

Sustainability Report

2018-2019





Takasago International Corporation

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About This Report

Scope and Boundaries

The scope of this report is the Takasago group. This includes consolidated subsidiaries as well as non-consolidated subsidiaries defined by the equity-method.

Period Covered

Fiscal 2018. In this report, the term of "Fiscal" is as follows;
From April 1, 2018 to March 31, 2019 for Japan
From January 1, 2018 to December 31, 2018 for the others

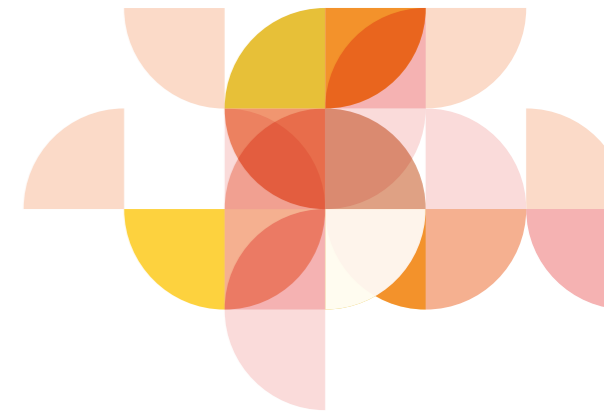
External Assurance

There is no external assurance for this report.

Guideline referenced

GRI Standard (Core)

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Corporate Communication Tools



Corporate brochure



Corporate Governance Report
(Japanese only)



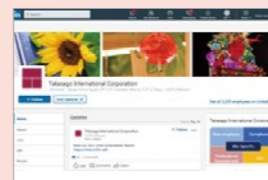
Social and Environmental Report
(Japanese only)



Sustainability Report
2018-2019



Corporate website



LinkedIn Takasago site

Message from President and CEO



Last year, the Takasago group launched a new medium-term management plan One-T (the last phase of Takasago Global Plan) with a target of the sales turnover at 170 billion yen and the ratio of operating profit to revenue at 5.2%. The group will celebrate 100th anniversary in 2020, the final year of this management plan.

In 2018, Takasago reported record high sales turnover for the first year of One-T. What has contributed to this good result and what are issues that the company needs to tackle?

Our sales turnover for fiscal 2018 increased by approximately 6% or 9 billion yen over that of the previous year - exceeding 150 billion yen for the first time. The operating Profit however decreased by approximately 8% from the previous year to 5.8 billion yen. As a result, fiscal 2018 ended up with “a fall in profit despite a jump in sales”. A significant increase in the procurement cost of raw materials was the main reason for the pressures on the profit. Natural raw materials shortages due to natural disasters, shortages of crude materials triggered by accidents of chemical plants, and factory closures

due to tightened environmental restrictions in China - all contributed to significant raw material cost increases.

Even under these circumstances, our growth in Asia continued to steam ahead with double-digit figures. Despite the Asian market growth slowing down, our double-digit growth was achieved by acquiring a number of new businesses.

Our India business specifically, started bearing fruits and showing good results. The vanilla business has become one of our core businesses. In addition, a couple of new Takasago original aroma ingredients, for fragrances were launched in 2018. The fine chemical business, despite a slower growth trend, further improved its business portfolio with the successful expansion using a novel LAH (Lithium Aluminum Hydride) reaction process.

We continued to pursue large-scale investments to ensure our continued growth. Some examples of these are building a production site in Jakarta, Indonesia, acquisition of additional land in Germany for the future expansion, and then expansion of the flavor production facility in Guangzhou, China.

Satoshi Masumura
President and Chief Executive Officer

It appears global activities are moving forward and gaining momentum. What are concrete action plans for the second year of One-T?

For the second year for One-T, the primary focus will be on raw materials procurement and strengthening partnership with strategic suppliers. The cost of raw materials, both natural and synthetic, has soared significantly-much more than we had anticipated for One-T period. To cope with the situation, a strategic sourcing program called TaSuKi has been implemented. Strategic medium and long term plans and agreements with key suppliers have been or are being developed to ensure the stable supply and prices of key strategic materials. Over many years, Takasago values partnership with key supplier, such as by setting up a joint-corporation with a vanilla processing company in Madagascar and making strategic ties with a processor of grapefruit and orange juices in U.S.A. for citrus flavor/fragrance ingredients. With a long-term view always, we

continue to reinforce this solid partnership we have developed over the years and pursue stronger and strategic ties with all of our key suppliers.

Enhancement of global corporate functions is also a key element for our continued success in the future. We are now reviewing and improving business flows among the group companies and working very hard to integrate various systems to ensure appropriate and timely global alignment. Incorporating the best practices of the Takasago group and standardizing business processes globally will surely improve the efficiency and profitability of the entire group's operations. Globally aligned business processes will enable us to optimize our human resources across the group companies and ensure that we manufacture the same quality products across the globe.

As for capital investment, the new production facility in Jakarta will start its operations soon. Indonesia, which has the largest Muslim population in the world, is a fascinating market with 260 million people and a key for our continued aggressive growth in Asia. Currently, products are imported mainly from Singapore and supplied to customers in Indonesia.



In respond to a fast-growing demand in the market, we decided to build a production facility in Jakarta. When completed this fall, Takasago will gain an additional production capacity in South East and South Asia. This production facility, together with our facilities in Singapore and India, allows us to manufacture products at these three sites to supply for growing markets in the region. This will also enable us to shorten lead-time as well as secure

flexibility in business plans including business contingency. This will certainly enhance our market presence in many aspects.

This year, unfortunately, the significant negative impact from high procurement cost has impacted our profitability. We continue to tackle issues one by one patiently and resolve these issues on a timely manner.



How about the progress of your initiatives for sustainability? Strengthening sustainability throughout the group is one of your corporate action plans.

During the first year of “One-T”, we made steady progress. Revision of the Charter of Corporate Behavior and Code of Conduct was one of the plans that we have pushed forward. The revision includes our commitment to addressing global challenges such as human rights and climate change, governance concerns such as the risk management including cyber security, realizing a sustainable society (Society 5.0) through innovations, and also ensuring the management’s strong involvement. With that background, the board of directors regularly takes up climate change and TCFD recommendations. The board spent a lot of time discussing material issues last year. This year we strive to embody actions to tackle climate change such as preparation for acquiring SBT Initiatives. It is very important to integrate these environmental and social issues and concerns into business actions. In Japan, ever since the Meiji period, an idea of corporate social responsibility has been rooted with a phrase “Benefit for All Three Sides”. Likewise, our corporate philosophy “Contributing to Society through Technology” clearly mirrors this commitment to our social responsibility. Everyone in the Takasago group is continually reminded of “Contributing to Society”, to ensure that we integrate this into our business activities.

Operational safety is also a key in pursuit of sustainable management. Since the fire accident in 2013, we have ensured “Safety is Our Priority” in all our operations. We have also set April 10th as “Takasago Safety Day”, during which the Takasago group reaffirms our commitment on operational safety and all the employees across the globe participate in global as well as in site-specific safety programs. In addition to our day to day safety activities, our initiatives for ISO45001 certification will also help us pursue our global safety alignment and improvement in occupational safety management.

What are R&D demands from the global market?

To meet a growing demand of sustainable products, we are focusing on environmentally friendly products/processes, employing the Takasago group’s unique technologies, such as catalysts and continuous flow for the synthetic products, and natural flavor and fragrance ingredients utilizing fermentation method as well as natural resources processing. Our technologically-driven approach will push us forward to become a top-class flavor and fragrance company.

As for fine chemicals, we added in our technological portfolio a new process innovation to commercialize LAH reaction last year. It was considered extremely difficult to realize the chemical reaction process at a chemical plant scale due to its high reactivity. Combining with our continuous flow technology that

ensures safety, we succeeded in the LAH reaction commercialization. We continue to further deepen continuous flow technology capabilities and broaden our product range to meet the ever-changing market needs. This will continue to enhance our synthetic business portfolio.

When it comes to fragrances, we often receive requests for fragrances composed of renewable ingredients from customers in Europe and Americas. Last year, Takasago launched a renewable-resources based and highly biodegradable aroma ingredient utilizing our original asymmetric chemistry. As lily-like synthetic aroma ingredients are banned in EU states, Takasago developed an aroma ingredient that utilizes components derived from lily with a safe and environmentally friendly manufacturing process. This has been adopted in a wide range of applications such as fine fragrances and detergents. We also focus on the development of natural flavor ingredients in respond to an increasing demand for natural flavors. Utilizing a company Takasago acquired in 2016 which is specialized in the manufacture of natural ingredients - Central Ingredients Technology, Inc., we are very well positioned to develop and manufacture new and unique bio-based flavor ingredients.

Our Vanilla Center and Citrus Center also play key roles in the expansion of our natural flavor ingredients’ pallet to meet the ever-increasing global needs.

How do you envision Takasago to be as it approaches its 100th anniversary?

Takasago’s corporate logo “Square T” is also called “Triple T” that stands for our strong belief “Trust is earned from technology and teamwork”. We will continue our efforts to understand our customer’s perspective, strengthening sales & marketing forces, enhance R&D capabilities, conduct thorough quality control on all our products, and provide flexible services with agility to ensure a corporate focus on delivering customer satisfaction.

We will celebrate 100th anniversary next year. One hundred years ago, the founders of Takasago had a dream to spread high quality aroma products incorporating Asian and Japan originated natural flavor and fragrance raw materials and synthetic aroma ingredients from Japan to the world. Returning to the same spirit of founders, through aroma, I believe we continue to contribute to health of mind and body of people around the world. Based on our corporate philosophy “Contributing to Society through Technology”, we consolidate all the knowledge and expertise that the group possesses and resolve issues that we are facing, strive to make the management foundation firmer and continue to aim for sustainable growth of the Takasago group.

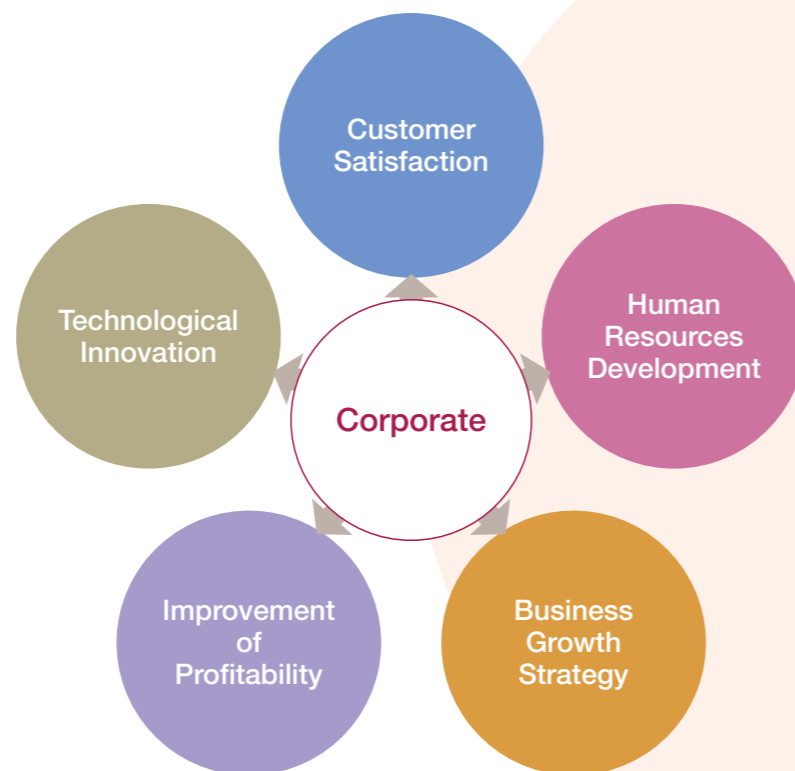
Corporate Vision

Corporate Philosophy

Contributing to Society through Technology

Medium-term Management Plan “One-T”

It is essential to combine all management resources of the Takasago group and make group-wide efforts to produce creative and innovative value for the year, 2020. We set the new medium-term management plan “One-T” (FY2018-2020), shortened form of One-Takasago which is also a slogan for united the Takasago group. Towards the realization of one of our basic management policies “A leading flavors and fragrances company in the global market that consistently supplies dependable products,” we will grow continuously by carrying out our plans with the following five pillars.



Basic Management Policy

- A well regarded company that respects the global environment and local communities.
- A leading flavors and fragrance company in the global market that consistently supplies dependable products.

Basic Policies in the One-T

1. Customer Satisfaction

Through improved sales capability, enhanced research and development, comprehensive quality control, and swift and flexible business actions, we aim to improve customer satisfaction.

2. Business Growth Strategy

While increasing our market presence and securing stable profits, we aim to strengthen our business foundation and to achieve net sales target of 170 billion yen.

3. Technological Innovation

With the corporate philosophy of emphasis on technology in mind, we strive to develop new technologies and products with great originality and superiority, and to apply their achievements to our global business.

4. Improvement of Profitability

Through optimizing value chain and re-engineering business processes globally, we aim to achieve an operating income ratio target of 5.2%.

5. Human Resources Development

We will optimize our human resources, develop staff members who will pursue ambitious initiatives in new areas, and create an environment where our staff members can fulfill their potential globally.

◆ We put the concept of “Corporate” in the center of the basic policies above and as a global company, we will harmonize rules and guidelines as well as integrate systems to strengthen our corporate governance and accelerate the globalization. This will move us ahead to achieve One-Takasago.

Corporate Profile

Takasago International Corporation, headquartered in Tokyo, Japan, develops, manufactures and supplies flavors, fragrances, aroma ingredients and fine chemicals. Our products are in foods, cosmetics, household products and pharmaceutical intermediates for the life science industry, and functional materials for the electronics industry.

We have now business operations in 27 countries and regions around the world. Takasago strengthens its market presence worldwide and accelerates the growth in every area where we are.

