.), which are Kao's key products, use water as the main ingredient. In addition, a large amount of water is used to manufacture such products. Thus, if there is a conflict with stakeholders regarding water resources in watershed or catchment areas, there is a risk that there will be insufficient water with adequate quality. Kao is also aware that since water is essential for many of Kao's key products when they are used, such conflict will spread beyond the watershed or catchment areas, which may adversely affect Kao's reputation. Surfactant, which is an ingredient found in various Kao detergents, is supplied by many suppliers in the chemical sector. Kao is also aware that a large amount of high-quality water is needed for our suppliers in the chemical sector to operate their plants and that an issue with stakeholders in watershed or catchment areas is a risk factor for the water supply. For this reason, we have added a conflict with stakeholders that has emerged or is likely to emerge in every water risk survey. For the assessment of our own plants, we use WRI Aqueduct and an internal company method as the assessment tools. For the assessment of our suppliers, we use WRI Aqueduct as well.
Implications of water on your key commodities/raw materials	Relevant, always included	Almost all Kao detergents (for example, ATTACK clothing detergent, Bioré body detergent, etc.), which are Kao's key products, consume a large amount of water when the product is used. Thus, the amount and quality of water when the product is used are of great interest. For this reason, we include the amount and quality of water supplied to general households in the assessment items when we conduct a water risk survey. To continue selling such products, we also predict the amount and quality of such water in the future. Surfactant, which is an ingredient found in various Kao detergents, is supplied by many suppliers in the chemical sector. Kao is aware that a large amount of high-quality water is needed for our suppliers in the chemical sector to operate their plants, so we include water risks at our suppliers' plants in every survey. For the assessment of our own plants, we use WRI Aqueduct and an internal company method as the assessment tools. For the assessment of our suppliers, we use WRI Aqueduct as well. We use Lifecycle Assessment for the assessment of products in the usage stage. For the assessment of our own plants, we use WRI Aqueduct and an internal company method as the assessment tools. For the assessment of our suppliers, we use WRI Aqueduct as well.
Water-related regulatory frameworks	Relevant, always included	Water-related regulations include those regarding water intake and wastewater. With respect to water intake, Kao plants in the Philippines and Germany, where a large amount of groundwater is used, are subject to water intake regulations due to the depletion of groundwater. As for wastewater, almost all Kao plants are subject to various regulations, except some plants such as those of Kao (Hefei) Co., Ltd., which only manufacture disposable diaper products and do not discharge water subject to regulations. These regulations generally tend to become stricter in an attempt to stop the worsening trends of the global environment. Therefore, Kao includes the current and future forecast for water-related regulations in the assessment items of every water risk assessment. For the assessment of our own plants, we use WRI Aqueduct and an internal company method as the assessment tools. For the assessment of our suppliers, we use WRI Aqueduct as well.
Status of ecosystems and habitats	Relevant, always included	Most of our plants are located in river basins. The habitat of living things can be found in the areas where our plants are located, as well as in the upstream and downstream of basins. Therefore, our plants may have an impact on the ecosystem. For example, our plant in the Philippines is the largest in a river basin. Therefore, in general, it is recognized that the plant has a dominant impact on the ecosystem and habitat in the relevant river basin. As such, we believe that understanding the current status of the ecosystem and areas where living things grow is important to ensure the continuous operation of the plant and we include the understanding of such status in every water risk assessment. For the assessment of our own plants, we use WRI Aqueduct and an internal company method as the assessment tools. For the assessment of our suppliers, we use WRI Aqueduct as well.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	As published in the Kao Group Health Declaration in 2008 both internally and externally, we are committed to achieving Health and Productivity Management by actively implementing support programs for our employees and their families to achieve a healthy lifestyle, which form the foundation of human resource utilization. Our policy stipulates that the health and safety of all employees have a greater priority over other matters, so the WASH service has been introduced in all work sites. However, if there is an issue with the service, it will violate Kao's policy on human resource utilization. Therefore, this item is managed through a different management system, which assesses the soundness of the WASH service every year. For the assessment of our bases, we use an internal company method as the assessment tool.
Other contextual issues, please specify	Please select	

