

# Water conservation 102-12, 102-15, 103-1, 303-1 (Water and effluents 2018)



Reduce water use across all of our business by adopting water-efficient formulations and production methods.

ESG Keyword

- Reducing water risks
- Proper wastewater treatment
- Reducing water consumption throughout the product lifecycle
- "eco together"
- Understanding water withdrawal amount by source and wastewater discharge by destination
- CDP evaluation
- 3R

## Kao's creating value to address social issues

### Social issues we are aware of

Water is necessary to life for all plants and animals on the Planet. All humans also need access to sustainable sources of sanitary water in order to maintain the whole-hearted satisfaction and enrichment. In Japan, water used for washing apparently accounts for the largest share of total household water usage\*1. Furthermore, given that water used by Japanese households when using Kao products accounts for around 15% of all household water usage in Japan\*2, we recognize that we have a big responsibility to society.

Currently, problems including localized torrential rains and floods, chronic drought and related long-term dry conditions, are arising in many regions and are predicted to grow in severity due to future population growth and climate change.

In addition, water is a local resource, and consequently, for example, even when the same amount of water is taken from a river, there is a significant difference from the perspective in impact on water resources between water taken in a water resource-rich basin and water taken in a water-stressed watershed. For this reason, when we undertake sustainable operation, we are aware that we need to take action both to reduce the company's

water risk and to give consideration to the local environment and local residents.

\*1 Water Resources Department, Water and Disaster Management Bureau, Ministry of Land, Infrastructure, Transport and Tourism

\*2 Based on a survey conducted by Kao Corporation

### Kao's creating value

We aim to substantially improve water usage efficiency in all stages of the product lifecycles. At our plants, we set targets and continue to aim for water use reduction. We believe that this contributes toward safeguarding the river basins (rivers and their sources) that are used to supply water to the plants.

We are also developing water-saving products, which we are rolling out globally, to reduce water consumption during product use. As we see it, in this way, even if restrictions are placed on water usage, consumers can continue to enjoy lives of cleanliness.

### Contributions to the SDGs



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## Risks and opportunities related to realization of What Kao Aims to Be by 2030

Due to the impact of climate change, the impact of drought and localized torrential rains is already being seen all over the world. Governments and business enterprises are implementing various measures to reduce GHG emissions, but further rises in temperature are inevitable, and the resulting impacts are sure to become even more serious.

At the same time, the number of people living in the world's major cities continues to increase. If urban water infrastructure is unable to keep pace with urban residents' continually increasing demand for water, then residents may not have enough water to use, and it may be impossible to implement wastewater treatment properly. In this case, citizens' cleanliness and sanitation may be under threat. Furthermore, if the cost of municipal water supply rises, then factory operation costs will rise too, with a risk that this may lead to reduced profits. Factories need to act with consideration for the environment and residents of watersheds, and we believe that failure to do so will give rise to reputation risks among local residents and others.

On the other hand, because the rise in awareness of the need to save water and the need for cleanliness and hygiene, which has emerged in relation to climate change, is closely linked to Kao's business areas, current developments also represent a significant opportunity for us. Furthermore, continuous implementation of measures to reduce factory water usage in response to the situations outlined above should lead to both cost reductions and increased profits.

In 2020, the COVID-19 pandemic resulted in new risks and opportunities. The increased awareness of sanitation has boosted demand for cleaning products that use water and created opportunities to increase

sales. On the other hand, water consumption has increased throughout the product lifecycle, particularly during use. As a result, there is a growing possibility that we may not be able to achieve our water reduction targets. Failure to achieve these targets could incur risk of damage to the company's reputation. Even though people's awareness of sanitation has been heightened, if drought occurs, there is a risk that they will not be able to perform cleaning activities adequately, and so will not be able to maintain the Kirei Lifestyle.