As of end March, 2019

Corporate Profile

Name	TAKASAGO INTERNATIONAL CORPORATION
Headquarters	5-37-1, Kamata, Ota-ku, Tokyo, 144-8721, Japan
Founded	February 9, 1920
Capital	9.2 billion JPY
Employees worldwide	3,470

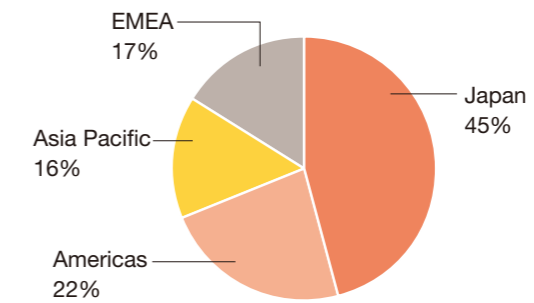


Financial Highlights (billion JPY)

EMEA*
Sales25
*Europe, the Middle East, and Africa

Asia Pacific
Sales24

2018 Sales Turnover by Region



150 billion

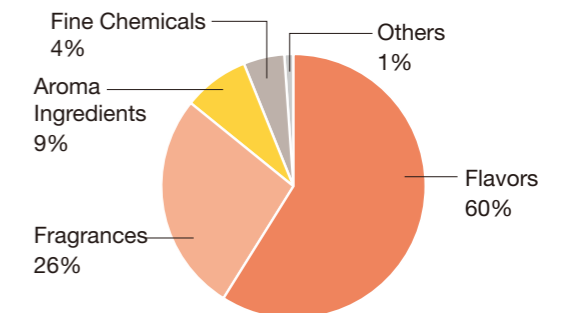
Japan
Sales68

Americas
Sales33

4 Core Businesses



2018 Sales Turnover by Category

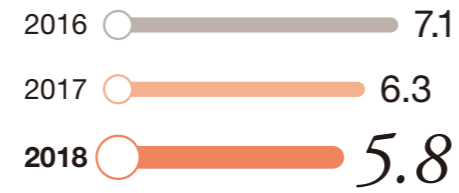


150 billion

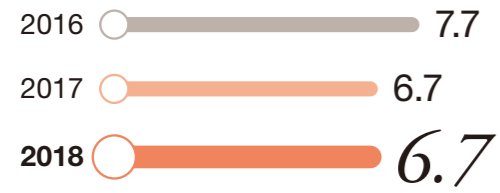
Sales Turnover



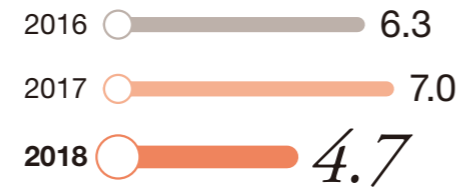
Operating Income



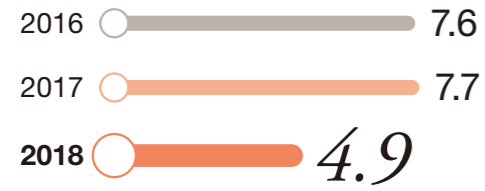
Ordinary Income



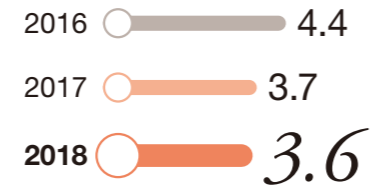
Net Income



ROE* %



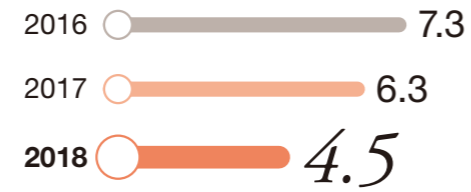
ROA* %



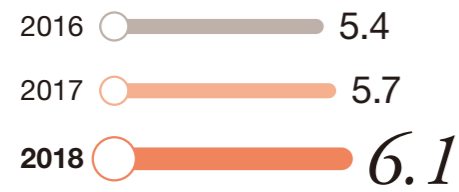
Equity Ratio %



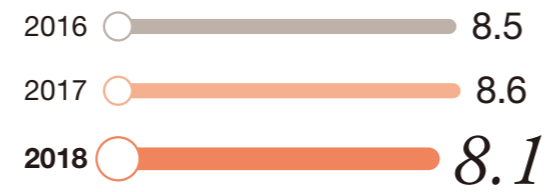
Capital Investment



Depreciation Expense



R&D Expense to Sales Turnover %



External Partnerships and Initiatives

Takasago engages in several organizations, supports initiatives and responds to sustainable related platforms including below.

- American Chemical Society
- CDP
- EcoVadis
- European Flavour Association (Executive Board)
- Flavor and Extract Manufacturers Association (Board of Governors)
- International Fragrance Association (Board of Directors)
- International Organization of the Flavor Industry (Board of Directors)
- Japan Business Federation
- Japan Chemical Industry Association
- Japan Flavor & Fragrance Materials Association
- Japan Food Additives Association
- Mint Industry Research Council
- Natural Renewable Stewardship Circle
- Rainforest Alliance
- Research Institute for Fragrance Materials (Board of Directors)
- Roundtable on Sustainable Palm Oil
- Sedex
- Syndicat National des Fabricants de Produits Aromatiques
- UN Global Compact



Business Outline

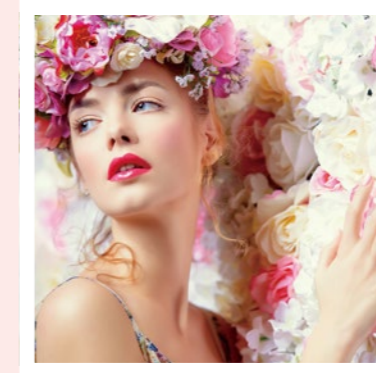
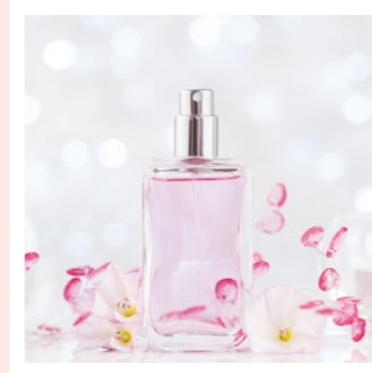
Takasago has been developing innovative flavors, fragrances, aroma ingredients and fine chemicals to enrich people's daily lives.

Flavor



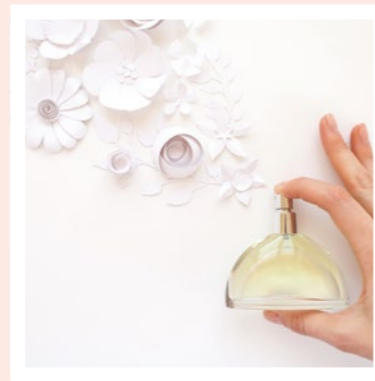
We design to taste...

Fragrance



Creativity, inspired by nature and powered by science

Aroma Ingredients



Endless Possibility

Fine Chemical



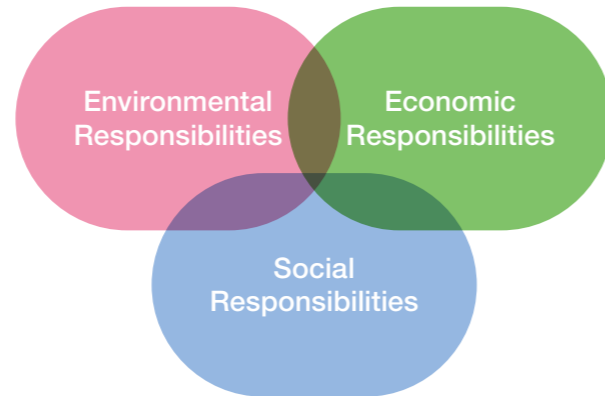
Green Chemistry

Sustainability at Takasago

Sustainability Vision

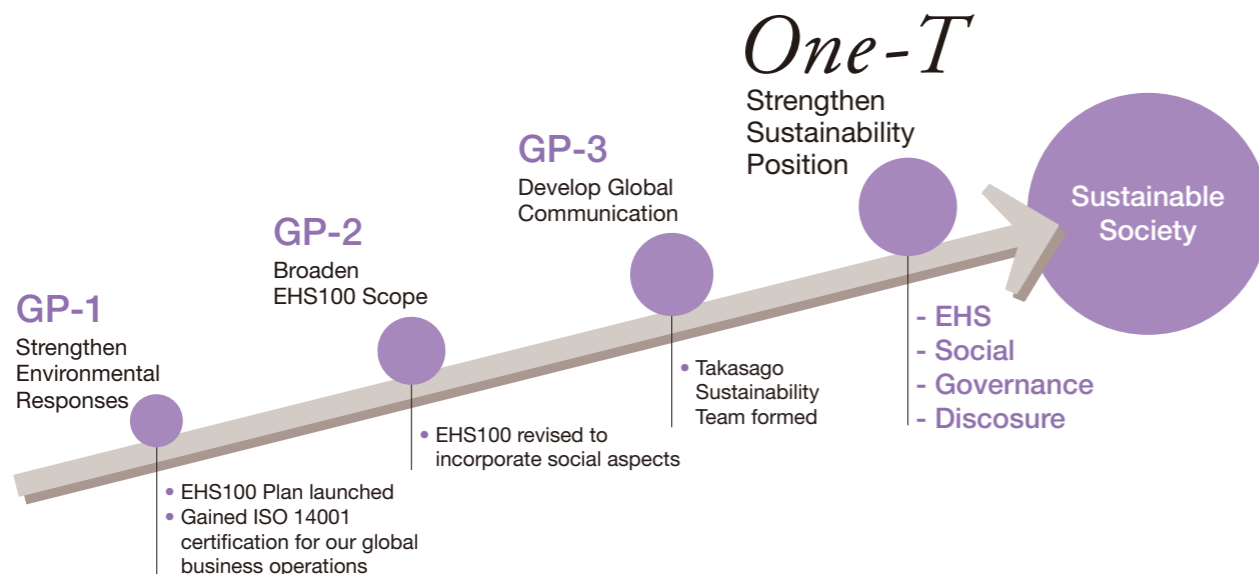
As a company that recognizes its corporate responsibility to the global environment and aspires to be a society's most trusted partner, we position sustainability as one of the key cornerstones of our business to ensure a prosperous society for future generations.

Furthermore, as a responsible corporate citizen, we fulfill our economic, environmental and social commitment in a well-balanced manner. Specifically, we make utmost efforts to reduce our environmental impact through diverse initiatives for reduced waste and improved energy efficiency, to conserve bio-derived materials, and to actively embrace diversity in our workforce through a sound diversity management.



History

Takasago has been actively developing environmental initiatives into the business activities since the environment statement was first published in 2002. Throughout midium-term business plans, Takasago has been expanding its scope to social aspects, such as human rights and diversity and to all sustainability-related issues.

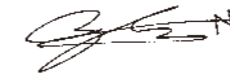


Message from Senior Vice President

Action Plans 2018-2019



Tatsuya Yamagata
Senior Vice President,
Global Integration Headquarters,
and EHS Executive



The Takasago group considers sustainability as a vital element for our growth. Strengthening our sustainability position is defined as one of the key corporate action plans under "One-T", launched in April 2018. Global Integration Headquarters, newly formed to achieve the aim, is responsible for strategizing and planning as well as leading Takasago Sustainability Team, which consists of our functions of Environment, Health and Safety (EHS), Human Resources, Operations, R&D and Quality Assurance. For these three years, Takasago has been focusing on EHS, social aspects, governance, and disclosure. The group is strongly committed to tackling global issues and fulfilling the our corporate responsibility as a member of society. This will also help enhance the corporate value in a long term.

We are proud to say we made a lot of progress during the first year. As for governance, we revised the Charter of Corporate Behavior and Code of Conduct with the strong commitment to global challenges addressed by the UN Sustainable Development Goals (SDGs) as well as to society 5.0: Japan's big societal transformation plan. Takasago Group Human Rights Policy was also developed for the purpose of stipulating our thoughts and commitment, and embodying a process (Human Rights Due Diligence) to implement a risk management in all our business activities. Additional measures to ensure the cyber security are being taken and will continue to be upgraded.

With regard to EHS, we fully recognize the climate change as an urgent global issue. Last year, the board of directors actively discussed TCFD recommendations. In October 2018, Takasago joined Japan Climate Initiatives and began to prepare for applying for the Science Based Targets initiative(SBTi). CO₂ emission reduction is a key issue that Takasago has been tackling for many years under our EHS100 Plan. In addition to down-to-earth, day to day efforts, we will continue to investigate additional ways to increase renewable energy use as well as the development of manufacturing processes to bring in more green chemistry and improve its production efficiency. Preparation of acquiring ISO45001 certification also started. Along with continuous and steady efforts to be made at each affiliate, ISO45001 certification will help strengthen and globally standardize our operational safety management.

As for social aspects, we aim to strengthen stakeholder engagement. Last year, Takasago Conflict Minerals Policy was developed and communicated with relevant vendors on top of the Supplier Code of Conduct. We will monitor to ensure the dissemination in a wider scope throughout the supply chain. Lastly, we continue to stress transparency and timeliness on our information disclosure. Last year's sustainability report was made in line with GRI guidelines for the first time. This year we continue to disclose information in an appropriate manner through the report and various media.

We make the utmost efforts to strengthen our sustainability position, fulfill our corporate responsibility as a member of society and strive to enhance the corporate value in a long term.

*ISO45001: Occupational Health and Safety Standards

Takasago Sustainability Team

Takasago Sustainability Team has been formed since 2016 to ensure that all our activities are globally aligned with the vision and strategy and action plans are conducted in a timely and appropriate manner. The team consists of five key corporate functions which are EHS, Human Resources, Quality Assurance, Operations, and R&D.



General manager of Global Integration Headquarters is leading the team and communicates key sustainability issues at the board of directors. Sustainability Promoting Committee, in which representatives from each function participates, takes place regularly at Headquarters to exchange information and concerns and monitors the progress on our activities.

Respective team is responsible to communicate globally across its functional area and develop its own action plans following the corporate strategy. A global meeting takes place every quarter or so to build mutual communication and discuss issues and concerns

as well as monitor the progress. Through this global communication matrix, Takasago is strengthening sustainability across the globe.

Revision of the Charter of Corporate Behavior and Code of Conduct

As a global entity with the corporate philosophy “Contributing to Society through Technology”, the Takasago group has established the Charter of Corporate Behavior and Code of Conduct to globally implement its business principles and ethics. It is well communicated with all the employees across the globe and incorporated into the employees’ practices and

behaviors. Takasago reviews the Charter of Corporate Behavior and Code of Conduct whenever necessary. The latest revision was made in December 2018 to add our commitment to tackling global challenges such as climate change and human rights as well as innovation to embody Society 5.0: Japan’s big societal transformation plan.