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

	Relevance & inclusion	Please explain
Customers	Relevant, always included	Many products that Kao group are offering to consumers and clients are washing products, and a lot of water is used when these products are used(for example, ATTACK for landry deterdgent and BIORE for body wash detergent) . Therefore, we recognize that if water risk countermeasures of our products etc. are inferior to those of other companies, there is a risk that our brand value will decline and their sales will decline. We have several methods of engagement with customers. We provide them with the information on water risk and quantity data through CDP water supply chain. We also provide them with the information on water saving for water saving producs.
Employees	Relevant, always included	Many products that Kao group are offering to consumers and clients are washing products, and a lot of water is used when these products are used(for example, ATTACK for landry deterdgent and BIORE for body wash detergent) . Therefore, employees in Kao are promoted to save water in their office. Employees of R&D department are promoted to recogize the importance of development of water saving products and employees of production department are promoted to save water in their operation. Further new employees of R&D need to take recture of natural risks including water stress, climate change and so on. Many of our products use much water at the time of use, so we realize that there is a risk that we will not be able to recruit outstanding employees if we do not educate employees about water who are also consumers.
Investors	Relevant, always included	Investors understand that a large amount of water is needed to use Kao's key products (for example, ATTACK clothing detergent, Bioré body detergent, etc.) and that Kao has a chemical business division, which belongs to the chemical sector. For these reasons, Kao is aware that if it fails to appropriately respond to water risks, it is at risk of not being chosen by investors as an investment target. We have several means to create and maintain relationships with investors. Through CDP Water, the Sustainability Data Book, and our annual report, Kao provides information on our water risk mitigation activities to investors. We also participate in the Ministry of the Environment's Environmental Information Disclosure Project to communicate with investors and NGOs.
Local communities	Relevant, always included	The residents of each community where a Kao plant is located can see a large amount of wastewater discharged from the plant. Kao is aware that if local communities do not correctly understand that such wastewater is appropriately processed and thus does not make a large impact on the regional environment, we are at risk of becoming unable to conduct sustainable plant operations in the relevant community. For this reason, at the Sumida Office where the Tokyo Plant is located, for example, we invite community representatives to the plant to demonstrate our actual plant operations and hold meetings to discuss their thoughts on Kao every year.
NGOs	Relevant, always included	Since NGO employees are also Kao customers, they understand that a large amount of water is used when using Kao's key products (for example, ATTACK clothing detergent, Bioré body detergent, etc.) Therefore, Kao understands that unless we engage in water-related activities, such as provision of water-saving products, there is a risk that NGOs may wage a campaign to damage Kao's brand value. This risk can easily be assumed based on the negative campaign regarding palm oil waged by NGOs against Kao's competitors in the industry in 2014. We collaborate with NGOs in the activities of the CDP, the Ministry of the Environment's Environmental Information Disclosure Project, and other projects.
Other water users at a basin/catchment level	Relevant, always included	Generally, residents near our plants use water obtained from the same water source as that of the water used at our plants. Therefore, we are aware that if a drought occurs and users do not have enough water to use, there is a likelihood that plant operations may be hindered due to demonstrations and the like. To address this, for example, our plants in Japan prepare site reports containing environmental information to communicate with their neighborhoods. At the Sumida Office in Japan, we hold meetings at least once a year to discuss environmental issues, including water issues, with local residents who use water from the same water source as the Office.
Regulators	Relevant, always included	We are aware that changes in laws and regulations pose great risks to the operation of Kao plants, especially the Toyohashi Plant, which is under severe effluent regulations; the Wakayama Plant, which is Kao's main plant; and other plants in China, where regulations change frequently. For example, we support the Water Project, a public awareness campaign let by surveillance agents of the Ministry of the Environment, and we have been involved in the project's activities. Also, we collaborated in water-saving campaign activities led by the Chinese government. We believe that collaborating with law enforcement and regulating bodies enables us to obtain regulatory information without delay.
River basin management authorities	Relevant, always included	Since many Kao plants are chemical plants, a relatively substantial number use a large amount of water (for example, the Wakayama Plant). We are aware that unless we can maintain appropriate, cooperative relationships with the bodies controlling the water sources of our plants, we are at risk of becoming unable to smoothly operate our plants. During regularly held meetings, we confirm with the authorities whether there are any plans to change the policies on regulations. For example, at the Wakayama Plant, we have a regular meeting for the purpose of obtaining information on future upgrades to water supply facilities and water price trends.
Statutory special interest groups at a local level	Relevant, always included	The Kao plants in Mexico and Spain (Qumi-Kao, Kao Corporation, S.A), which are located in areas without an abundant water supply, are at risk of becoming unable to obtain enough water of sufficient quality to operate the plants unless we sometimes conduct joint projects with local incorporated organizations. Qumi-Kao in Mexico once experienced a situation in which a sufficient amount of water could not be secured due to restrictions on taking groundwater. Therefore, Qumi-Kao consulted with statutory special interest groups at the local level and agreed that water discharged from sewage treatment plants in the city would be directly carried in to plants instead of discharging it into rivers. As a result, Qumi-Kao's plant operations were not hindered, and now it can increase production further.
Suppliers	Relevant, always included	We request the information on water risks and quantity data from suppliers through CDP water supply chain program, and get the replys from them. Our main products contain active ingredients which are chemical ingredients and they are generally manufactured with chemical plants with large water consumption, so we recognize that there is risk of raw materials procurement due to drought.
Water utilities at a local level	Relevant, always included	We explain our policy and the situation of our activities to them so as to have them understood through meetings. For example, at Wakayama factory, at least once a year regular meeting is held to exchange information. Many of our factories have chemical plants, so there are factories that have relatively high water consumption (eg Wakayama Plant). We recognize that there is a risk that smooth plant operation will be impossible unless a cooperative relationship with the entity that manages the water facilities of the factory is obtained.
Other stakeholder, please specify	Please select	

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.

Kao identifies, evaluates, and responds to water-related risks at its plants and supplier plants every year.

For its own plants, Kao does the following:

- Uses WRI Aqueduct, the WBCSD Tool, and internal company methods.

- Evaluates short-term water risks by using internal company methods and evaluates long-term water risks by additionally using WRI Aqueduct and the WBCSD Tool.

- For short-term water risks, the person in charge at each plant performs the preliminary evaluation, while the Responsible Care Promotion Office performs the secondary evaluation.

  For long-term water risks, the Responsible Care Promotion Office performs the evaluation and provides information to the person in charge at each plant.

- Kao targets water risks that span over at least 10 years as long-term water risks.

To do so, Kao uses WRI Aqueduct and internal company methods as evaluation tools. We use WRI Aqueduct because it can be used to evaluate the plant risks of suppliers who do not have internal company methods, and it can also evaluate long-term water risks. We use internal company methods to understand the results of evaluations obtained by using WRI Aqueduct at the plant level.

These tools are used to evaluate risks at all Kao plants.