## Policies

The product use stage accounts for around 90% of total lifecycle water usage for Kao products, with the raw materials procurement stage accounting for only around 10%. As one of Japan's leading manufacturers of consumer products, we are demonstrating leadership by actively rolling out new, water-saving products and striving to realize effective engagement with government bodies and suppliers.

We continue to implement activities aimed at minimizing the negative impact on water conservation at every stage, from product development through to disposal.

In our Basic Principle and Basic Policies on Environment and Safety, we undertake to "assess environment and safety aspects throughout the entire lifecycle of the products, from manufacture through disposal, when developing products and technologies" and to "offer products with a lower environmental burden." Furthermore, the Kao Responsible Care Policy contains the following declarations: "We shall strive to develop technologies and bring to market products that reduce our impact on the environment, thereby contributing to the peace of mind of our business

customers and consumers," and "We shall strive to continue to reduce the environmental impact of our business operations by promoting reduction of uses of resources such as water."

Our Environmental Statement embodies our commitment to ensuring that "Kao products utilize original Kao-developed technologies to minimize the impact they have on the environment, not just in the manufacturing process, but in the daily life of the customers who use them. From materials procurement and manufacturing, to distribution, sales, use and final disposal, we want to engage in 'eco together' with stakeholders and consumers worldwide."



→ Basic Principle and Basic Policies on Environment and Safety

[www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/environment-safety-principle-policies.pdf](http://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/environment-safety-principle-policies.pdf)

→ Kao Responsible Care Policy

[www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/responsible-care-policy.pdf](http://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/responsible-care-policy.pdf)

→ Kao Environmental Statement

[www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/environmental-statement.pdf](http://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/environmental-statement.pdf)

## Education and promotion

As the product use stage accounts for around 90% of total product lifecycle water use, it is important to design products that contribute to saving water. For this reason, we provide employees with numerous opportunities to learn about this.

By giving our employees opportunities to learn about water through various programs, we can



ensure that they will actively engage in water preservation activities of their own accord when engaging in water conservation at plants or conducting R&D on water-saving products. This will raise the overall level of Kao's water saving activities.

Not only are our employees in a position to develop and supply products, when they are not at work, they are consumers, and as such are among the people who select those products. Therefore, it is important that employees also undertake measures to conserve water in the role as consumers.

## Collaboration and engagement with stakeholders

We recognize that, in order to help consumers realize the Kirei Lifestyle, it is vital for us to deepen mutual understanding with a wide range of stakeholders and collaborate with them, by developing two-way communication.

As the water consumed in our production activities impacts local communities, having good communication with local communities is vitally important. Many of our plants compile an annual environmental report, and communicate with local residents.

In order to solve water issues faced by countries and regions, we actively participate in programs organized by central government, local government authorities, NPOs and others. We are implementing a water conservation campaign in China and are participating in the Water Project conducted by the Ministry of the Environment of Japan.

It is essential that suppliers in high water risk

sectors understand the need to improve their water management standards and to take appropriate actions. Through the CDP Supply Chain Program, we request that suppliers respond each year.

Consumer behavior needs to change in order for consumers to attain a Kirei Lifestyle. We provide opportunities to think about the Kirei Lifestyle through visits to museums and plants that adopt as a theme the water that all consumers use daily. For example, the Kao Eco-Lab Museum has displays that vividly indicate the amount of household water usage.

## Framework

Risk management is carried out by the Internal Control Committee and opportunity management is carried out by the ESG Committee, under the supervision of the Board of Directors. These committees are headed by the President and Chief Executive Officer.

The Responsible Care Promotion Committee, which manages policy / regulatory regime and technology risks, and the Risk and Crisis Management Committee, which manages market, reputational and acute risks, are under the Internal Control Committee. These committees are headed by the executive officer in charge of the Corporate Strategy.

The Crisis Management RC Department of the Corporate Strategy Division acts as the secretariats for the Responsible Care Promotion Committee and the Risk and Crisis Management Committee.