Materiality Assessment

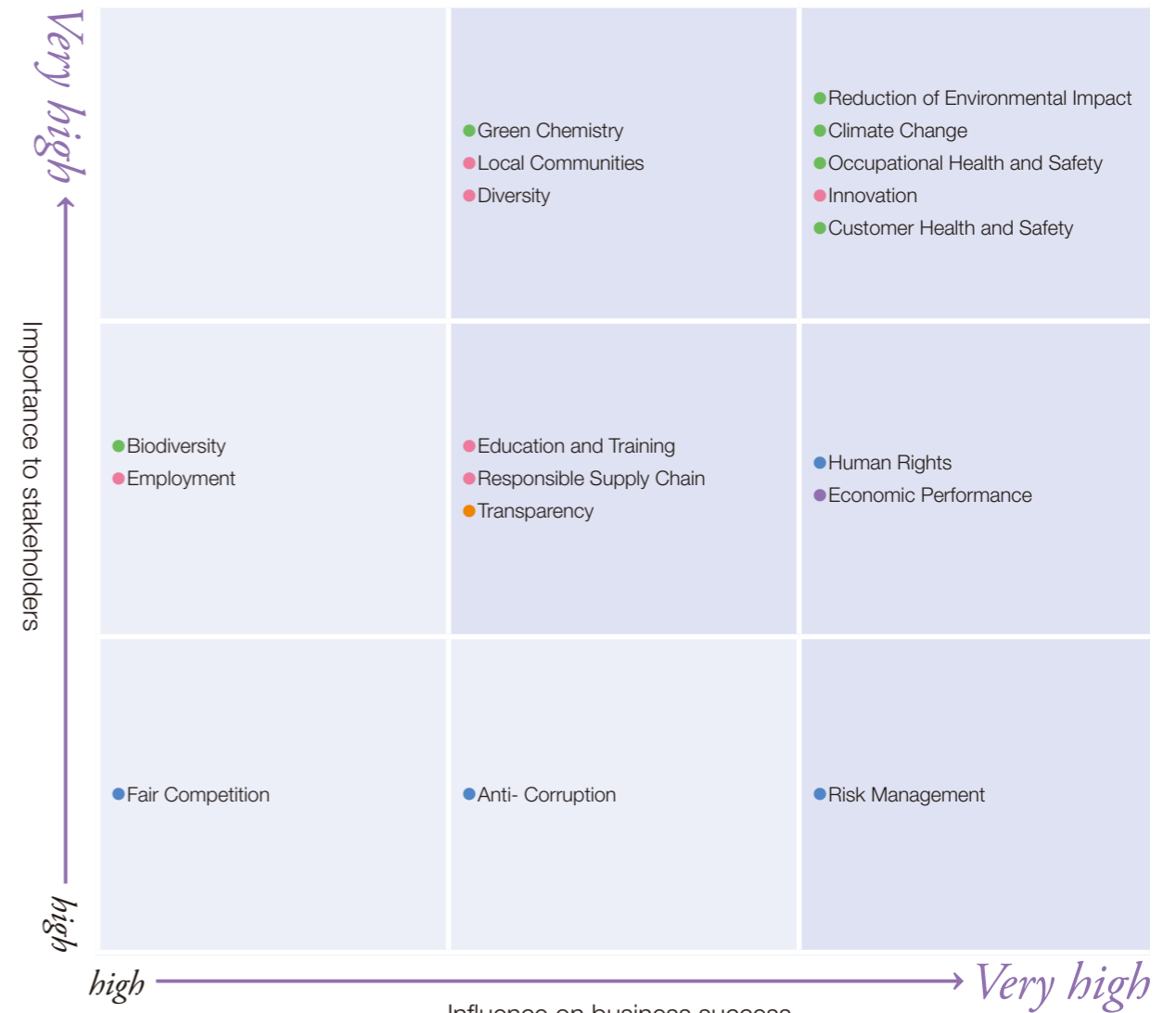
Takasago conducts a materiality assessment, taking external opinions into consideration, and reviews its material issues every year. In our materiality matrix, X-axis represents “company’s influence on business success” and Y-axis represents “importance to stakeholders” defined by a third party organization, with reference of global sustainability indexes, such as

Dow Jones Sustainability Index (DJSI), and standards of Sustainability Accounting Standards Board (SASB). X axis is discussed and reviewed by Takasago Sustainability Team and brought up to the board of directors for further discussion and decision-making. The content and topic boundaries of this report are defined according to the following process.

Process for defining materiality



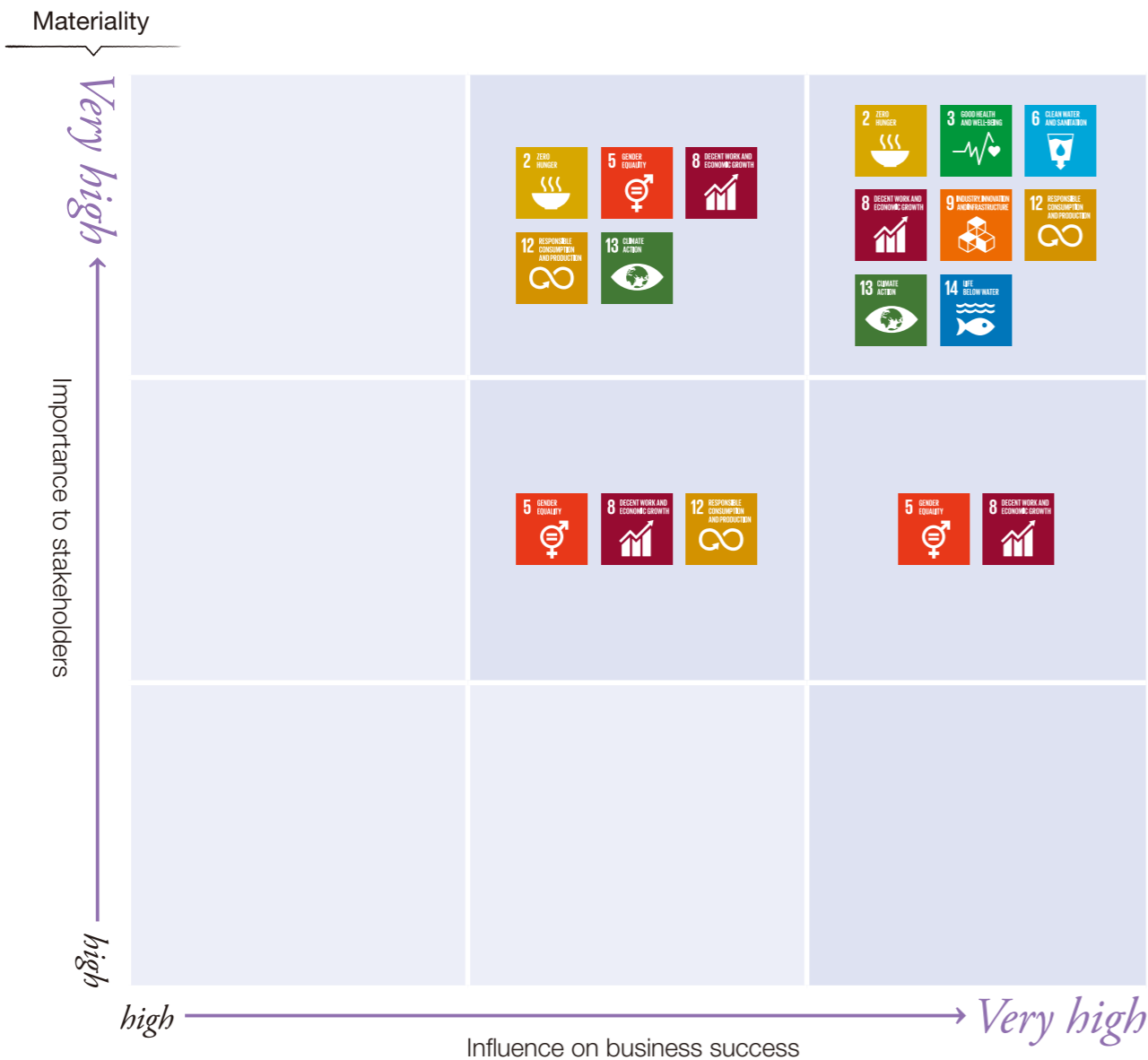
Materiality 2018-2019



Our Business Activities and SDGs

In June 2017, Takasago signed the UN Global Compact. The group adheres to the ten principles in the areas of human rights, labor, environment and anti-corruption. Our business activities are originally aligned with the United Nations Sustainable Development

Goals (SDGs) in many aspects such as reducing CO₂ emissions for Goal 13 and process-innovation for Goal 9. We will further enhance our business operations to help achieve SDGs with strong commitment to tackling global challenges.



Category	Material Issues	Plans
EHS	<ul style="list-style-type: none"> Occupational health and safety Reduction of environmental impact Climate change Biodiversity 	<ul style="list-style-type: none"> Acquire ISO45001 EHS 100 Plan Authorization on SBT Initiatives TCFD recommendations Enhance engagement with community
Social	<ul style="list-style-type: none"> Promoting diversity Community Responsible supply chain Innovation Green chemistry Education and training Employment 	<ul style="list-style-type: none"> Global alignment Enhance engagement with community Suppliers and partners assessment Renewable resources Concept, product and process Innovation Continuous flow/ manufacturing process Bio technology process Enhance education and training program Career development
Governance	<ul style="list-style-type: none"> Human rights Anti- corruption Risk management Fair competition 	<ul style="list-style-type: none"> Human Resource Due Diligence Global training program Strengthen management Global training program
Disclosure	<ul style="list-style-type: none"> Transparency 	<ul style="list-style-type: none"> Enhance information disclosure

Our Activity

Governance

- Risk Management
- Crisis Management
- Compliance
- Human Rights

EHS

- Environment
- Occupational Health and Safety
- Takasago Safety Day 2018

Social Aspects

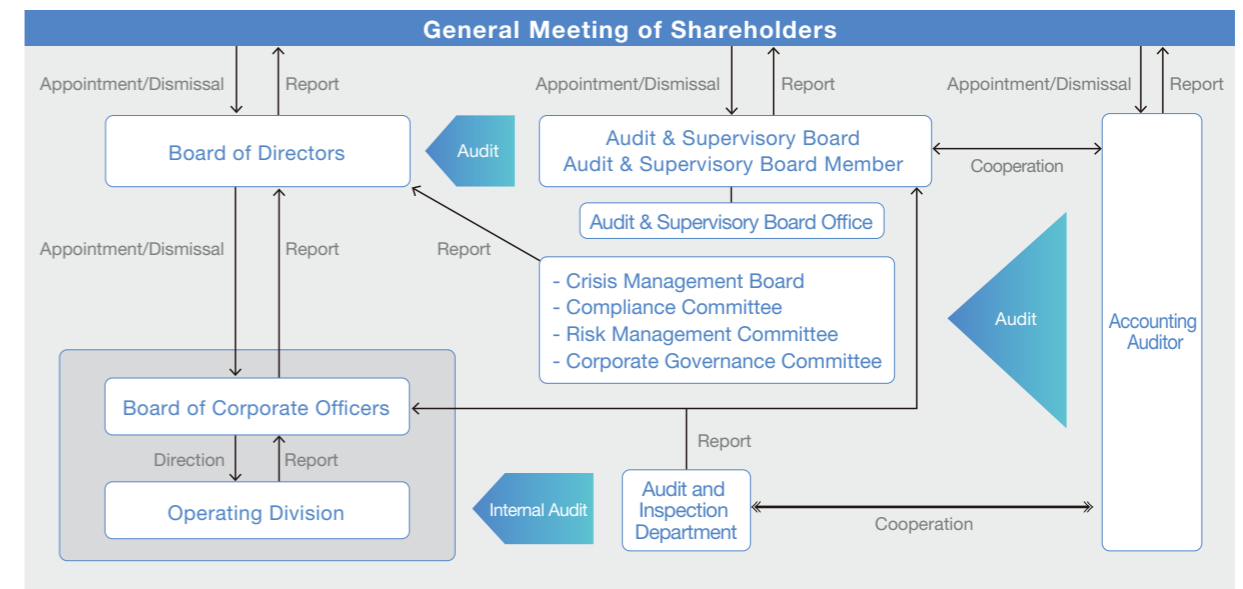
● Stakeholder Engagements

- Shareholders and Investors
- Suppliers
- Customers
- Employees
- Society

Governance

At the Takasago group, we continue to further strengthen our corporate governance by ensuring that decisions are made according to the corporate guidelines and the process is properly monitored by the board of directors. Transparency in corporate activities is further enhanced through appropriate information disclosure. In addition to establishing the basic policy on internal control, a corporate officer system was introduced to clearly separate the board of directors' supervisory and policy making functions from corporate officers' execution and implementation

roles in the business operations. This is to ensure that both the directors and corporate officers remain focused on their primary roles and that the decisions made and directions set by the board are dutifully executed in a timely manner. Improvements of the governance structure have been made continuously. In addition to Crisis Management Board, Compliance Committee, and Corporate Governance Committee, Risk Management Committee was newly organized in March 2019. All committees are chaired by Satoshi Masumura, our President and CEO.



Risk Management

The Takasago group does not only value the environment and society, but also the sustainability of our business. In order to fulfill our responsibility to every stakeholder, Takasago regularly monitors and identifies risks that could potentially affect our business stability while striving to maximize stakeholder value.

Our Risk Management Committee, consisting of general managers, identifies potential risks that may hinder business continuity, as well as formulates and reviews preventive measures against them. The risks identified are reported to the board of directors meeting for further review.

We will continually develop and implement measures to mitigate each of the risks listed below in the best possible way.

Risks Identified

Climate Change

The Takasago group's financial performance could be significantly impacted by climate change, unexpected climate variability or extreme weather events due to global warming caused by greenhouse gas emissions, or unseasonable weather that occurs irregularly. For example, as the group sources and uses a variety of natural raw materials, shortage and price hike of natural raw materials, caused by climate change, could restrict the operations. Also, unseasonable weather in summer could affect the sales of our flavor products for beverage market, which is one of our main categories.

Exchange Rate

The Takasago group develops, manufactures and supplies products in a global scale, taking advantage of having 11 overseas consolidated subsidiaries. Due to fluctuation of the exchange rate, the non-consolidated financial statements, when exchanged into Japanese yen, could potentially affect the financial condition of the consolidated financial statements. In foreign currency transactions, significant fluctuations of

the exchange rate could impact the group's business results and financial condition.

Globalization

The Takasago group conducts business globally. Confusion of politics, economy, society and many other aspects caused by emergent situations such as terrorism, war, pandemic, and so on, could significantly affect the business performance and financial condition.

Procurement/Sales

The Takasago group sources raw materials and supplies its products around the world. Natural disasters, trend in consumer preference, changes in international and local regulations and other significant changes are factors that influence the procurement and sales activities, and thereby significantly affect our business performance and financial conduction.

Accidents/Disaster

Natural disasters or accidents that occur in the areas where our production sites are situated could damage production facilities and disrupt procurement, distribution and sales. Consequently, these difficult situations could negatively affect Takasago's business performance and financial condition.