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, only within our direct operations

W4.1a

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

We defined substantive change, measurement and metrics we use for it, threshold for it, both for direct operation and for supply chain as follows:

A.Direct operation

We define substantive change to our business caused by direct operation to be when any own factory shuts down 1 day or more than a day except for scheduled one.

B. Supply chain

We define suppliers that could contribute to substantive change to our business by using a screening process as follows:

1. identify suppliers which are considered to be difficult to be changed to others, for instance deliver exclusive products, and also deliver products as raw materials of our strategic products

2. select suppliers indicated higher risk than the certain standard we set using mainly WRI AQUEDUCT among supplies indified at step 1

C. Review and update

We review and update those metrics and threshold annualy by meeting with relevant departsments.

If water shortage occurs to the supply chain, similar effects as above may occur to the supply chain in a short term as the procurement of materials stops.

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	8	1-25	We recognize that many of the sites in Asia which make up the majority of Kao's bases have water risks.

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
China

River basin
Yangtze River (Chang Jiang)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
Less than 1%

Comment

Country/Region
Philippines

River basin
Other, please specify (Cablig)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-25

Comment

Country/Region
Thailand

River basin
Other, please specify (Bang Pakong)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-25

Comment

Country/Region
Indonesia

River basin
Other, please specify (Saluran Irigasi Kali Malang and Sungai)

Number of facilities exposed to water risk
1

% company-wide facilities this represents

1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-25

Comment

Country/Region
Taiwan (Province of China)

River basin
Other, please specify (Touqian River)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-25

Comment

Country/Region
Mexico

River basin
Balsas

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-25

Comment

Country/Region
Spain

River basin
Other, please specify (El Besos)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-25

Comment

Country/Region
Japan

River basin
Other, please specify (Toyokawa)

Number of facilities exposed to water risk
1

% company-wide facilities this represents
1-25

Production value for the metals & mining activities associated with these facilities
<Not Applicable>

% company's annual electricity generation that could be affected by these facilities
<Not Applicable>

% company's global oil & gas production volume that could be affected by these facilities
<Not Applicable>

% company's total global revenue that could be affected
1-25

Comment

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.

Country/Region
China

River basin
Yangtze River (Chang Jiang)

Type of risk
Physical

Primary risk driver
Increased water stress

Primary potential impact

Constraint to growth

Company-specific description
After conducting an analysis using WRI Aqueduct and the information collected by Kao, we found that water stress is expected to increase in the basin as the population increases. Therefore, we predict that it is highly likely that water price will soar, that the amount of water supply will be limited, and that water pollution and other issues will occur in the relevant region in the future. If that happens, the costs of purchasing water and managing water quality will increase and the amount of production may be limited due to difficulty in purchasing water. As a result, it is expected that business growth in China, which is one of the most important regions for Kao's future growth, will be limited.

Timeframe
More than 6 years

Magnitude of potential impact
Medium

Likelihood
Likely

Potential financial impact
0

Explanation of financial impact
We cannot estimate potential financial impact at the moment. because not fixed developing a strategy for China from 2020 onwards yet. The financial impact on sales will be calculated after finalizing sales plan and plants to manufacture each products. We assume that the increase in personnel and commodity costs, water charges, electricity charges for water management, etc., in China, which affect production activities, will continue to increase after 2020.

Primary response to risk
Establish site-specific targets

Description of response
Kao has set a goal to improve the water usage efficiency in the entire Group by 40% by 2020. Due to high water supply risk in the future, the plant has continued to reduce risks that may hinder business growth by setting a goal higher than the above and implementing activities to improve water usage efficiency. As part of such efforts, the plant is now using rainwater.

Cost of response
20000000

Explanation of cost of response
We have continued to respond to water risks by spending up to 20 million yen per year. If there is a risk that the spending may exceed 20 million yen, an action will be taken after consulting with the SCM Division in Japan.

Country/Region
Japan

River basin
Other, please specify (Toyokawa)

Type of risk
Physical

Primary risk driver
Seasonal supply variability/inter annual variability

Primary potential impact
Reduction or disruption in production capacity

Company-specific description
After conducting an analysis using WRI Aqueduct and the information collected by Kao, we found that the amount of rainfall is expected to be extremely low in the basin depending on the season. For this reason, we expect it to be highly likely that water intake will be limited depending on the season in the relevant region in the future. If that happens, the procurement of water may become difficult and the production amount may become limited. Consequently, some of the beauty products manufactured in Japan may be suspended, hindering the growth of the business.

Timeframe
Current up to 1 year

Magnitude of potential impact

Low

Likelihood
Likely

Potential financial impact
2000000000

Explanation of financial impact
Sales of beauty care products in Japan in 2017 accounted for 1% of 195.9 billion yen. This impact may continue over the next ten years or so.

Primary response to risk
Establish site-specific targets

Description of response
Kao has set a goal to improve the water usage efficiency in the entire Group by 40% by 2020. Due to high water supply risk in the future, the plant has continued to reduce risks that may hinder business growth by setting a goal higher than the above and implementing activities to improve water usage efficiency.

Cost of response
500000000

Explanation of cost of response
In order to continue operating the plant even if the water supply is limited due to depletion, we expect to spend roughly 5 million yen to install a water circulation system in the plant. Making this investment once can significantly reduce the potential financial risk that may occur each year.

W4.2c

(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Kao has expanded the scope of water-related risk surveys not only directly into operations but also in the value chain. As a result of the survey, we have implemented appropriate response to supplier factories at risk. As a result of the survey, we are aware that there is no supplier factory currently exposed to Substantibe financial or strategic inpact.Therefore, we w4.1 selected "Yes, only within our direct operations". We are continuously improving the quality of our supplier surveys, including increasing the scope of our research in the CDP SC program.