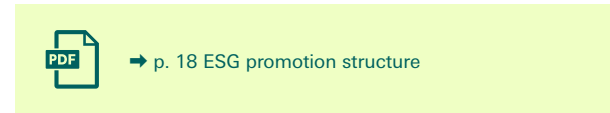
The Responsible Care Promotion Committee meets twice a year to report on and discuss compliance with laws and regulations, status of water use reduction and other matters. It also sets targets

for the following year. The Responsible Care Promotion Committee conducts monthly checks on compliance with laws and regulations, and monitors water use, mainly at plants which have a large impact on water issues, reporting on these and other matters to the head of the committee, committee members, members of the Internal Control Committee, auditors and others. The Risk and Crisis Management Committee which manages natural disaster including caused by climate change and reputational risks, meets four times a year.

The Internal Control Committee meets one or more times a year, receiving activity reports from the Responsible Care Promotion Committee and the Risk and Crisis Management Committee which it oversees and auditing the activities of the two committees.

Opportunity management relating to water issues is handled by the ESG Committee, which meets four times a year. Committee members are the persons in charge of the Business, Sales, R&D, SCM and other divisions, an arrangement which connects divisions horizontally. The Internal Control Committee, and the ESG Committee which it supervises, discuss water and environmental issues as well as social and governance issues. The committee reports on its activities to the Board of Directors one or more times a year and is audited by the Board of Directors.

The risk and opportunity management system for water resources is the same as the management system for climate change.



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## Mid- to long-term targets and performance

### Targets for 2020

We set the 2020 reduction targets for water consumption for all Kao Group sites in 2013 and have aimed to achieve a 1% reduction each year.

We set the 2020 reduction targets for water consumption during the product use stage for the Kao Group in Japan in 2009. (2005 baseline)

Item	Scope	2020 targets
Water consumption (per unit of sales)	All Kao Group sites	40% reduction
	During consumer product use for the Kao Group in Japan	30% reduction

### 2030 long-term targets

Item	Scope	2030 targets
Water consumption (per unit of sales)	All Kao Group sites	45% reduction (2005 baseline)
	Overall Kao Group product lifecycles	10% reduction (2017 baseline)
	Overall Kao Group product lifecycles in drought areas	40% reduction (2017 baseline)

### Anticipated benefits from achieving mid- to long-term targets

#### Business impacts

Achieving water consumption targets for all Kao Group sites will contribute to lowering operational costs and to improving earnings. Achieving targets for water consumption during product use and during the product lifecycle will require increased sales of water-saving products, and as a result, increased sales by achieving these targets can be expected.

If no action is taken to reduce usage, the overall municipal water usage of the Kao Group as a whole in 2030 will be 1.66 times higher than in 2017. Assuming that water charges rise by 20%\*, then it can be anticipated that our costs will rise by 771 million yen. We have set ourselves the goal of reducing water usage by 45% by 2030 compared to 2005, which is expected to keep the increase in costs down to 51 million yen.

\* Source: Development Bank of Japan, The Water Supply Sector: Future Forecasts and Management Reform, 2017.

#### Social impacts

Achieving water consumption targets for all Kao Group sites will contribute to sustainable availability or supply of fresh water in the river basin where water sources used by plants are located, and will have a positive effect on conserving ecosystems. Moreover, achieving targets for water consumption during product use and during the product lifecycle will reduce the burdens of waterworks infrastructure

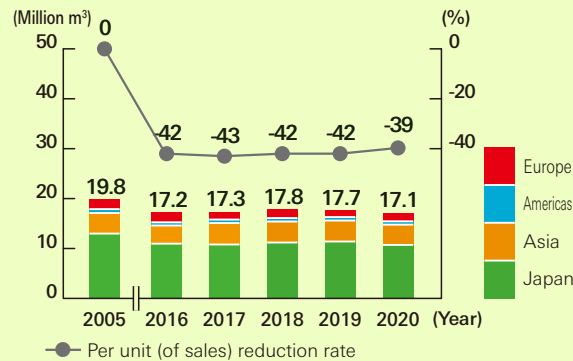
maintenance, and reduce water usage by consumers will lead to lower fees consumers pay for water and sewer service.