New Products Research and Development

The Takasago group continues to make an effort for research and development of new products well ahead of potential needs of the market. However, delay of developments or unforeseen changes of consumer's preference could negatively affect the effect of investments for research and development.

Information Security

The Takasago group deals with confidential information related to research and development, production, marketing and sales, as well as the personal information of numerous customers. The Takasago group's business results and financial condition could be affected by leak of confidential or personal information held by the group resulting from attacks on its server, unlawful access to it, a computer virus invasion or other factors that are out of our control.

Economic Conditions

Future recession or economic downturn in main markets, both in and outside Japan, could affect our sales performance. It could also lead to a change in consumer demand that holds off on buying home products, foods and so on under the stagnating economic situation. Decline in consumers demand in main markets could impact the Takasago group's business results and financial condition.

Compliance

To conduct our business globally, the group complies with laws and regulations or relevant standards on product quality and safety, the environment, and chemical substances as well as accounting, tax, labor, and transactions in each country and region. In case new laws and regulations or relevant standards are put into effect, they could make a significant impact on our business performance, restricting the group's business activities and requiring additional investments to cope with the situation.

Human Resources

The Takasago group is expanding business all over the world. There could be a risk that the group fails to sufficiently secure and develop human resources, which could affect our financial performance and position.

Compliance

The Takasago group considers compliance to be one of its top priority management issues and strives to continuously improve its compliance system while ensuring fair and proper business activities and effective corporate governance. The group has a compliance hotline that enables all employees to report violations of compliance and consult their concerns on compliance issues. Through an internal publication, KUMPU, all employees of any type of contract within the group are informed of the compliance hotline.

During the reporting period, we identified no issues brought up through the system. Nor was there any incompliance with any laws and regulations in the social as well as economic areas.

Human Rights

The Takasago group fully recognizes respect of human rights as our corporate responsibility. The Charter of Corporate Behavior and Code of Conduct, revised in 2018, includes respect of human rights, which is to be incorporated into our corporate culture. To further strengthen its commitment, "Takasago Group Human Rights Policy" was developed based on the Universal Declaration of Human Rights and International Covenants on Human Rights, the International Labor Organization Declaration on Fundamental Principles and Rights at Work, the Ten Principles of the United Nations Global Compact, and the United Nations Guiding Principles on Business and Human Rights. Human Rights Due Diligence is in place to identify, prevent and mitigate relevant risks.

Crisis Management

Takasago has established its crisis management system, including business continuity plan (BCP), which enables us to take necessary precautions against possible disasters and emergency situations. All the procedures are to help effectively minimize the impact of a contingency, and immediately restore normal operating conditions. The Crisis Management Board is set up at the Corporate Headquarters in Tokyo. In the event of a crisis, no matter where it arises, the Crisis Management Board organizes a meeting to control the situation and give directions.

EHS

Environment, Health & Safety

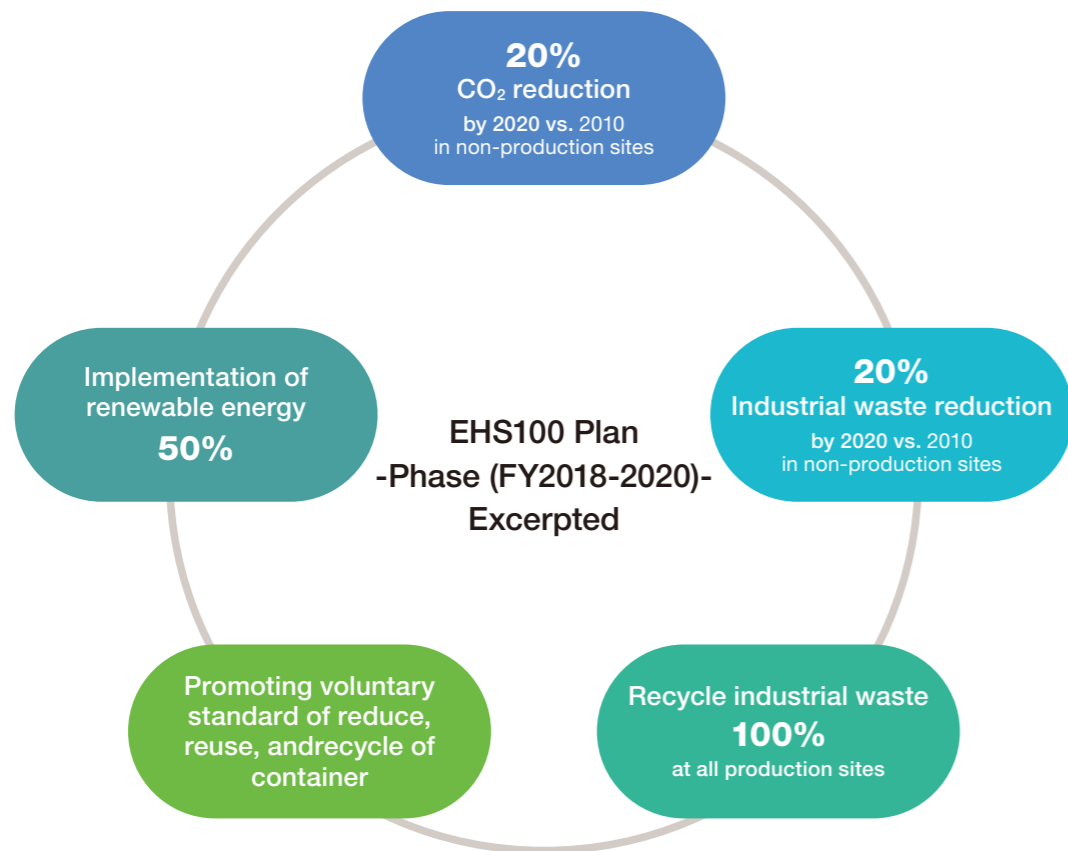
Global EHS Management

The Takasago group is aware of the importance of environmental conservation and the health and safety of its employees and the other stakeholders.

Our EHS Headquarters is responsible for strategizing and planning as well as leading the Global EHS Committee, in which the EHS representatives of each affiliate participate. The Committee takes place every quarter to monitor our global activities on the environment, and occupational health and safety.

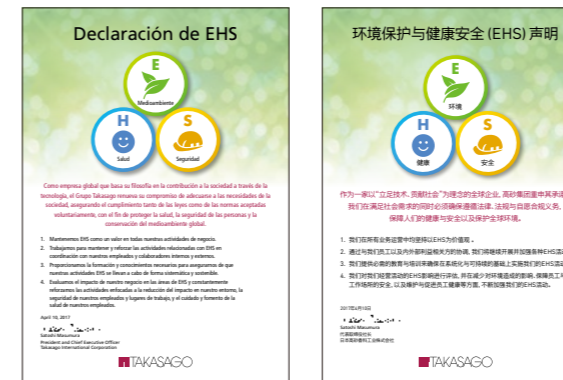
The EHS Headquarters developed the group EHS Guidelines and Minimum EHS Requirements to set

the group requirements and implement them in an appropriate global alignment. Takasago has been implementing a long-term EHS plan called EHS 100 (2009 – 2020) that includes objectives such as climate change (reduction of CO₂ emission), environmental conservation (reduction of water use), waste management, promotion of renewable energy, and management of chemical substances. EHS data associated with these objectives are entered into the EHS management system, called T-ReCS, by each site on a regular basis and collected by EHS Headquarters for monitoring. Also, for enhancing operational safety, we are preparing to gain certification to ISO45001 standards by 2020.



Our EHS Statement

Our EHS Statement are available in 11 languages, to disseminate the group mission to all employees, who are working in 27 different countries.



From left: EHS Statement (Spanish), EHS Statement (Chinese).

Global EHS Manager Meeting

On top of a quarterly-held video meeting, a face to face meeting takes place every three year at our headquarters in Tokyo. The objectives are to share EHS related activities of each site regarding EHS and to ensure our achievement of EHS100 goals. In January 2019, we released our newly developed Occupational Health and Safety Risk Assessment Rules. Prior to official release of the rules, the briefing session was held during the global EHS manager meeting. In addition, the risk assessment workshop was conducted to get the EHS managers familiar with the rules, hazard identification and risk evaluation.



Global EHS Manager meeting, workshop



Environment

As part of its basic management policy, the Takasago group aims to be “A well regarded company that respects the global environment and local communities” and endeavors to reduce the environmental impact of its activities.

Environmental Management System

As of December 2018, 20 production sites, Corporate Research & Development Division (Hiratsuka, Japan) and EHS Office at Headquarters are certified to the ISO 14001 standards under a single corporate certificate.

Organization	The Takasago group
Address	5-37-1, Kamata, Ota-ku, Tokyo, Japan
Standard	ISO 14001:2015
Scope of Certification	Development and Manufacture of Flavors, Fragrances, Aroma Ingredients, and Fine Chemicals

Site Registered	
JAPAN	EHS Office
	Hiratsuka Factory
	Iwata Factory
	Kashima Factory
	Corporate Research & Development Division
	Hadano Factory
	Iwata Factory
	Kakegawa Factory
OVERSEAS	Factory
	Flavor Factory
	Fragrance Factory
	Pudong Factory

*As of December 2018

Energy and Emissions

The Takasago group manufactures flavors and fragrances incorporating a variety of natural raw materials, which are sourced from all over the world. The price, quality and supply volume of our raw materials have been affected by bad weather globally especially these years. In addition, some of our production bases have been directly affected by natural disasters such as heavy rains that risk supply of our products. These extreme weather events are presumably caused by climate change.

As such, taking appropriate actions on climate change is an extremely important issue for us not only to protect the global environment, but also to assure the supply of our products that is directly associated with sustainability of the business.

Our total energy consumption in 2018 increased by 1.2% from the previous year due to steady growth of our business. By our efforts to increase the use of renewable, however, CO₂ emissions in 2018 decreased 6.8% compared to 2017.

We will continue making utmost efforts on reduction of greenhouse gas emissions through strengthening overall energy management, upgrading equipment, improving production processes and introducing more environmentally friendly technologies such as continuous flow manufacturing processes.

Energy consumption within the organization

	2017(Restated)	2018	Changes in %
Direct Energy (GJ)			
Town Gas	208,190.59	218,645.10	5.0%
LP Gas	3,125.70	3,632.82	16.2%
LNG	285,792.45	285,579.91	-0.1%
Natural gas	0.00	3,766.04	
Residual Fuel Oil	43,085.07	41,792.83	-3.0%
Gas/Diesel Oil	5,847.81	7,071.47	20.9%
Kerosene	22.94	2.57	-88.8%
Gasoline	1,612.44	2,004.20	24.3%
Waste Oil	32,258.77	28,973.87	-10.2%
Total Direct Energy	579,935.77	591,468.81	2.0%
Indirect Energy (GJ)			
Electricity purchased	800,177.89	790,939.37	-1.2%
Steam purchased	28,648.67	28,885.32	0.8%
Total Indirect Energy	828,826.56	819,824.69	-1.1%
Renewable Energy (GJ)			
Biomass incinerated	55,116.64	32,860.39	-40.4%
Electricity purchased	74,460.10	112,695.17	51.3%
Total Renewable Energy	129,576.74	145,555.56	12.3%
Total Energy	1,538,339.07	1,556,849.06	1.2%

Energy intensity

	2017(Restated)	2018
Energy intensity (GJ per tonne production)	10.49	9.73

Greenhouse gas (GHG) emissions (scope 1 + 2)

	2017(Restated)	2018	Changes in %
GHG emissions (tonnes)			
Scope 1	31,483.70	31,877.47	1.3%
Scope 2	41,495.56	36,118.40	-13.0%
Total (Scope 1 + 2)	72,979.26	67,995.87	-6.8%

GHG emissions intensity (scope 1 + 2)

	2017(Restated)	2018	Changes in %
GHG emissions (tonne)per tonne production			
Scope 1	0.28	0.23	-20.2%
Scope 2	0.21	0.20	-7.2%
Total (Scope 1 + 2)	0.50	0.43	-14.6%

Other indirect greenhouse gas (GHG) emissions (scope 3)

	CO ₂ emission (MT)	Ratio to GHG total Ratio to the gross volumes
cat 1 Purchased goods and services	NA	
cat 2 Capital goods	12,317.76	0.7%
cat 3 Fuel- and-energy-related activities	NA	
cat 4 Upstream transportation and distribution	1,767,122.00	95.1%
cat 5 Waste generated in operations	1,932.29	0.1%
cat 6 Business travel	3,082.00	0.2%
cat 7 Employee commuting	6,172.00	0.3%
cat 8 Upstream leased assets	NA	
cat 9 Downstream transportation and distribution	NA	
cat 10 Processing of sold products	NA	
cat 11 Use of sold products	NA	
cat 12 End-of-life treatment of sold products	NA	
cat 13 Downstream leased assets	NA	
cat 14 Franchises	NA	
cat 15 Investments	NA	NA
Scope 3	1,790,626.05	96.3%
Scope 1	31,877.47	1.7%
Scope 2	36,118.40	1.9%
GHG total amount	1,858,621.92	

Water and Effluents

Currently availability of water does not directly affect our business operations, as we have good access to sufficient amount and quality of water. However, we have production facilities in 13 countries, and some are located in areas where demand of water is expected to increase in the future. In addition, as securing a sufficient amount and quality of water is very important to for our operations, shortage of water and change or deterioration of water quality directly affect our production output and quality.

We have reduced our total water withdrawal by 2.1% from the previous year by our efforts, such as the reduction of water consumption through recycling of water used in manufacturing processes and reviewing cleaning processes. We will continue making our efforts to reduce water consumption.

It is important to understand the specific condition and requirements of water use at each site and make efforts for the proper use. Through a periodical survey on regulatory trends and risk analysis, we strive to grasp water risks at each site and the associated control measures.

Total Water Withdrawal by Source

water withdrawal (m ³)	2017 (Restated)	2018
Third Party		
Municipal Water	615,961.02	627,015.78
Industrial Water	481,565.00	457,224.00
Ground Water	2,117,269.48	2,065,243.14
Total Water Withdrawal	3,214,795.50	3,149,482.92

Water Discharge by Destination

water discharge (m ³)	2017 (Restated)	2018
Surface Water		
Surface Water	2,665,791.94	2,600,367.40
Ground Water		
Ground Water	0.00	863.00
Third Party		
Third Party	403,348.54	404,222.48
Total Water Discharge	3,069,140.48	3,005,452.88

Water Intensity

	2017	2018
Water intensity (m ³ per tonne production)	10.49	9.73

Waste Management

In 2018, 1.7% of the waste generated is finally landfilled, but there are countries and areas where the manifest system is not in place, and processing information on waste at outsourced companies is not available or is unclear for some cases. In the future, we will aim for collection of more accurate data by selecting contractors that can disclose processing information.