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.

Type of opportunity
Markets

Primary water-related opportunity
Increased brand value

Company-specific description & strategy to realize opportunity
Aim to expand the business and increase the value of our brand by contributing to decrease the water consumption in individual regions by offering products to reduce water consumption in the usage phase. We introduced the first laundry detergent in the world to the market which only required one rinse cycle through our unique technological development. We established the market for the same category and are leading the activities as a leading brand. This factor has an impact on the Fabric and Home Care Business with the sales of 345 billion yen for products including this item.

Estimated timeframe for realization
Current - up to 1 year

Magnitude of potential financial impact
High

Potential financial impact
86000000000

Explanation of financial impact
Our strategy has being implemented as follows with many case examples: We have been selling laundry detergents enabling to save rinsing water since 2009, rinsing water saving shampoos since 2012, rinsing water saving dish detergents since 2014, rinsing water saving bathroom detergent since 2015. In order to implement our strategy surely, we communicate to consumers that those products also give them the other advantage, saving time. We are continuously going to contribute to water consumption reduction at consumer use with water saving products like these and aim to grow our business operations at the same time.

Type of opportunity
Efficiency

Primary water-related opportunity
Cost savings

Company-specific description & strategy to realize opportunity
Kao plans to increase sales by more than 1.5 times by 2030. Thus, we expect that production as well as the amount of water used at plants will also increase by about 1.5 times by 2030. Meanwhile, since we plan to increase profits at a rate greater than that of the sales increase, we are adopting various approaches to take cost reduction measures. The water usage reduction activities at each plant are part of these cost reduction activities. Such activities are budgeted into the TCR amount and managed per item. As part of water-saving activities, the Malaysia plant uses rainwater, and many other plants, including the Wakayama Plant, reuse steam. Also, we have set a goal of improving water usage efficiency by 40% by 2020, and the Head Office has been managing the progress of these efforts.

Estimated timeframe for realization
Current - up to 1 year

Magnitude of potential financial impact
Medium

Potential financial impact
1250000000

Explanation of financial impact
The sales target for Kao products for 2030 is 2.5 trillion yen. If the cost of water required to manufacture such products accounts for 0.1% of sales, the cost of water will be 2.5 billion yen. Thus, it can be expected that improving the water usage efficiency by 50% will reduce the cost by 1.25 billion yen.

Type of opportunity
Markets

Primary water-related opportunity
Increased brand value

Company-specific description & strategy to realize opportunity
Kao is promoting strategically “eco together” activities in partnership with stakeholders. Kao (China) has conducted the Nationwide Cleanliness and Water-saving Initiatives jointly with the Center for Environmental Education and Communications (CEEC), part of the State Environmental Protection Administration (SEPA) of China, since 2012. The campaign begins each year in March, with informational sessions held in various cities on conserving water and the importance of water resources. The initiatives were expanded in 2015 to include awareness-raising events held at universities in China. In 2017, these events were held at 53 universities in 13 provinces including Guangzhou, Xi’an, Liaoning, Anhui, Zhejiang and Inner Mongolia.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact
High

Potential financial impact
5000000000

Explanation of financial impact
Kao's major clothing detergent brand is ATTACK, of which sales exceeded 100 billion yen in the previous year. This brand includes water-saving products, such as ATTACK NEO marketed in Japan and Instant Clean marketed in China. If sales increase by 5% through activities involving stakeholders, it will generate a financial impact that exceeds 5 billion yen.

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)
Kao Chemical Coporation Shanghai

Country/Region
China

River basin
Yangtze River (Chang Jiang)

Latitude
31.215819

Longitude
121.456732

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
87.82

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
38.85

Comparison of discharges with previous reporting year
About the same

Total water consumption at this facility (megaliters/year)
48.97

Comparison of consumption with previous reporting year
Higher

Please explain
Ratio of production which need cooling water has increased.

Facility reference number
Facility 2

Facility name (optional)
Pilipinas Kao, Incorporated

Country/Region
Philippines

River basin
Other, please specify (Cablig)

Latitude
8.652755

Longitude
124.756451

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
1233.41

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
181.49

Comparison of discharges with previous reporting year
Higher

Total water consumption at this facility (megaliters/year)
1051.92

Comparison of consumption with previous reporting year
About the same

Please explain
Ratio of production is almost the same as previous reporting year.

Facility reference number
Facility 3

Facility name (optional)
Kao Industrial (Thailand) Co., Ltd.

Country/Region
Thailand

River basin
Other, please specify (Bang Pakong)

Latitude
13.326396

Longitude
101.003311

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)

601.48

Comparison of withdrawals with previous reporting year
Higher

Total water discharges at this facility (megaliters/year)
457.64

Comparison of discharges with previous reporting year
Higher

Total water consumption at this facility (megaliters/year)
143.84

Comparison of consumption with previous reporting year
About the same

Please explain
Ratio of production is almost the same as previous reporting year.

Facility reference number
Facility 4

Facility name (optional)
PT. Kao Indonesia Chemicals

Country/Region
Indonesia

River basin
Other, please specify (Saluran Irigasi Kali Malang and Sungai)

Latitude
-6.219574

Longitude
107.065755

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
494.6

Comparison of withdrawals with previous reporting year
Much higher

Total water discharges at this facility (megaliters/year)
286.99

Comparison of discharges with previous reporting year
About the same

Total water consumption at this facility (megaliters/year)
207.61

Comparison of consumption with previous reporting year
Much higher

Please explain
Ratio of production is almost the same as previous reporting year. The reasons why the amount of water withdrawals and consumption increased significantly from the previous year are as follows. 1)Due to the temporary failure of the counter of service water, the water withdrawals in 2016 was recorded smaller than the actual value. 2)Due to temporary troubles of the water purification system inside the plant, the water consumption in 2017 became larger than the actual value.