## Performance in 2020

### Performance\*

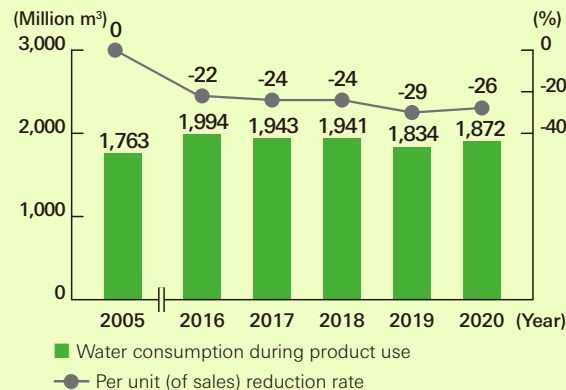
#### Water consumption (withdrawal) (all sites)



\* Boundary: For 2005, all Kao Group production sites and nonproduction sites in Japan. From 2016 all non-production sites are included.

\* Assurance provided for water consumption (withdrawal)

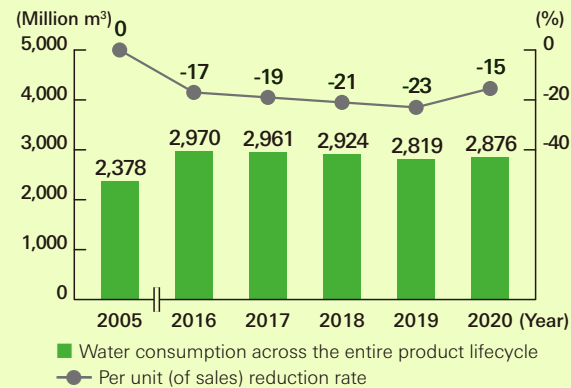
#### Water consumption during product use (Kao Group in Japan)



\* Water consumption during product use is calculated by multiplying the water consumption per unit of a product, mainly for consumer products in Japan, by the annual sales quantity of the product, and then adding all the results for these products together.

\* Assurance provided for water consumption and per unit (of sales) reduction rates

#### Water consumption across the entire product lifecycle (Kao Group)



\* "Water consumption across the entire product lifecycle" is calculated as the combined total of the amount of lifecycle water consumption of individual products sold within and outside Japan (excluding use during manufacturing and distribution) multiplied by their annual sales quantity and the amount from the group's manufacturing and distribution processes. This amount includes water used for procurement in regard to Chemical products but does not include water used in the use and disposal of such products.

\* Assurance provided for water consumption and per unit (of sales) reduction rates

\* Per unit of sales is calculated based on Japanese standards up to FY2005, and on International Financial Reporting Standards (IFRS) in FY2016 thereafter.

#### Water withdrawal amount by source (Million m³)\*

	2018	2019	2020
Surface water	0	0	0
Brackish water / seawater	0	0	0
Rainwater	0	0	0
Groundwater (renewable)	5.3	5.1	5.1
Groundwater (not renewable)	0	0	0
Oil-contaminated water / process water	0	0	0
City water	12.5	12.5	11.8
Wastewater from other organizations	0.02	0.07	0.1

\* Boundary: All Kao Group sites

#### Wastewater discharge by destination (Million m³)\*

	2018	2019	2020
Rivers / lakes	2.4	2.5	2.7
Brackish water / seawater	6.4	6.3	5.7
Groundwater	0.0	0.0	0.0
Sewage system	2.9	2.8	2.8
Wastewater to other organizations	0.0	0.0	0.0
Total	11.7	11.7	11.2

\* Boundary: All Kao Group sites



→ For the CDP evaluation, see p. 94 Making the world healthier & cleaner > Decarbonization / Performance in 2020: CDP evaluation

### Reviews of performance

Our water consumption (all sites) came to 17.1 million m³, slightly less than the previous year, but sales decreased, and as a result the per unit (of sales) reduction rate declined to 39%, and we did not achieve our target of 40% for 2020. Water consumption at production sites with water intake risks came to 3.1 million m³.