We will work to reduce the amount of generated waste through appropriate sorting and recycling practices, and related education to our employees.

Waste by type and disposal method

Hazardous waste (tonnes)	2018
Recycling	1,152.06
Incineration	85.14
Landfill	32.29
Total hazardous waste	1,397.74

Non-hazardous waste (tonnes)	2018
Recycling	21,099.03
Incineration	6,504.55
Landfill	481.93
Total non-hazardous waste	28,104.15

Environmental Compliance

The Takasago group considers compliance as one of its top priority management issues. In 2018, discharged water quality slightly exceeded the local effluent standards at two production sites. We have been working hard to improve our discharged water quality and comply with the standards.

Occupational Health & Safety (OHS)

Based on the declaration that "Safety is our First Priority", the Takasago group recognizes operational health and safety as our top priority in the entire operations for the sustainable growth.

OHS Communications

Since the fire accident in 2013, Takasago Japan has been conducting an official meeting called Safety Committee on a monthly basis, in which EHS representatives of our production sites, concerned departments' directors, and general managers participate. The objective of the meeting is to address key issues and any concerns reported in a regular site audit and others and monitor the progress of improvement actions. We ensure all issues are put into PDCA cycle and additional preventive measures are implemented across the group.

In addition, both obligatory and voluntary occupational safety and health meetings are regularly conducted at each production site.

We have been conducting an OHS inspection at our production sites out of Japan too. We make an inspection to see if situations and practices at the sites conform to our EHS minimum requirements and share and discuss issues and concerns to resolve with colleagues.

In Japan, we have been conducting risk prediction activities. Through the activities, we are developing capability of risk prediction in our employees. This helps prevent injuries and incidents.



Regular Site Audit

Development of OHS Management System

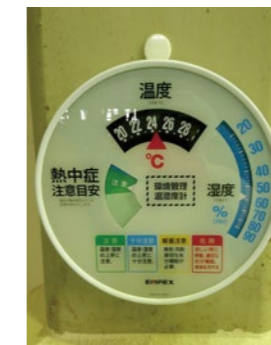
As the transition from OHSAS 18001 to ISO45001 started in 2018, we have been trying to acquire the ISO 45001 certification globally by 2020. Acquiring this global standard will help strengthen and globally standardize our operational health and safety management. We expect that injuries and illnesses as well as incidents at workplaces will be prevented or significantly reduced.

Hazard Identification, Risk Assessment, and Incident Investigation

As one of the recent actions in summer, we took up an action on heatstroke prevention. EHS Headquarters and staff members at a production site of Takasago Japan collaboratively measured WBGT (WBGT; Wet Bulb Globe Temperature) value and identified higher risk area in the site. They recommended and advised how to prevent heatstroke at the area. Additionally, as part of EHS Headquarters activities, EHS office personnel has been visiting production sites in other countries to conduct an EHS inspection to verify that the work environment properly meets or exceeds the Minimum EHS Requirements. We also focus on odor control derived from manufacturing at a site to prevent such environmental pollution.



WBGT Meter



Heat Stroke Meter

Work-Related Injury

Fatal occupational injuries were not occurred at all the sites globally. 18 operators in Japan, 26 in Europe, 10 in Asia, and 17 in Americas, however, were wounded during manufacturing in 2018. We have to make extra efforts to reduce such work-related injuries.

Environmental Incidents

Neither at all the sites in Japan, nor all the sites in Europe, Asia, and Americas, any outflow incident beyond the site occurred. However, some slight leakage due to damaged and/or turned-over containers occurred. We continue making extra efforts to reduce such incidents at work.

Takasago Safety Day 2018

We designated April 10th as Takasago Safety Day. This is the day to reflect on the 2013 fire accident, and to pledge, “Never to let such an accident happen again”.

On April 10th, 2018, Takasago Safety Day was held with various safety trainings at all the group companies in and out of Japan to develop safety awareness and improve knowledge about safety. Each one of us reaffirmed our commitment towards safety.

Our President and CEO delivered a speech at Iwata Factory in Japan. The video message was sent for the group companies out of Japan.



The speech is as below. Taking safety measures is an endless activity. We position safety as an extremely important theme in our new medium-term business plan that began in April, 2018. “Safety operation” is the basis of all our business activities. We all bear in mind that we cannot achieve sustainable growth without our strong commitment to “Safety First”.

Headquarters (Tokyo, Japan)

Address of EHS Executive and standard first aid training course.



New Jersey, USA (Office)

Firefighting drill using fire extinguisher, presented on fire prevention, game learning of safety and hazardous, hands-on learning of distracted driving



Mexico

Education of prevention of ignition and flammable materials, firefighting drill using fire extinguisher



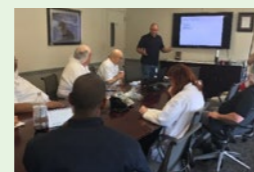
Hiratsuka Factory (Kanagawa, Japan)

Address of GM of Production and Procurement division, education of fire protection and disaster prevention in hazardous facilities, inspection for ignition source in work place, firefighting training (collaborated with TIC R&D)



New Jersey, USA (Flavor Factory)

Education of prevention of ignition and flammable materials, demonstration of ignition, suitable handling of personal protective equipment, discussion of improving compliance and safety



India

Firefighting drill using fire extinguisher, Education of risk of chemical explosion, contest of safety slogan by employee



Iwata Factory (Shizuoka, Japan)

Education of prevention of electric related incident by an internal lecturer, checking and cleaning of switchboard in each work place, checking and cleaning of 100 V outlet in office, communication test of MCA and satellite phone



New York, USA (Fragrance Factory)

Presented active shooter safety for the work place, firefighting drill using fire extinguisher, first aid kits, AED's, eye washes, safety quiz



Brazil

Demonstration and education of mechanism of ignition, prevention of ignition, risk of chemical and chemical risk assessment



Kashima Factory (Ibaraki, Japan)

Inspection for ignition source in workplace, communication test of MCA, education of handling of oxygen breathing apparatus (scope; firefighting team and engineering team of self-firefighting team), internal firefighting training



Takasago Spice Hadano Factory (Kanagawa, Japan)

Firefighting drill on the assumption of fire at the certain place, forklift training (classroom and hands-on) by an external lecturer for all employee



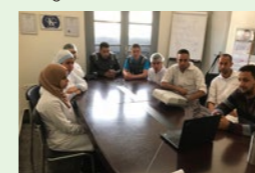
Guangzhou, China

Discussion of problems from safety patrol, firefighting drill, sightseeing to local fire bureau



Morocco

Education and drill of handling fire extinguisher



R&D (Kanagawa, Japan)

Safety inspection in all work place (checking for storage conditions of hazardous goods, check and replacement of safety equipment, sorting and setting-in-order in living room and warehouse, communication test of each section in R&D, firefighting training (collaborated with TIC Hiratsuka Factory)



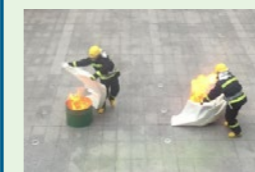
Takasago Chemical Kakegawa Factory (Shizuoka, Japan)

Training of suitable wearing of personal protective equipment, discharging water by firefighting team and handling of respirator



Shanghai, China

Evacuation, firefighting and rescue drill for fresh person based on procedure



Madagascar

Education and drill of handling fire extinguisher, first aid training



Takasago West Japan (Hiroshima, Japan)

Fire prevention training, training of discharging water, lecture of experience of 2013 fire incident



Takasago Coffee Iwata Factory (Shizuoka, Japan)

Firefighting drill on the assumption of fire at warehouse, pest control training



Singapore

Fire safety seminar by fire prevention center, fire extinguisher demo, call point demo, firefighting suit, spill kits demo



Germany

Education of ignition on workplace, fire prevention, first aid, personal protective equipment, gas detection and GHS. Firefighting drill, inspection of forklift and charging station



Takasago Food Products (Shizuoka, Japan)

Checking of grounding-point and ignition preventing point, fire prevention training with fire bureau officer



Nankaikako (Wakayama, Japan)

Experience simulated earthquake (intensity 7), firefighting drill, lecture of zero accident campaign



France

Training all employees for using the SDS, remind against risks associated with the handling of chemicals product and use of the protective equipment supplied



Spain

Firefighting drill and safety management system inspection and audit based on SEVESO directive
* SEVESO directive; Requirements to companies adopted after a Seveso disaster. In this directive, companies must take every necessary action, such as establishing safety report, emergency plan, land use plan and monitoring system.



Social

Stakeholder Engagements



Takasago regards shareholders, society, suppliers, customers and employees as our key stakeholders.

Engaging with each stakeholder through dialogue provides us with insights on important issues to them and our company. We also highly value communication with stakeholders for corporate decisions.

Takasago discloses corporate information in a timely and adequate manner to shareholders and investors. As part of our efforts to improve our IR activities, we send *the Newsletter to Shareholders* twice a year while disclosing related documents and press releases on the IR site in our website to expand the investor community and enable shareholders and investors to deepen their understanding about our business activities.

We hold financial result briefings twice a year (May and November), and our president and officers in charge directly communicate with the investors and analysts. The details of the briefings are also disclosed on our IR site. Furthermore, Investor and Public Relations Department takes charge in handling reporting related to IR and visits to investors.



Shareholders and Investors



We strive to offer an appropriate return of profits to shareholders by realizing sustainable growth through sound and transparent corporate management. At the same time, we work hard to further strengthen communication with shareholders and investors both in and outside Japan.

Suppliers

Our Supply Chain



Our supply chain and procurement model at a glance

Takasago values sustainability through its businesses. It is therefore essential to source raw materials for each of its business units in a responsible way, in full alignment with group values and both clients' and civil society's aspirations.

Takasago is using about 14,000 different raw materials sourced from more than 1,000 suppliers all over the world. About 5,000 of the raw materials are natural ingredients coming from natural sources such as plants, fruits, vegetables, roots, leaves and flowers. On the other hand, about 9,000 of the raw materials are synthetics made by sophisticated chemical technologies. Their main starting materials can be of natural origin such as wood or synthetic origin such as natural gas or naphtha. They can not only provide a unique sensory profile which does not exist in nature, but also replace natural ingredients to decrease usage of protected ingredients such as musk, ambergris and so on. For timely supply of high quality raw materials with appropriate prices to our facilities around the world, we are promoting procurement activities using our global network. In order to build fair and trustful relationships with worldwide business partners for continuously sustainable procurement, we have established a Corporate Procurement Policy, Corporate Procurement Guidelines and Takasago Supplier Code of Conduct.

Corporate Procurement Policy

We have established the "Corporate Procurement Policy" in accordance with the "Basic Management Policy" as a guide for implementing local community conservation and global environment protection in our procurement activities.

We practice the following in our procurement activities:

- Pursuing the three elements of quality, cost and stable supply
- Persisting in the observance of all relevant laws, respect for human rights, being fair, dealing impartially and considering preserving the environment
- Valuing a regional culture and building a partnership between the Takasago group and the supplier

Corporate Procurement Guidelines

We have established "Corporate Procurement Guidelines" according to Corporate Procurement Policy. To ensure appropriate business procedures that comply with responsible sourcing, these guidelines indicate important items, such as "Compliance", "Fair trade", "Anti-corruption", "Human rights" and "Environmental protection", all of which are important factors in selecting suppliers. These guidelines make our tasks and our responsibilities clear, so all procurement staff, including persons in charge of local purchasing can implement corporate policies and ensure responsible procurement activities.

To confirm the implementation of these principles in day-to-day operations by our staffs, we regularly conduct workshops on Corporate Procurement Guidelines so that all of procurement staffs shall understand and follow the corporate initiatives appropriately.

Takasago Supplier Code of Conduct

We respect business partners who value environmental and social responsibility to maintain a high level of trust from society. We have established the Takasago Supplier Code of Conduct as followings:

"As a company that values the global environment & aspires to gain a high level of trust from society, Takasago holds sustainability as one of the key cornerstones of our business. Takasago therefore prioritizes & values suppliers that place importance on global & social responsibilities (e.g. sustainability, compliance with laws, regulations & social norms, protection of human rights, assuring health & safety & fair trade)."

It confirms the understanding of our policy among business partners. We declare it in our questionnaire and confirm their full understanding when starting transactions with them.

The Takasago Code of Conduct is a summarized statement therefore it is followed by our Responsible Sourcing Policy which indicates our ambition, objectives and commitment in detail.

Responsible Sourcing

In June 2017, Takasago signed the UN Global Compact (UNGC) and in accordance with “UN Global Compact’s ten principles in the areas of human rights, labor, the environment and anti-corruption” stipulated there, we continue our efforts to realize these 10 principles. We are also striving for sustainable procurement activities as much as possible while focusing on compliance with national laws, respect for human rights, environmental conservation, fair business practices, involvement and development in local communities and so on.

We have been continuously reviewing our Responsible Sourcing Policy in accordance with ISO20400: sustainable procurement guidance. Based on the policy we will confirm the potential impact of our procurement activities in various fields of “human rights, labor, environment, anticorruption”. The Responsible Sourcing Policy embodies the concept of the Supplier Code of Conduct. If the possibility of negative influence is confirmed, we will promptly plan for improvement and cooperate with suppliers and other stakeholders to implement it.

Supplier Relationship Management

In the Takasago group, we conduct international procurement activities utilizing the global procurement organization with the headquarters procurement department at the center. Through global procurement activities we continue to contribute not only to our customers but also to all stakeholders by reliable supply of high-quality, safe and secure products. For this purpose, we utilize dialogue with suppliers, a supplier questionnaire and RFQ (Request For Quotation) to conduct supplier relationship management as stated below:

- Build strong, mutually beneficial and transparent partnerships with suppliers
- Maintain and strengthen a system that can stably and reliably procure high quality raw materials
- Mutual understanding for sharing goals through dialogue and RFQ with suppliers
- Thorough implementation of the “Takasago Supplier Code of Conduct” which emphasizes corporate social responsibility such as sustainability and respect for basic human rights by periodic supplier surveys utilizing questionnaires
- Check for no forced labor or child labor by periodic supplier questionnaires

*According to the supplier questionnaire results 2018, we confirmed all our business partners acknowledged as Takasago global suppliers meet the social and environmental standards.

Collaboration with 3rd Party Organizations

In order to pursue responsible sourcing, the Takasago group has joined social organizations promoting sustainable and ethical sourcing to improve procurement, taking into consideration environmental conservation. We have become a member of RSPO (Roundtable on Sustainable Palm Oil) *1, RCPA (Renewable Citrus Products Association) *2 and are working on procurement of sustainable natural materials.