Facility reference number
Facility 5

Facility name (optional)
Kao (Taiwan) Corporation

Country/Region
Taiwan (Province of China)

River basin
Other, please specify (Touqian River)

Latitude
24.803945

Longitude
120.964687

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
197.46

Comparison of withdrawals with previous reporting year
Higher

Total water discharges at this facility (megaliters/year)
112.54

Comparison of discharges with previous reporting year
Higher

Total water consumption at this facility (megaliters/year)
85

Comparison of consumption with previous reporting year
Higher

Please explain
Ratio of production which need cooling water has increased.

Facility reference number
Facility 6

Facility name (optional)
Quimi-Kao S.A. de C.V.

Country/Region
Mexico

River basin
Balsas

Latitude
19.947483

Longitude
-101.640845

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
199.82

Comparison of withdrawals with previous reporting year
Much higher

Total water discharges at this facility (megaliters/year)
115.71

Comparison of discharges with previous reporting year
Much higher

Total water consumption at this facility (megaliters/year)
84.11

Comparison of consumption with previous reporting year
Much higher

Please explain
Water use in Quimi KAO (QK) has increased mainly due to the addition of new facilities, but QK purchased more reclaimed water than that. In 2017, QK signed agreement with local municipalities to accept a large amount of reclaimed water from their water purification facilities. QK contribute to regional water circulation by making purchased reclaimed water cleaner through their reverse osmosis membrane and discharging remaining water not used for production to the river via the city facilities.

Facility reference number
Facility 7

Facility name (optional)
Kao Corporation S.A. Mollet plant

Country/Region
Spain

River basin
Other, please specify (El Besos)

Latitude
41.525107

Longitude
2.213861

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
166.28

Comparison of withdrawals with previous reporting year
Higher

Total water discharges at this facility (megaliters/year)
125.98

Comparison of discharges with previous reporting year
About the same

Total water consumption at this facility (megaliters/year)
40.3

Comparison of consumption with previous reporting year
Higher

Please explain
Ratio of production which need cooling water has increased.

Facility reference number
Facility 8

Facility name (optional)
Kao Corporation, Toyohashi plant

Country/Region

Japan

River basin
Other, please specify (Toyokawa River)

Latitude
34.708937

Longitude
137.322836

Primary power generation source for your electricity generation at this facility
<Not Applicable>

Oil & gas sector business division
<Not Applicable>

Total water withdrawals at this facility (megaliters/year)
127.88

Comparison of withdrawals with previous reporting year
About the same

Total water discharges at this facility (megaliters/year)
54.78

Comparison of discharges with previous reporting year
Lower

Total water consumption at this facility (megaliters/year)
73.1

Comparison of consumption with previous reporting year
Higher

Please explain
Ratio of production which need cooling water has increased.

W5.1a

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

Facility reference number
Facility 1

Facility name
Kao Chemical Coporation Shanghai

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
0

Groundwater - non-renewable
0

Produced water
0

Third party sources
87.82

Comment

Facility reference number
Facility 2

Facility name
Pilipinas Kao, Incorporated

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
1233.41

Groundwater - non-renewable
0

Produced water
0

Third party sources
0

Comment

Facility reference number
Facility 3

Facility name
Kao Industrial (Thailand) Co., Ltd.

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
0

Groundwater - non-renewable
0

Produced water
0

Third party sources
601.48

Comment

Facility reference number
Facility 4

Facility name
PT Kao Indonesia Chemicals

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
0

Groundwater - non-renewable
0

Produced water
0

Third party sources
494.6

Comment

Facility reference number
Facility 5

Facility name
Kao (Taiwan) Corporation

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
0

Groundwater - non-renewable
0

Produced water
0

Third party sources
197.46

Comment

Facility reference number
Facility 6

Facility name
Quimi-Kao S.A. de C.V.

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
137.37

Groundwater - non-renewable
0

Produced water
0

Third party sources
62.45

Comment
There was a mistake in 2016 performance report. Groundwater: 40 -->108 Third party sources: 86 -->17 Both increased in 2017. The reasons are as follows. In 2017, KAO signed an agreement with local municipalities to accept reclaimed water from their water purification facilities. As a result, KAO could receive the stable supply of water.and water use in KAO has increased mainly due to the addition of new plants and various facilities. So the usage of the reclaimed water has increased rapidly.

Facility reference number
Facility 7

Facility name
Kao Corporation S.A. Mollet plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
0

Groundwater - non-renewable
0

Produced water
0

Third party sources
166.28

Comment

Facility reference number
Facility 8

Facility name
Kao Corporation, Toyohashi plant

Fresh surface water, including rainwater, water from wetlands, rivers and lakes
0

Brackish surface water/seawater
0

Groundwater - renewable
0

Groundwater - non-renewable
0

Produced water
0

Third party sources
127.88

Comment

W5.1b

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

Facility reference number
Facility 1

Facility name
Kao Chemical Coporation Shanghai

Fresh surface water
0

Brackish surface water/Seawater
0

Groundwater
0

Third party destinations
38.85

Comment

Facility reference number
Facility 2

Facility name
Pilipinas Kao, Incorporated

Fresh surface water
0

Brackish surface water/Seawater
181.49

Groundwater
0

Third party destinations
0

Comment

Facility reference number
Facility 3

Facility name
Kao Industrial (Thailand) Co., Ltd.