Our water consumption across the entire product lifecycle (Kao Group) and water consumption during product use (Kao Group in Japan) increased by 57 million m³ and 38 million m³, respectively, resulting in respective deterioration of 8 percentage points in the per unit (of sales) reduction rate to a 15% reduction (5% increase compared with 2017), and deterioration of 3 percentage points over the previous year to a 26% reduction. The key factors were the fall in sales due to the COVID-19 pandemic counterbalanced by the increase in sales of products with relatively high water consumption per unit of sales, such as hand soap and laundry detergents.

The challenge is to reduce water consumption during the use stage. We are working to further expand our water-saving products.



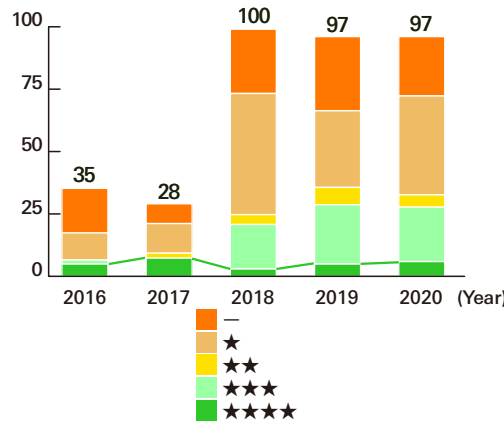
## Our initiatives

### Efforts in raw materials procurement

We began participating in the CDP Supply Chain Program in 2015 and we encourage suppliers in high water risk sectors to work on improving their water management standards. More specifically, we ask suppliers to fill out the CDP questionnaire survey. We use our unique methods to evaluate suppliers' water management status, and we provide feedback on the evaluation results.

The 2020 survey results showed that the number of suppliers obtaining an evaluation of at least "three stars" had increased by one compared to the previous year, indicating that the overall supplier activity level had risen. At the same time, in regard to the roughly 30% of suppliers who failed to respond to the survey, we are working on engagement to encourage these suppliers to respond.

Supplier activity level (Water)



### Efforts in development, manufacturing and sales

#### Initiatives to reduce water consumption

We use water as a product ingredient as well as to clean and cool equipment at our plants. We set targets to reduce water consumption at each plant and are working to reduce consumption and increase recycling based on the 3Rs (reduce, reuse and recycling).

#### Reduce

Multiple plants including Kao Chemicals GmbH in Germany conduct efforts to increase the number of

times that water is reused for boilers and for cooling to reduce their water consumption.

#### Reuse

Rainwater is collected and used to water green spaces at the Sumida Office, Kao Chemical Corporation Shanghai and Fatty Chemical (Malaysia).

#### Recycle

Active recycling efforts, such as recovering steam and treating and reusing water that has been used in production processes, are being carried out at many plants.

#### Examples of 3R activities

Company name	Description of activity
Kao Chemical Corporation Shanghai	Reduces its water consumption for the manufacturing of some products by reusing water from reaction processes of other products
Kao Vietnam	Introduced a spray technique for washing and sanitizing tanks, resulting in reducing its use of water and steam
Kao Industrial (Thailand)	Returns cooling water overflow to a cooling water pool to help eliminate unnecessary water consumption
Quimi-Kao, S.A. de C.V. (Mexico)	Concluded an agreement with the local community to receive treated water from the community's wastewater treatment plant. Reverse osmosis is employed to use sewerage effectively, and Quimi-Kao further purifies the treated water it has purchased and releases water left over from production into a river through the community's facility, thus contributing to local water recycling



## Climate change scenario analysis

It is reported that changes in the amount of rainfall and the rise in sea level caused by climate change are not the same around the world, and are different between regions. According to the RCP 8.5 scenario, future average annual rainfall will increase in high latitude and Pacific Ocean equatorial regions, and will decrease in arid mid-latitude and subtropical regions during the period from 2080 to 2100. According to that scenario, global average sea level rise will be 0.71m during that period, with a range from 0.51m to 0.92m, a substantial difference.