In early 2016, we joined Sedex*3 (AB membership), which enables us to assess our suppliers in the areas of Work Environment, Health & Safety, Environmental Management and Ethical Business Practice. By using the world’s largest collaborative platform for sharing supply chain data globally, along with a separate Supplier Questionnaire, we ensure an ethical supply chain. As of fiscal 2018, we have established relationships on Sedex with around 160 major suppliers overseas and in Japan. We confirm if a new business partners are Sedex members when starting transactions and encourage them to become a Sedex B member if they are not. We also started to encourage prioritized existing suppliers to join Sedex for sustainable relationship if they are not.

*1 RSPO: A social organization trying to transform the palm oil industry into a sustainable industry with fewer burdens on the environment.
*2 RCPA: A group of companies interested in developing sustainable citrus products.
*3 Sedex: An online platform for sharing information on ethical and responsible practices.

Global Procurement Team

Teamwork is one of the important values of the Takasago group.

We have teamed up for global procurement for more than 30 years and the team currently contains delegates from 11 overseas production sites.

As we handle various raw materials from all over the world, mostly with different cultural backgrounds, Takasago presence at origin is one of the major keys to ensure stable supply.

Each affiliate, therefore, shall be responsible for supplier relationship management as an international procurement office for the Takasago group.

Based on the concept of standardization, including harmonization of raw materials, we continue to explore every possible opportunity for total optimization of raw material management.

Global RFQ (Request For Quotation) is one example of such activities.

When it is necessary to manage the availability of raw materials due to global volume constraints, the Takasago team globally shares inventory within the group.

In addition to a regular annual meeting at headquarters, our global procurement team schedules various workshops, regional meetings, visits and training via a matrix-like structure by region, ingredient category or business type under corporate initiatives.



Training Session

Global procurement team members shall have an opportunity to attend the training session at headquarters in Japan.

We have been conducting it twice a year, aiming their better understanding of corporate medium-term management plan, corporate procurement policy and guidelines as well as intergroup networking through face-to-face meetings for teamwork.

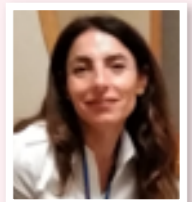
VOICE

Sylvie Spencer in Takasago Europe Perfumery Laboratory S.A.R.L. (France)



“Meeting the people in the training and learning about their way of working was very much appreciated – it will surely ease our communication to understand and support each other. Intense week in terms of training but so interesting, we have learned a lot!”

Gülser Akdeniz in Takasago Europe G.m.b.H. (Germany)



“For persons like me, who has started to work almost 2.5 years ago, great chance to get a huge information input in a very short time. Received interesting information about the challenges/missions of our colleagues from the other affiliates. Teamwork and openness is always important to work in a global acting company – good possibility to realize it during the training.”

To further enhance our sustainable procurement, we review training programs with trainees’ and trainers’ feedbacks considering Takasago’s direction with the latest social and environmental requirement. We will start training for all persons associated with procurement activities including staff from other departments.

Sustainability: evolution of our sourcing

TAKASOURCE is a tool validated by ECOCERT Expert Consulting developed to assess the natural extracts we purchase. Working with a cross-functional team from purchasing and sustainability and an external expert, we assess the combination of raw material-supplier each time since the same material may have different countries of origin depending on the supplier. For each source, we review the three pillars of sustainability: environmental, economic and social aspects from the cultivation to transformation of the material.

- Social: Satisfy human needs and meet the objectives of social equity, by favoring the participation of all social groups working on health, housing, consumption, education and cultural topics.
- Environmental: Conserve, improve and value the environment and natural resources in the long term, by maintaining the ecological balance, by reducing the risks and by reducing the environmental impacts.
- Economic: Ensure the distribution of wealth and profits, incorporate the social and environmental costs to the price of materials and seek to develop the local economic network.

A natural material is graded based on the scoring criteria, and we conduct a final assessment ranked by a priority of action. By the end of 2018 we had assessed more than 80% of our natural materials by volume and value. Our most important suppliers have been informed of our approach and asked to comment on our assessment.

This process has enabled us to identify the highest risk naturals in our product portfolio, and we work actively on enhancing this priority list of naturals to reduce the risk profile, while continuously reviewing outstanding and new materials.

In 2019 another new challenge was started . We are expanding the assessment to renewably sourced raw materials that are not naturals: pine, palm oil and soy derivatives which are used for fragrance. The objective is to achieve “zero deforestation” in our value chain mainly through RSPO certification for palm oil derivatives and Forest Stewardship Council (FSC) and

Programme for the Endorsement of Forest Certification Schemes (PEFC) certifications and others for pine-based materials. This is a significant challenge, and the first meetings with key suppliers have been organized. One expected outcome of this initiative is receiving the RSPO certification according to the mass balance (MB) supply chain model for several compounding facilities.

Recycled & Renewable Materials and Packages

Because of the characteristics of our production we cannot use reclaimed materials. Considering the procurement of sustainable natural materials, we are trying to use recycled ingredients made from fallen trees, sawdust, cut-branches materials, waste materials instead of those traditionally coming from logged trees. It will be one key activity of the TaSuKI project in the future.

For the Takasago group*4, the ratio of renewable raw materials*5 we used in 2018 is about 47% of our total. We started maintaining our ingredients and calculate GHG gas emission to significantly improve this figure and prepare for the future depletion of petroleum.

We do not use recycled bottles and packages for our finished products for safety, regulatory and cost reasons. Basically, recycled pallets are only used for some storage and oneway use for safety reason.

We use recycled materials (waste paper and steel materials) for cardboard packaging and steel drums, and the ratio of waste paper used in cardboard varies according to the country. We are also reusing intermediate bulk containers (IBC), steel drums and pallets as far as there is no potential safety risk. Packaging materials unfit for use are collected, sorted and recycled by authorized recycle contractors.

*4: All Japan subsidiaries and affiliates in global

*5: Renewable raw material: A renewable resource is a natural resource which can replenish itself to overcome human consumption through biological reproduction, naturally recurring processes and/or other positive actions. Based on the definition of GRI Standard Japanese version, we compiled the ratio of renewable raw material usage.

“TaSuKI” Program Update

1. Overall

Since last year we have further evolved our TaSuKI program governance to ensure that TaSuKI addresses all of our clients’ and civil society’s key aspirations in a clear, comprehensive and effective way (see diagram below). Therefore, for the most important ingredients sourced by Takasago, we will combine related activities according to the four pillars described below.

TaSuKI Originals

We implement and manage responsible sourcing strategies along the value chain to secure sustainable supply.

TaSuKI Care

We support local suppliers, producers, their communities and reduce impact on the environment.

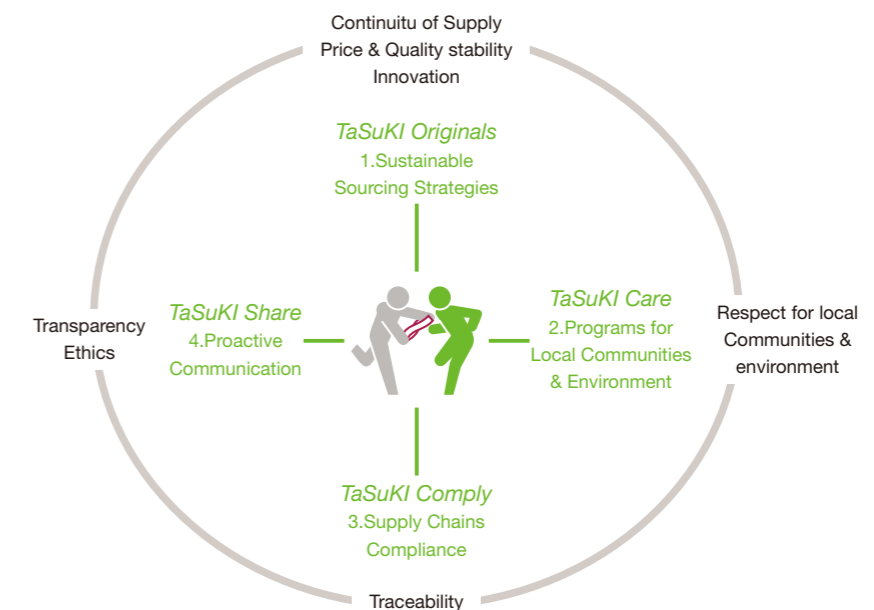
TaSuKI Comply

We commit towards responsible sourcing compliance.

TaSuKI Share

We are transparent in the way we communicate program’s objectives, strategies, and progress.

TaSuKI, The virtuous circle of responsible sourcing backward integration at Takasago



About its scope:

We have conducted an in-depth analysis of our purchased raw materials portfolio and made an initial list of the most important ingredients we ultimately would like to fully take backward integration approach. Not only for risk mitigation reasons but also providing a distinctive competitive advantage to our creative teams, clients and communities from which we procure materials.

About its strategies:

For each ingredient identified as important, we are currently designing TaSuKI Originals, Care, Comply and Share strategies to address clients and civil

society’s aspirations. This can span from establishing a collection network, building a green field plant to acquiring existing sourcing/manufacturing expertise in its countries of origin.

About its organization :

Takasago has a longstanding individual presence in countries of origin for growing, sourcing and manufacturing natural ingredients. However, we are now in the process of combining all sourcing presence in countries of origin under one “common roof” to leverage synergies, roll out best-in-class sourcing, CSR, traceability, systems-use practices and be prepared for significant TaSuKI scope expansion.

2. Ongoing Projects

While TaSuKI obviously has global reach, we intend to fully leverage our rich heritage of SMEs in extended Asia-Pacific regions and initially prioritize sourcing presence in regions as follows:

Asia-Pacific:

Patchouli Oil from Indonesia

- Strategic sourcing of patchouli oil – TaSuKI Originals

Indonesia with its rich biodiversity is known to be a treasure trove for the flavors and fragrance industry. Among the many essential oils and spices originating from the archipelago is found the iconic patchouli oil. Indonesia is by far the largest source of patchouli oil with 90 % of worldwide production.

For instance, Patchouli has been used for incense in Japan for thousands of years, and has sometimes suffered severe shortages. Many companies have attempted to develop a large-scale alternative source or an exact chemical equivalent, but all have struggled. We, at Takasago, with our longstanding sourcing leadership in Asia-Pacific region, pursued another sourcing strategy and ambition. As early as 39 years ago, we decided to settle in Indonesia, in the heart of one of the essential oils producing regions. Close to individual smallholders, we aimed to secure our own supply directly from local farmers and distillers. We established direct sourcing relationships with producers, built a greenfield processing plant with modern technology and research capabilities to develop unique qualities as well as to secure continuity of supply of these high-quality oils for Japanese and other affiliates' markets. We achieved our objective to fully integrate our procurement of the oil along the entire value chain in the country of origin.

- Support to local communities and environment – TaSuKI Share and TaSuKI Care.

As previously mentioned, Since PT Takasago Indonesia (PTTI) was incorporated in 1980 and for decades of local presence, we have deepened our relationship with individual farmers.

This longstanding local presence enabled Takasago to develop unrivaled understanding of local communities' constraints, aspirations, needs and support them with tangible economic, environmental and social impacts:

- PTTI has provided direct and indirect employment to local communities since it was incorporated back in 1980.
- PTTI develops a long-term approach with producers and encourages loyalty and long-term relationships.
- PTTI strives to source regularly, pay at a fair market price, but also often pay a premium over the market price to reward the quality of the oil and loyalty.
- PTTI has very early on been providing training and advice to producers with the objective to:
 - Reduce impact on the environment (pesticides, fertilizers, firewood usage, crop rotation, etc....),
 - Roll out best practices to optimize yields, reduce rejection rates and for producers to optimize their revenues.
- Constant dialogue with small holders to ensure a seamless and superior quality supply of patchouli oil.
- Formal training and reminders of Takasago Suppliers Code of Conduct, particularly relating to the social compliance section.
- Anticipation of trends and volatility mitigation by longer term dialogue and mutual sales / purchase commitment, even when the market is at a dip.



Africa

Vanilla from Madagascar

- Vanilla strategic sourcing - TaSuKI Originals and TaSuKI Care

For years, the vanilla supply chain in Madagascar has faced major ethical, environmental and economic issues.

Unfortunately, as we all know too well, this negative trend has accelerated lately. Therefore, like patchouli, vanilla had been identified long ago as an ingredient for which Takasago needed full backward integration. For this very purpose, 10 years ago Takasago formed a joint venture with Ramanandraibe Export, a well-respected and established Malagasy company specialized in agri-commodities production and transformation.

The purpose of this joint venture is to directly source and upgrade vanilla in Madagascar. For this, we have dedicated buyers and collection stations upcountry in the heart of the vanilla growing regions, as well as a plant in Toamasina, Madagascar to process high quality extracts.

However, we soon realized that being “simply” vertically integrated from sourcing to processing locally like patchouli in Indonesia would unfortunately not suffice to ensure a sustainable supply of high-quality vanilla extracts. Given the social and economic situation in Madagascar, issues are far more complex. Focus on local communities and their environment, infrastructures improvements and scientific expertise, and strategies are a must to make a significant and sustainable turnaround for Madagascar's vanilla to regain the legitimate prestige it had for years.

While planted acreage has increased steadily over the years supported by continuously skyrocketing prices, output and quality is on the opposite deteriorating significantly. Why ?

We carefully analyzed the situation and as we can only support but not resolve governance issues, we decided to focus on local communities, infrastructure and technology, and launched in 2015 our own holistic program:



- Science
 - Medium- to long-term scientific program with the Malagasy regional university, agronomy research institutes and plant biotechnology labs in Europe with the overall objective to improve quality, yields and thus farmers' revenues (genetics, varietal mapping and improvements, pest/disease control, etc....)
 - Largest vanilla plantation in the heart of vanilla producing area in Sava to research, develop, run pilot improvement programs and develop training to roll out best practices to local producers
 - Capability building training to producers
- Support to Local Communities and Their Environment
 - Education: Donation of IT equipment, lab financing and sponsorship of students' PhD on vanilla improvement in Cursa Regional Sava University. The goal is to generate local human resources with enough scientific background to achieve scientific research on vanilla and improve the local environment.
 - Infrastructure: Reconstruction of roads and elementary schools in Maroantsetra
 - Nutrition: Distribution of rice to local cooperative members for immediate relief after hurricane Enawo

- Vanilla CSR compliance and traceability- TaSuKI Comply

Sustainability is in Takasago's very DNA. Therefore, our Malagasy operations in Madagascar are:

- compliant with our Code of Conduct, EHS 100 Plan
- ISO 14001 certified
- Members of Sedex
- certified as FairTrade®

Customers Research & Development



INNOVATION

Our R&D organically integrates three innovations: “concept innovation” to create new value by scientifically analyzing and assessing the human senses; “product innovation” to materialize those concepts into our products; and “process innovation” to establish safe and efficient production technologies with a lower environmental impact. We have 10 R&D centers all over the world, and we bring our unique and effective technologies and products into reality through these three innovations and open innovations with our external partners.