Fresh surface water
0

Brackish surface water/Seawater
0

Groundwater
0

Third party destinations
457.64

Comment

Facility reference number
Facility 4

Facility name
PT. Kao Indonesia Chemicals

Fresh surface water
0

Brackish surface water/Seawater
0

Groundwater
0

Third party destinations
286.99

Comment

Facility reference number
Facility 5

Facility name
Kao (Taiwan) Corporation

Fresh surface water

0

Brackish surface water/Seawater
0

Groundwater
0

Third party destinations
112.54

Comment

Facility reference number
Facility 6

Facility name
Quimi-Kao S.A. de C.V.

Fresh surface water
0

Brackish surface water/Seawater
0

Groundwater
0

Third party destinations
115.71

Comment

Facility reference number
Facility 7

Facility name
Kao Corporation S.A. Mollet plant

Fresh surface water
0

Brackish surface water/Seawater
0

Groundwater
0

Third party destinations
125.98

Comment

Facility reference number
Facility 8

Facility name
Kao Corporation, Toyohashi plant

Fresh surface water
0

Brackish surface water/Seawater
54.78

Groundwater
0

Third party destinations
0

Comment

W5.1c

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

Facility reference number
Facility 1

Facility name
Kao Chemical Coporation Shanghai

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain
We do not record recycled water.

Facility reference number
Facility 2

Facility name
Pilipinas Kao, Incorporated

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain
We do not record recycled water.

Facility reference number
Facility 3

Facility name
Kao Industrial (Thailand) Co., Ltd.

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain
We do not record recycled water.

Facility reference number
Facility 4

Facility name
PT. Kao Indonesia Chemicals

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain

We do not record recycled water.

Facility reference number
Facility 5

Facility name
Kao (Taiwan) Corporation

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain
We do not record recycled water.

Facility reference number
Facility 6

Facility name
Quimi-Kao S.A. de C.V.

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain
We do not record recycled water.

Facility reference number
Facility 7

Facility name
Kao Corporation S.A. Mollet plant

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain
We do not record recycled water.

Facility reference number
Facility 8

Facility name
Kao Corporation, Toyohashi plant

% recycled or reused
None

Comparison with previous reporting year
About the same

Please explain
We do not record recycled water.

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
76-100

What standard and methodology was used?
ISAE3000, limited assurance

Water withdrawals – volume by source

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water withdrawals – quality

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water discharges – total volumes

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water discharges – volume by destination

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water discharges – volume by treatment method

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water discharge quality – quality by standard effluent parameters

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water discharge quality – temperature

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water consumption – total volume

% verified
Not verified

What standard and methodology was used?
We are considering the need to make it subject to external verification.

Water recycled/reused

% verified

Not verified

What standard and methodology was used?

We are considering the need to make it subject to external verification.

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 Reference to international standards and widely-recognized water initiatives Company water targets and goals Commitment to align with public policy initiatives, such as the SDGs Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change	We declare that we provide products that will not impact on the environment including water in product lifecycle, in the Kao Environmental Declaration. In addition, Kao sets goals for securing water for consumers, and to realize the goals, Kao sets various policies and expands activities. "Responsible Care Policy" covers our compliance with international rules and regulations as well as trust from stakeholders and effective communication. In addition, the "Kao Sustainability Statement" clarifies our nine priority topics, which could contribute to themes of SDGs (including Goal 6). Furthermore, Kao discloses water reduction targets and climate-related risks. We also make it clear that employees can work in a healthy and safe environment in accordance with the "Basic Policy on Environment and Safety". "Effective use of water" is requested in the "Supplier Guidelines", and particularly we ask key suppliers water risk management and countermeasures through the CDP SC program.

W6.2

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

Yes

W6.2a

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

Position of individual	Please explain
Chief Executive Officer (CEO)	Since water-related issues affect Kao's business, they must be monitored as business management issues and are therefore under the CEO's oversight. CEO is a chairman of the Responsible Care Promotion Committee, which is one of the internal organizations responsible for Kao's response to climate change, a subordinate committee of the Internal Control Committees. This committee is approved by the Board, under the Kao corporate governance system. CEO is also a chairman of the Sustainability Committee, approved by the Management Committee. The Responsible Care Promotion Committee manages progress in risk-management activities, while the Sustainability Committee manages progress in activities related to locating new opportunities. The Responsible Care Promotion Committee is convened annually and reported of the Internal Control Committee.

W6.2b

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

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Providing employee incentives Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Reviewing innovation/R&D priorities	The Risk and Crisis Management Committee holds a meeting at least four times per year and the Responsible Care Promotion Committee checks the status of activities at bases every month. Both committees are under the Internal Control Committee, which is under the control of the Board of Directors, and manage water-related risks. The Sustainability Committee, which is under the control of the Board of Directors, holds a meeting at least four times per year and manages water-related opportunities. The status of activities of these committees is explained to the Board of Directors by the secretary-general of each committee. Since water-related issues have an impact on Kao's business and thus must be supervised as one of the business management issues, they are under the oversight of the Internal Control Committee and the Sustainability Committee, with the CEO serving as chairperson.