Accordingly, we assessed water risks caused by climate change at worksites, plants and distribution sites.

For the initial screening, we determined site conditions (primarily confirming nearby rivers, coastlines, elevations and so on from the perspective of flooding and storm surges), performed checks using existing tools (Aqueducts, hazard maps, etc.), and confirmed past examples (whether there had been past water damage and other natural disasters). Next, we used climate models to compare heavy rain, light rain and storm surge risks with the current climate (1951–2011) at sites identified in the initial screening.

The results indicated that light rain will occur at all sites at about the same frequency as under the current climate, and that heavy rain and storm surges will occur more frequently at some sites, and flooding damage will be at about the same levels that we assumed until now.

We will conduct more detailed analysis in the future and take necessary measures.

## Efforts during use

As water consumption in the product use stage accounts for around 90% of water consumption across the entire lifecycle, we are providing water-saving products and implementing consumer communication in regard to how to use these products properly.

In 2009, we launched *Attack Neo* laundry detergent, which requires only one rinse cycle, in Japan. 2019 saw the launch of *Attack ZERO*, which combines superb washing power and odor removal capability with zero detergent residues. We also offer a lineup of products for front-load washers, which use less water. Laundry detergents that require only one rinse cycle are now offered in Japan and Taiwan. We aim to make one rinse cycle the norm for clothes washing.

Through our Essential Research focused on foam, we have also succeeded in reducing the amount of water used when rinsing with other product categories too. In 2010 we launched *Merit Shampoo*, which uses 20% less water for rinsing than conventional products, followed in 2014 by *CuCute* dishwashing detergent, which also reduces the amount of water needed for rinsing by 20%, and in 2015 by *Bath Magiclean* bathroom cleaning liquid, which uses 10% less water for rinsing. We plan to continue rolling out new water-saving products based on our Essential Research.

We also communicate ways to save water to consumers using a variety of approaches. For example, we have developed eco shampoo techniques to use less water when shampooing hair, and we communicate these to consumers. Communicating ways to conserve water while offering water-saving products truly embodies “eco together,” the slogan of the Kao Environmental Statement.

## Implementing education and activities based on “eco together”

### Employees

- In regard to employee education based on Responsible Care activities, we implement relevant education for all employees.
- We implement relevant education for all employees working at applicable worksites at plants and research institutes that have secured ISO 14001 certification.
- We hold guided tours of the Kao Eco-Lab Museum for our employees.

(In 2020, we conducted online tours for employees to prevent the spread of COVID-19.)

### Customers

- We exhibit on water conservation at the Kao Eco-Lab Museum. (In 2020, we suspended tours for the general public to prevent the spread of COVID-19. We explained the role of water in our lives to elementary school students by conducting online tours.)

### Business partners

- We hold the Kao Vender Summit for important suppliers (suspended in 2020 due to effects of COVID-19).
- We asked suppliers to complete the CDP questionnaire survey.

# Water conservation 102-12, 102-43



## Local communities

- Many plants prepare annual environmental reports and communicate with local residents.

## National and local governments

- We conduct a water conservation campaign in China.
- We participated in the Water Project conducted by the Ministry of the Environment of Japan.

## Participation in China's Nationwide Cleanliness and Water-saving Initiatives—a water conservation campaign—for nine consecutive years

Kao (China) has conducted the Nationwide Cleanliness and Water-saving Initiatives jointly with the Center for Environmental Education and Communications of Ministry of Ecology and Environment, since 2012. In 2020, these activities were conducted from September to December.