Open Innovation

Sleep Study for Supporting Human Health

Scents and odors are known to have many effects on human physiology and psychology. A variety of research reports have described their effects on humans. Takasago has been working on revealing how scents and odors work on our psychological states with scientifically established physiological measurements. By investigating human responses to the scents and odors, we get evidence that some of them can have influences on humans. With these studies, we aim to contribute to supporting human well-being by developing flavors and fragrances based on human physiological data supporting states of wellness. Recently, in order to meet an increasing variety of needs for scents and odors smoothly, we are now focusing on collaboration with universities. For example, a study on sleep was conducted with Nagaoka University of Technology to investigate the scents that can support a good sleep.

Concept Innovation

“Japan Wood Project” - blooming woods

The concepts such as “nature”, “organic” and “well-being” are the major global trends in the fragrance product market. Natural materials are essential for embodying those concepts. Takasago has been working on capturing and analyzing the scents of unique Japanese flora with our technology AROMASCOPE™ and reconstituting them without losing their natural qualities.

In 2017, we started “Japan Wood Project” focusing on the scents of Japanese trees. Hinoki (*Chamaecyparis obtusa* Endl.) in Kiso area, Hiba (*Thujaopsis dolabrata* Siebold et Zuccarini var. *hondae* Makino) in Aomori area and Sugi (*Cryptomeria japonica*) in Akita area are species endemic to Japan. The forests in those three areas are called “日本三大美林” which means “the most beautiful three forests in Japan”. In this project, our team has established an innovative method for reconstituting natural scents and we are now working on creating our new collection of woody fragrances with a concept “blooming woods.”

The concept expresses a new woody note with freshness and diffusivity. Through visiting these forests and smelling various woods, we found that the freshly cut down wood has unique top notes and strong diffusivity, and it has convinced us that there are new possibilities. Thus, we decided to reconstitute this fresh woody scent.

To analyze the characteristics of this scent, we tried various analytical methods and finally developed the following approach: first to scrape thin layers of dried wood using the Japanese traditional planer called *kanna* just before the analysis and add water, and then capture the headspace volatiles. We found out that adding water to the wood can trigger the release of the fresh top note and its character is close to our target. In addition to analytical data, we utilized gas chromatography-olfactometry (GC-O) to figure out the key characters contributing to the unique scent and finally leading to the reconstitution of natural woody scents.

We are challenging ourselves to represent the new natural feeling through an integration of our innovative analytical technologies and creation expertise.



Sustainable Citrus - Supporting Conservation of Natural Resources

Citrus oil is one of the most important natural raw materials for flavor and fragrance. Recently, however, citrus oil has been facing some difficulties and challenges in its sustainability. Nearly 50 % of processed grapefruit has been produced in the US. However, for two decades, the production volume of grapefruit in Florida, the major grapefruit region, has decreased sharply. In particular after the year 2000 due to the influence of enormous hurricane disasters and some serious diseases primarily including citrus greening. Therefore, high quality grapefruit oil has become limited and the price has increased significantly recently.

In this critical situation, Takasago has promoted backward integration with our citrus processors and suppliers to secure stable procurement of citrus oils. We are also pursuing alternative solution to lessen the excess dependence on citrus oils by using our expertise as a technology-driven flavor company. With our cutting-edge analytical technologies, advanced biosynthesis technologies for new natural aroma ingredients and excellent flavor creation technologies, we have deeply investigated components in citrus oil that contribute to the olfactory note and developed citrus extenders reconstructed with those components to partially replace citrus oils in our formulation. Through our intensive study on grapefruit oil, a sesquiterpene ketone “mustakone” was elucidated as one of the compounds that most contribute to grapefruit’s olfactory characteristics. Currently, we are working on manufacturing natural mustakone and other contributors from natural sources other than citrus oils for the sustainable purposes.

Through such holistic approach, Takasago is always striving to provide our customers with citrus flavors in consistent quality with stable supply.

Product Innovation

Aroma Ingredients from Renewable Resources

As Takasago approaches its centennial in 2020, we are honored to be the leading global Japanese aroma ingredient company. Historically, aroma ingredients are extracted from plant and animal origins, and we have challenges including unreliable supplies and fluctuations in quality due to impacts of Mother Nature. Therefore, we have moved toward production of nature-identical synthetic aroma ingredients to conserve biodiversity by reducing conventional extraction from naturals. We have been focusing more on sustainable and renewable sources of raw materials. Sustainability is a key mindset to our vision. *l*-Menthol is a representative example as we manufacture it from renewable myrcene. We also use renewable resources coupled with our synthetic technology to give birth to our new ingredients such as Biomuguet® and Biocyclamol®. Both are nature-identical, biodegradable and chiral molecules which provide indispensable alternatives to existing synthetic muguet ingredients. Our newest molecule launched with a woody and amber note Dextramber® is just one such ingredient under our CHIRAROMA® platform which utilizes our asymmetric chemistry and epitomizes our commitment to contribute to society through technologies.

Materials Development from Wastes or Unutilized Resources

The active use of wastes or unutilized resources leads to fully utilizing natural resources to the maximum. We believe it is one of the effective actions to provide solutions for the environment. Takasago has identified various kinds of useful materials from previously unutilized resources. They were applied to develop unique flavor and fragrance ingredients using enzyme and fermentation techniques to add high value to our flavors and fragrances. Takasago will continue these actions to reduce its environmental impact.

GREEN CHEMISTRY

Process Innovation

Our R&D and manufacturing activities are oriented to Green Chemistry. Green Chemistry is defined as the design of chemical products and processes that reduce or eliminate the generation of hazardous substances. Twelve principles of Green Chemistry have been proposed, and the scope of green chemistry includes not just pollution by toxic chemicals but energy conservation, waste reduction, and life cycle considerations such as the use of more sustainable or renewable feedstocks.

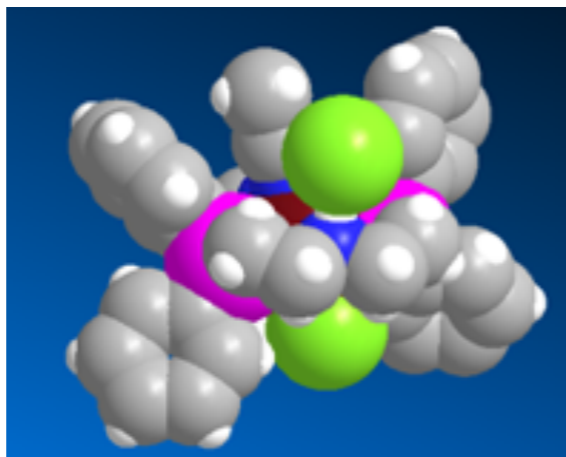
1. Prevent waste
2. Maximize atom economy
3. Design less hazardous chemical syntheses
4. Design safer chemicals and products
5. Use safer solvents and reaction conditions
6. Increase energy efficiency
7. Use renewable feedstocks
8. Avoid chemical derivatives
9. Use catalysts instead of stoichiometric reagents
10. Degradation of Design chemicals and products after use
11. Analyze in real time to prevent pollution
12. Minimize the potential for accidents

Catalysts - Contributing to Reducing Energy Use and Waste

One of our key assets to practice Green Chemistry is catalysts which achieve high selectivity and milder reaction conditions. These catalysts realize manufacturing processes with (1) minimized use of raw materials, (2) reduced amount of waste, (3) reduced energy consumption and (4) the use of safer and non-hazardous reagents. Since our first industrial application of an asymmetric catalyst to the *l*-menthol process in 1983, we have developed a variety of catalysts and applied them to our manufacturing processes.

We developed catalysts for ester reduction, which circumvents waste associated with conventional methods. Our continuous efforts led to an improved catalyst which enabled milder reaction conditions (lower hydrogen pressure, lower temperature, etc.) and thus expanded substrate scope. It is expected that the

newly developed catalyst should contribute to reduced use of hydrogen and energy. We will continue to make environmentally benign processes through catalysts.



Continuous Flow Processing - Reducing Environmental Impact

With the experience of continuous flow operations implemented in the *l*-Menthol production process, we understand the benefits of continuous flow processing. Thanks to recent progresses in this field, we are intensively expanding our capability toward continuous flow, which is now recognized as an indispensable tool to help achieve UN Sustainable Development Goals (SDGs). There are many advantages in adopting continuous flow rather than batch processing including:

- Easier temperature control
- Reduced risk in handling hazardous chemicals
- Achievement of a more consistent throughput

Typically, smaller equipment than that for batch processing is employed for continuous flow, which enables easier temperature control. A noteworthy achievement in this regard is the successful implementation of CSTR train to effect reduction using lithium aluminum hydride (LAH). The CSTR system maximizes the usefulness of the most versatile hydride reagent while suppressing its inherited disadvantages which frequently cause difficulties in batch processing. In our efforts to expand our continuous flow capability, we are confident that continuous flow technology will contribute to reducing impact on the environment, and we are putting “continuous” efforts into this field.



Natural Aroma Ingredients Developed by White Biotechnology

As a leader in asymmetric catalyst technology, many of our ingredients are manufactured under the principles of green chemistry. By incorporating the principles into our manufacturing processes, environmental and economic benefits have been established in use of renewable resources, biodegradability, yield improvement, more energy efficiency, reduction of waste generation, and improvement in safety and productivity. Many raw materials are derived from renewable resources and by-products which would otherwise become waste materials. As a company that started its business in Japan, Takasago has the heritage based on Japanese culture for reducing waste and recycling.

White biotechnology is another driver in green chemistry. This uses enzyme or microorganism biocatalysts, which fulfils many key criteria of green chemistry and contributes to SDGs. Increasing demand for natural flavor also drives new R&D using biocatalyst. Asymmetric synthesis of optically active aroma ingredients is our proprietary technology known as CHIRAROMA®. In complement with Takasago organic synthetic technology, biocatalysts also allow enantioselective bio-transformation.

Takasago Food Products Co., Ltd., and US-based Centre Ingredient Technology, Inc. (CIT), which joined our group in 2016 specializing in production by bioprocess, are becoming leading manufacturing hubs for our natural aroma ingredients. CIT is a high-tech production facility which uses fed-batch cultivation with accurate cultivation control and monitoring, downstream processes with consideration of

production safety and recovery by thin film distillation. Our key natural products manufactured at CIT include gamma-decalactone, gamma-octalactone, gamma-nonalactone, phenylethyl alcohol, hexanal and other specialties.

Takasago Chemical Corporation Accelerates Development of Continuous Production Facility “iFactory®”

Takasago Chemical Corporation, an affiliated company of Takasago Group, is leading a joint development program as part of a consortium comprising eight firms and one institute.

Dubbed “iFactory®”, this program will bring about continuous production of pharmaceutical ingredients and highly functional chemical products.

Its purpose is to help build an energy-efficient economy and society while contributing to enhanced industrial competitiveness.

It was adopted in 2018 to be among one of the programs for innovating the strategic energy conservation technologies put forward by the New Energy and Industrial Technology Development Organization (NEDO).



Quality Assurance

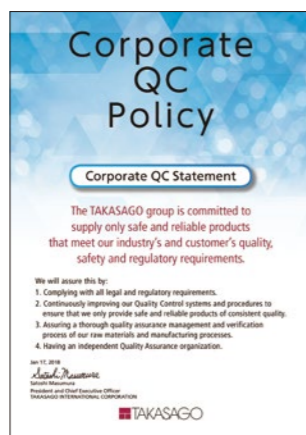
Takasago is committed to working as a valuable partner with our customers to meet all their product quality and safety needs and requirements.

Quality Assurance Organization

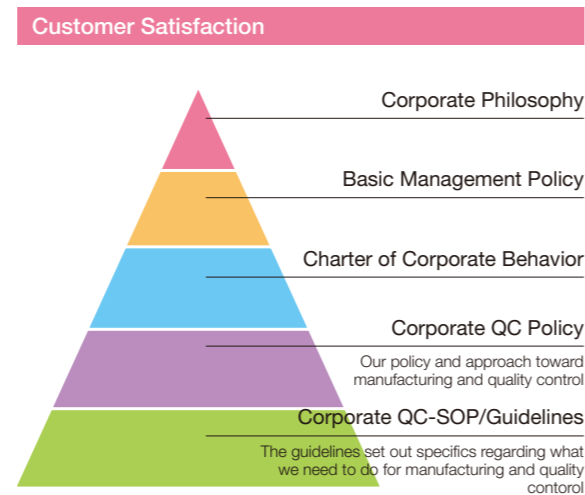
The mission of Corporate Quality Assurance Headquarters (QAHQ) is to ensure that Takasago supplies safe, wholesome and reliable fragrances, flavors, aroma ingredients, and fine chemicals that comply with safety and regulatory requirements of governing bodies, customers and/or trade associations. In addition, Takasago's QAHQ makes sure that Takasago consistently delivers quality products and services that meet the highest quality and product safety standards. QAHQ is an independent organization within Takasago and consists of quality assurance departments across the globe operating under the "One Takasago Quality Assurance Concept". This organization also includes global QC centers as well as global safety and regulatory affairs centers working closely with the local affiliates. These centers are also responsible for the development and implementation of our global policies and guidelines under our globally standardized business process. With this, Takasago is able to provide the highest quality products to meet or exceed all of our customers' expectations worldwide.

QC Policy, SOPs and Guidelines

Takasago's Corporate QC Policy was developed based on our Corporate Philosophy, Basic Management Policy and the Charter of Corporate Behavior and Code of Conduct. This enables us to have a globally consistent quality mindset and systems that not only meet our customer's expectations but also ensure appropriate and timely improvements. In line with the Corporate QC Policy, global QC Standardized Operating



Procedures (SOPs) and guidelines have been established to standardize detailed QC procedures across all business units and affiliates. These guidelines are also incorporated in the local quality management procedures and practices ensuring global alignment of our QC management.



Global Meeting

Various global meetings of the quality division are held on a regular basis. The main objective is to ensure that Takasago continues to deliver products of the highest quality. The meetings are designed to update all the quality divisions on the latest regulations, global policies and guidelines and to discuss any relevant issues or concerns on a timely basis. This activity ensures that Takasago provides the same level of quality and service for our customers globally. QC Centers, for instance, coordinate quarterly teleconferences and semi-annual meetings with all key QC leadership from each facility to exchange information, leverage and share best practices, set and measure KPI's and to keep the teams aligned and informed.