W6.3

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

Name of the position(s) and/or committee(s)
Chief Executive Officer (CEO)

Responsibility
Both assessing and managing water-related risks and opportunities

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

Please explain
The Risk and Crisis Management Committee (RCM) and the Responsible Care Promotion Committee (RCP) under the Internal Control Committee (IC), which is under the control of the Board, manage water-related risks. The Sustainability Committee (SC), which is under the control of the Board, manages water-related opportunities. Since water-related issues have an impact on Kao's business, the CEO is chaired by IC and SC. During some scheduled board meetings, each committee reports plans, results, review drafts on plans (if modifications are required) on water-related issues managed by each committee to the Board through the Chief Secretariat under instructions of CEO. RCM sets up the management structure and operation plan of divisions, subsidiaries while RCP manages the status of activities of divisions, subsidiaries. SC defines the direction of activities and promotes such activities to improve the corporate value through ESG activities related to water-related issues and others.

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, direct engagement with policy makers

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?

Kao supports the Water Project activities of Japan's policy makers who are working on communicating the importance of water used in Japan. To support their activities, the secretariat of the Sustainability Committee, which manages water-related opportunities, consults with the relevant policy makers to understand the objective and details of such activities. The secretary-general of the Sustainability Committee determines whether the details are consistent with Kao's policies and how Kao should support such activities. If there is any inconsistency with Kao's policies, Kao will report it to the policy makers and ask for the inconsistency to be resolved. If the inconsistency is not resolved, Kao will suspend the support for such activities based on the decision of the secretary-general of the Sustainability Committee.

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	> 30	• Under the mid-term plan K20, Kao has set a goal of committing to fostering a distinctive corporate image. One of the measures taken to achieve that is stimulating non-financial activities, especially from the viewpoint of environmental, social, and (corporate) governance (ESG). Water-related issues are important issues in the environmental area. Since Kao aims to increase sales by more than 1.5 times the current level by 2030, we understand that constructing new plants is an issue that must be tackled. When selecting the land to construct a new plant, we check the level of long-term water stress (such as the ease of water intake and the likelihood of a flood). • If we determine that there is high stress on a piece of land after checking the level of water stress, we will not select that land to construct a plant. • This is because our policy is to continue operating a plant for over 30 years once it has been constructed.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	11-15	• Since Kao aims to increase sales by more than 1.5 times the current level by 2030, it is essential to develop new products. We expect an increase in the level of water stress in Japan and other Asian countries where Kao is engaging in business today and in the future. Thus, as a business strategy, we aim to expand the sales of products that consume little water when they are used. For this reason, all products that contribute to the sales target for 2030 are developed while taking water issues into account. • We believe that products that consume a large amount of water when they are used, which are currently accepted in regions where there is no high water stress, will no longer be accepted. As such, we expect the importance of improving water dependency in the new product development phase to increase. • Kao's current sales target has been set for 2030, so we have selected 11 to 15 years as the time scale for developing new products that will contribute to achieving that target.
Financial planning	Yes, water-related issues are integrated	11-15	• Since Kao aims to increase sales by more than 1.5 times the current level by 2030, it is essential to develop new products. We expect an increase in the level of water stress in Japan and other Asian countries where Kao is engaging in business today and in the future. Thus, as a business strategy, we aim to expand the sales of products that consume little water when they are used. • As part of efforts to increase the sales of products that consume little water when they are used, we expanded the scope of water-saving clothing detergent to include the non-concentrated type and incorporated it into the financial plan for 2017. This has affected our forecast for earnings, including sales and operating profit margin. • Kao's current sales target has been set for 2030, so we have selected 11 to 15 years as the time scale for developing new products that will contribute to achieving that target.

W7.2

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

	Water-related CAPEX (+/- % change)	Anticipated forward trend for CAPEX (+/- % change)	Water-related OPEX (+/- % change)	Anticipated forward trend for OPEX (+/- % change)	Please explain
Row 1	190	-25	-4	5	Water-related capital investment is expected to continue to increase in line with the expansion of production facilities due to increased production volume.

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	IEA B2DS	Changing in rainfall patterns like as extreme rainfall incl massive typhoon	For example, an increase in temperatures will raise the risk of stronger typhoons directly striking Mindanao, where Pilipinas Kao is located. There is also a risk that a poor crop of coconut oil, which is one of the ingredients used at the plant, due to typhoons and El Nino Southern Oscillation may cause the price to soar and make it difficult to purchase.

W7.4

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

Row 1

Does your company use an internal price on water?

Yes

Please explain

At Kao plants, we use water in different quality levels according to the requirement of the facility and product. Since improving the water quality requires additional processes, we indicate water costs according to the water quality level and manage them as one of manufacturing cost items.

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 Site/facility specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	We have made it clear in the Environmental Statement that we will engage in environmental activities through products. As a result of our investigation on the amount of water consumed for products in each phase, we understand that 90% of the total water consumption is attributable to the phase in which products are used. Therefore, Kao has set a goal of reducing water consumption when the products are used. We have also set a goal of improving the water usage efficiency at all bases including plants because we consider it necessary to improve water usage efficiency in order to continue manufacturing products.

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 withdrawals

Level
Company-wide

Primary motivation
Shared value

Description of target
- Relevant to the goal of achieving water security At Kao bases, we set a goal of managing water security so that we can continue the business for a long period of time. - Consistent with the category, level and metric chosen We manage the amount of water intake as the first item in the management of water security at Kao bases. In order to continue the business for a long period of time, we have set a goal of reducing the water usage load (the amount of water intake per sales) by 40%.

Quantitative metric
% reduction per revenue

Baseline year
2005

Start year
2013

Target year
2020

% achieved
100

Please explain
Our water consumption (all sites) came to 17.3 million m^3, an improvement of 1 point in the reduction rate over the previous year to 43%, taking 2005 as the baseline year . We achieved our 2017 target of a 38% reduction and have achieved our 2020 target of a 40% reduction, continuing from the previous year.