Until now, we focused on water conservation as an activity to draw the attention of university students and the general public in China to water conservation, but starting this year, we expanded to include a wider range of environmental protection perspectives such as biodiversity, plastic reduction, low carbon and waste recycling.

Although there were effects from COVID-19, undertaking activities with a focus on university students in different areas, we received over 100 proposals from 67 universities in 21 provinces and cities throughout China during the approximately four-month period. From these, we selected 19 projects, which we helped implement.

The closing ceremony was held at a hall of the

Center for Environmental Education and Communications in Beijing in December 2020. Students' representatives from each region attended to ceremony remotely and accepted awards recognizing their efforts to conserve the environment by putting into practice activities of their own design and developed different activities to improve the environmental awareness of people in the community.



Closing ceremony held in Beijing

## Employees' voice

### Continuity is a strength

#### Wang Dan

Responsible for CSR,  
Kao China



Kao has conducted activities in collaboration with the Center for Environmental Education and Communications for nine years continuously since 2012. Initially, activities focused on water conservation, energy saving and environmental preservation targeting the general public, but in 2015 activities geared toward university students nationwide were started. This has raised the awareness of university students regarding environmental preservation, and the students were able to demonstrate their knowledge of the environment, make a wide range of proposals in environmental fields, and carry out those proposals.

As a person in charge, I felt the passion of the young students through activities intended to spread Kao's environmental preservation philosophy among university students, and I realized that I was growing alongside them.

As a result of these ongoing activities, many university students have become Kao fans.





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## Stakeholder engagement

### Expectations toward Kao to solve global water issues from a lifecycle perspective



#### Norihiro Itsubo

Dean, Graduate School of Environmental and Information Studies,  
Professor of the Faculty of Environmental Studies,  
Tokyo City University

As water issues become more serious around the world including in major cities, the role of Kao, which is deeply involved in the use of water in day-to-day life, is extremely important.

Chennai, the fourth largest city in India, has a population of ten million, has suffered major damage from both flooding and drought. In 2015, torrential rains dropped 494mm of water on the city in one day, causing flooding up to the second story of new office buildings and resulting in 1.8 million displaced persons. Four years later, in 2019, a major drought caused the depletion of water stores. Every day, trucks brought 10,000m<sup>3</sup> of household water into the city, and people formed long lines to receive water. There were even instances of water theft. Water and sewage system have not been able to keep up with the drastic increase in water demand due to the sudden expansion of the city, and the areas of lakes and other water sources are

just one-fourth those of ten years earlier, making pollution even worse. Climate change will make this situation even worse.

The rapid deterioration of the urban water environment is not limited to Chennai. Major cities around the world including Sao Paulo, Beijing, Cairo and Jakarta are facing severe water shortages. According to the United Nations, 2.2 billion people do not have access to clean drinking water, and 4.2 billion people lack adequate sanitary facilities including toilets. Also, 3.0 billion people are unable to wash their hands at home, making it difficult to take even basic action to prevent COVID-19. Achieving the 2030 SDGs is at risk.

Water consumption relating to products sold by the Kao Group in one year is 2.8 billion m<sup>3</sup> throughout their entire life cycle, which is equal to about 20% of the total annual water consumption of 15.0 billion m<sup>3</sup> in Japan. The bulk of the water is used during the product use stage, that is, water used in the bath or shower, toilet, kitchen and so on, but it is noteworthy that over 15 years, Kao has reduced water consumption per unit of sales by about 30%. This is the result of boldly switching its main products such as detergents and shampoos to water-saving types and conducting consumer awareness programs.

Kao has set a target of reducing its water footprint in drought-affected areas by 40% by 2030 compared to 2017. If it is able to achieve this, many people in large cities around the world such as Chennai will benefit.

Just as climate change measures have shifted from low-carbon to decarbonization, it may be necessary for urban water measures in drought-affected areas to shift from “water conservation” to “no water.” It is projected by in 2050, some 5.0 billion people around the world will be affected by water shortages. I hope that Kao will

overturn this forecast through its innovative technologies.