Target reference number
Target 2

Category of target
Water consumption

Level
Business

Primary motivation
Shared value

Description of target
'- Relevant to the goal of achieving water security Kao's key products are clothing detergent and body detergent. Thus, in order for Kao to continue the business for a long period of time, we have set a goal of managing water security when the products are used. - Consistent with the category, level and metric chosen We manage the amount of water consumption when the products are used as the first item in the management of water security when Kao products are used. In order to continue the business for a long period of time, we have set a goal of reducing the water usage load (the amount of water consumption per sales) by 30%.

Quantitative metric
% reduction per revenue

Baseline year
2005

Start year
2009

Target year
2020

% achieved

80

Please explain
Our water consumption during product use (Kao Group in Japan) fell to 52 million m³. The per unit of sales reduction rates improved 2 points to a 24% reduction. Enhancement of the water-conservation performance of our washing-up liquid products contributed to these improvements in water consumption.

W8.1b

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

Goal
Engaging with customers to help them minimize product impacts

Level
Company-wide

Motivation
Shared value

Description of goal
As a result of investigating the amount of water consumed in each product phase, we discovered that 90% of the total water consumption is attributable to the phase in which products are used. Thus, Kao understands that it faces the great challenge of reducing the environmental load in the product usage stage and believes that raising the awareness in consumers who use the products is essential to achieving that. Accordingly, Kao has set a goal of raising the awareness of consumers regarding environmentally-friendly products (clothing detergent and tableware detergent) and has been engaging in company-wide activities to reduce environmental load (including water issues) together with consumers. Specifically, we visit elementary and middle schools to give lectures, offer plant tours to students and general consumers, and participate in environmental events held by local governments and at stores. We also actively interact with the users and customers of our products through the eco website and encourage them to use environmentally-friendly products that reduce the amount of water consumed when they are used. By strategically increasing engagements with consumers in such a way, we promote their understanding of environmentally-friendly products and the need to reduce environmental load when using the products.

Baseline year
2005

Start year
2009

End year
2030

Progress
- A description of the indicators that are used to assess progress As an index for measuring engagements with consumers, we calculate the number of people who have been enlightened through school visits by Kao, plant tours, environmental events, and so on. - The threshold of success and how they have progressed against it Our goal for the total number of people who have been enlightened is 1 million for 2020, and we have reached 0.91 million as of 2017. The reference year for this KPI is 2014, and the percentage of achievement per time elapsed (57% = (2017-2013)/(2020-2013)) is 91% (= 910,000/1,000,000 persons).

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
Tradeoff

Type of linkage/tradeoff
Increased GHG emissions

Description of linkage/tradeoff
- A company-specific description The manufacturing phases for Kao products include a high-temperature phase because their production requires high temperature. An example is the powdering process of power laundry detergent. After this process, a large amount of cooling water is used to lower the temperature of intermediate products. To reduce the amount of water consumption, we reuse the cooling water by cooling it again using energy. We recognize we consume energy and emit GHG during this process. - Measurement or quantification of its impact To reduce the amount of water consumption, we reuse used cooling water by cooling it again in the cooling tower using energy. We recognize we consume energy and emit GHG during this process. - A description of an action to manage To reduce energy consumption when reducing water consumption, we increase the cooling temperature for cooling water to a level that will not reduce the productivity of products.

Policy or action
Although promoting water reuse is important, it is also necessary to reduce the amount of energy consumption. Thus, we decided to increase the cooling temperature for the cooling water to a level that will not reduce the productivity of products and we have implemented the measure. In 2017, we developed a technology that enables the cooling temperature for the cooling water to be set at a high temperature in the cooling tower. This technology allows us to reduce energy consumption while keeping the water consumption at a low level without affecting productivity. We plan to deploy this technology in many Kao plants. We understand that this technology allows us to reduce water and energy consumption at the same time, resulting in an increase in profits through the reduction of product manufacturing costs.

Linkage or tradeoff
Linkage

Type of linkage/tradeoff
Decreased GHG emissions

Description of linkage/tradeoff
As a result of our investigation on the amount of water consumed in each product phase, we understand that 90% of the total water consumption is attributable to the phase in which detergent products are used. Since the water and hot water used to rinse detergent are supplied using energy, the more water we use for rinsing, the higher the energy consumption. In other words, if we can reduce the water for rinsing, we can also reduce energy consumption. Kao has developed a clothing detergent product that is supposed to be used with a washing machine and it reduces the number of rinsing from two to one. Simply put, not only does this product reduce the amount of water used for rinsing by half, it also reduces the electricity consumed by the washing machine by half at the same time. In 2017, Kao expanded the concentrated type of liquid clothing detergent for one-time rinsing to the regular type.

Policy or action
Kao considers it important to reduce the amount of water consumption when the products are used, so we have been aggressively developing products that require fewer rinsing than conventional products and have been expanding such products from clothing detergent to other products with various purposes, such as shampoo, bath room cleaner, and tableware detergent. We manage such environmentally-friendly products as "eco together" certified products and aim to expand the sale of such products as part of our business strategy.

W10. Verification

W10.1

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

W10.1a

(W10.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W8. Targets	Water withdrawal (all sites) and water consumption during product use(Kao Group in Japan)	ISAE3000	The status of water-related items that Kao has set as goals is reviewed every year by a third party. We disclose the results in our Sustainability Data Book 2017.

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	Representative Director, President and 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