Training Programs

To further enhance the highest levels of quality and service, all Takasago Flavor and Fragrance affiliate Quality Control teams have participated in local and global training sessions provided by both the Global QC Centers. The Global QC Centers are the headquarters based technical resource groups that partner with customers and affiliates to provide support and trainings for QC teams at all Takasago affiliates to build globally aligned QC systems. Global quality harmonization is a key element of training in order to assure that our products consistently meet or exceed all requirements. The technical supervisors of the Global QC Centers coordinate the trainings. Takasago Flavor affiliates produce regionally distinct flavor products. The recent Flavor QC trainings, including an organoleptic training, and sessions on gas chromatography methodologies, maintenance procedure, technical laboratory best practices and quality systems, are designed to provide the same high-quality services to all customers in the world. These trainings are also responded to local needs to improve/ or advance in specific analytical areas. Our proactive activities will help align and streamline QC best practices, and in turn driving procedure efficiency improvements, resulting in less waste and reduced safety risks. Additionally, we provide proficiency testing globally, based on ISO/IEC17025 schemes to which Takasago has been accredited. This helps confirm and standardize QC testing skills of the QC staff members and maintain them at the highest level as well as motivates the members.

As for Takasago Fragrance affiliates, the representatives of the QC teams attended an olfactive intensive training at the Fragrance QC center. The training consisted of smelling natural raw ingredients and finished products, in order to understand their complex nature and characteristics. The training also included discussion about defining expectation levels in terms of harmonizing raw material and finished product qualities. Those attendees who were validated as Technical Referent now support and teach daily olfactive training at each site and are also working as sensory contact.

All training results are shared with global and local managements to assure that the lessons and skills learned are effectively reflected and utilized as part of all local QC teams' daily activities and continuous improvement plans. This is a crucial part of Takasago's efforts to continuously supply the highest quality products to our customers at anytime and anywhere all over the world. These global trainings contribute not only to the quality alignment of Takasago products, but also serve to improve teamwork between all the QC teams as "One TAKASAGO."

Compliance

It is Takasago's global policy to comply with the latest regulations and/or legislations. Takasago fully supports the objective of the European Regulation on Registration, Authorization and Restrictions of Chemicals (REACH) to further improve the safe and sustainable use of chemicals and the quality of life of all citizens in Europe and the environment. 2018 was a key milestone year for REACH. Takasago took an active role in its implementation and registered all the relevant substances by the deadlines. REACH is a continuous process and we have been ready to work with the European Chemical Agency (ECHA) and the competent authorities over the next years to generate any required additional data that are needed to assess the safe and sustainable use of the chemicals we registered. Takasago monitored in 2018 all the other chemical control regulations around the world with a special focus on South Korea's K-REACH and Turkey REACH.

Our Global Safety and Regulatory Affairs Centers continuously monitor everchanging in global regulations, customer requirements, standards and guidelines set by trade organizations such as FEMA, IFRA, RIFM, IOFI, ACI, and PCPC. Information is shared promptly with each affiliate around the world, guaranteeing that Takasago provides safe and reliable products all over the world in a consistent manner.

Certifications

Takasago promotes the acquisition of management system certifications such as ISO 9001, FSSC 22000/ ISO 22000, GFSI Scheme and other internationally recognized quality and safety standards that are

appropriate for products we manufacture. This is part of our global initiatives that includes the group companies in and out of Japan. Gaining these standards helps us promote better quality and service, as well as ensure global standardization.

On-site Audit

To further strengthen the group's quality management, global QC centers routinely conduct on-site audits of all manufacturing sites to assure their systems are consistently improving and meeting or exceeding all prescribed requirements and standards, and that they are aligned with Takasago's business plan, objectives and quality control policy.

Customer Health and Safety

Takasago develops and manufactures a wide range of products across four business pillars: Fragrances, Flavors, Aroma Ingredients, and Fine Chemicals. As an integral part of the creation and manufacturing processes, Takasago continually evaluates all products for their health and safety compliance. This approach is applied from the research and development stage up to the manufacturing stage of our products. During the reporting period, Takasago has not identified any non-compliance with regulations or industry-led voluntary codes.

Marketing and Labeling

Takasago develops and manufactures Fragrances, Flavors, Aroma Ingredients and Fine Chemicals. All of Takasago's sales are made through business-to-business channels. None of the products are sold directly to consumers. Our Fragrances and Flavors are sold to companies supplying consumer goods, who incorporate them into their products that are sold to the general public. Our Aroma Ingredients are sold to other Flavor and Fragrance companies for use in the creation and manufacture of their own compounds. Takasago Fine Chemicals are generally used as intermediates for the manufacturing of pharmaceuticals and of chemicals. When supplying our products to our customers, Takasago provides product information as required by regulations and/or the customers. This typically includes one or more of the following:

Sourcing of the raw materials used in the manufacture

of our products

- Composition of our products (based on disclosure requirements)
- Safety data sheets (which highlight components that may have a health or environmental impact)
- Information on the safe use of our products

Such information is provided for all products manufactured by Takasago. During the reporting period, Takasago has not identified any incident of non-compliance concerning product information and labeling.

Employees



Employment Situation

Takasago has its workforce in 27 countries and regions around the world with a variety of contracts and types of work. In 2018, 44% of employees is covered by collective bargaining agreements.

Employees including temporary staff

Region	Employees	Male	Female	%Male	%Female
Japan	1,747	1,361	386	78%	22%
Asia Pacific	734	373	361	51%	49%
Europe	711	406	305	57%	43%
Americas	664	377	287	57%	43%
Total	3,856	2,517	1,339	65%	35%

Permanent employees by age group

Region	<30		30-50		>50		Total
	Male	Female	Male	Female	Male	Female	
Japan	229	60	821	235	301	73	1,719
Asia Pacific	69	69	277	244	57	28	744
Europe	63	57	229	179	101	55	684
Americas	25	35	203	112	150	75	600
Total	386	221	1,530	770	609	231	3,747

Human Resource Development

Takasago recognizes that our employees are a critical component for success. The organization supports an environment that empowers and challenges employees to reach their full potential. We focus on combining employee aspirations for career growth, with opportunities to enhance skills, by offering

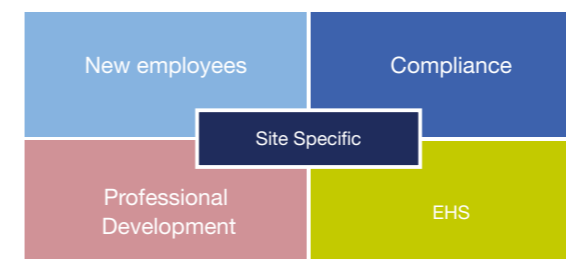
on-the-job and external training opportunities. Trust from customers is earned from providing pioneering technology and exceptional service resulting from solid teamwork of the Takasago group's employees. To maintain this trust, we continually invest in educational, development and enrichment opportunities, resulting in confident employees that embrace challenges, learn from failures as an avenue for growth and successful innovative improvements. Lastly, the organization inspires teamwork by engaging a diversified group of professional competencies, fully equipped to meet a range of challenges. Roles and responsibilities are aligned across affiliates, ensuring skills sets and requirements are comprehensive, utilizing local talents in a global manner. Quoted from Human Resource Development Statement.

*Quoted from Human Resource Development Statement

Training and Education

Takasago engages in ongoing training activities to promote sustainable learnings and obtain positive behavioral results. These include providing comprehensive education on anti-harassment and diversity to ensure employees and managers embrace the importance of cultural differences and inclusion, support human rights, and respect varying beliefs and practices. Safety procedures are prioritized to increase awareness of dangerous activities and hazardous materials with the goal of eliminating injuries and illnesses of all personnel. Anti-corruption, anti-trust and related trainings are also provided across all regions to educate and reinforce a commitment to regulatory excellence and fair competition. The culture within Takasago supports employee growth and development from on-boarding, ongoing training and on-the-job experiences. Building on employee expertise allows Takasago to continuously enhance the products and services provided for the consumer.

Educational Programs



Takasago Educational Program consists of above 5 pillars

Career Development

Takasago is highly committed to career development and career pathing for our employees. We understand what knowledge, skills, personal characteristics and experience are required for an employee to progress in his or her career. We identify talents, support employee development beyond borders, share best practices and knowledge transfer, broaden perspective and network and expand global capabilities. Takasago offers a variety of tools, trainings and possibilities to develop laterally or by promotion and/or by departmental and overseas transfer. Employees actively participate in career path aspirations and provide feedback to modify and enhance individual performance. In collaboration with management, performance metrics are established, development plans created and opportunities to embark on new projects provided, to fully understand the operations of the organization.

Promoting Diversity

Takasago continually strives to create a work environment that welcomes and respects diversity and empowers individuals to realize their full potential. As part of this, we support efforts to increase female managers and foreign national employees while promoting the benefits of diversity and inclusion. Takasago values the contributions of all employees, and believe that the broad perspective provided by a diverse workforce adds enhanced value to all our products and operations on a global basis.

Communication

Takasago Japan has been seeking to develop its own way for team building among the affiliated companies in Japan. A sport event called "Takasago-Cup" is one of our efforts in Japan. The event is held every year, in which employees including those of group companies can participate. The matches of various kinds of sports such as volley ball, basketball, tennis, baseball, and so on are organized and participants enjoy playing matches among sites. Through such opportunities, we aim to build solid team work at each business site and across companies and develop an appropriate work environment.

Society

Community



As the Takasago group states in Basic Management Policy that it respects the global environment and local communities, we consider connecting with the locals is fundamentally important. We have been making various approaches such as holding cultural events, offering educational programs, making donations and supporting community activities for a long time. We will continue these activities and try to be a partner trusted by local communities.

A breakfast with gardeners(Germany)

All our gardeners are people with disabilities. We invited them for a breakfast in December 2018, and we offered them chocolate Santa Clause at the breakfast.



EMEA

Support to ESAT (France)

Takasago France is continuously supporting to those suffering from illness and people with disabilities in various ways. In 2018, they made donations to a specific center known as ESAT ("Etablissement ou Service d'Aide par le travail", or Inclusion through Work), held annual charity dinners to raise funds for cerebral paralysis research and aesthetic care for patients in hospitals (26 different pathologies) since 1992.



World Disability International Day (Spain)

Takasago Spain sponsored a video about eliminating discrimination at work against people with disabilities.



Asia Pacifics



Visit nursing homes for elderlies (Shanghai, China)

Group companies in China region have been keeping a good relationship with residents of the neighborhood and people in the community. Takasago Shanghai makes regular visits to a nursing home for elderlies.



Educational program with schools (Singapore)

Takasago Singapore engaged in an educational program which aims to enrich the learning experiences of students and to inspire them in pursuing STEM (Science, Technology, Engineering and Mathematics)-related career in the future. Both Flavor and Fragrance Division of the company accepted students from schools which runs STEM-ALP (Applied Learning Programs) supported by the Ministry of Education of Singapore.



Takasago Spice

Clean up activity around the factory.



Hiratsuka Factory

Clean up activity and plant tulip bulbs



Takasago West Japan

Awarded for hazardous materials safety



Takasago Food Products

Donated culture soil to an elementary school in Iwata City, located in the central part of Japan.



Takasago Chemical

Clean up on the Coast



Kashima Factory

Joined clean up activity



Iwata Factory

Awarded for the contribution of cleaning up activities

Japan



Providing support to the elderlies (Guangzhou, China)

Takasago International (Guangzhou) (TIG) provides support to the elderlies in the community in their daily life. During Mid-autumn Festival, a Chinese traditional festival, TIG held activities in the community for caring of the elderlies together with local government.

Blood drive with the American Red Cross. (USA, Mexico, Brazil)

For the last several years, Takasago America has partnered with the American Red Cross to sponsor blood drives for employees. Every blood donation saves or sustains the lives of up to three of our neighbors within the community. Takasago Mexico and Brazil have started the same action in their communities. We are working towards the same direction across the Americas.



Holiday giving by the Giving Tree Charities/Adopt A Family Foundation (USA, Mexico, Brazil)

During the holiday season, all group companies in Americas participated in holiday giving actions for needy families organized by the above charitable organizations. Presents and donations were collected and delivered to local families.



Americas



Donations to the Arrastão project(Brazil)

Takasago Brazil made donations to the Arrastão project, a non-profit organization that supports families in poverty in the region. The donation supported the NPO's activities for community development in the areas of education, culture, income generation, housing and quality of life.

Spreading Culture of Fragrance

Koh-do, the Japanese Culture of Incense wood

Japanese incense ceremony: an unforgettable spiritual experience

The incense ceremony of the Japanese Koh-do Society is held twice a year (in spring and autumn), which is a great occasion to discover one of the traditional Japanese cultural arts.

Last April I was offered an opportunity to attend to the spring incense ceremony. It took place in a 122-year-old traditional Japanese house known as Shouen in Tokyo. This house is a beautiful example of the Japanese culture of sustainability with its remarkably well-maintained wooden structure. Full of participants dressed in kimonos and suits, it is a perfect place to immerse yourself in an atmosphere of the authentic Japanese spirit.



The numerous tatami rooms of the house are connected to each other, and sliding panels (*fusuma*) and sliding doors covered with Japanese paper (*shoji*) separate them from the wooden veranda, which offers a relaxing view on the inner garden. Everything contributes to take you to the world several decades ago and the quietness of the place brings a sense of tranquility and deep emotion.

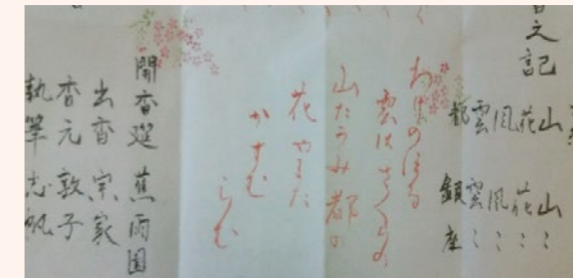


The incense ceremony itself is divided in three parallel sessions which are held three times. Each ceremony is conducted by a ceremony master and assistants who prepare and transmit the incense burners. Another master depicts the ceremony with beautiful Japanese calligraphies that will be offered as awards to the winners of the session.

In one of these sessions, five different incense burners with warmed incense wood chips in them are passed around one after another to the participants who sit on the tatami mat in seiza position. During the smelling time, the master of ceremony recounts a story related to the fragrance of incense wood. The sniffing or "listening to" each fragrance, as it is believed we perceive it not by nose but also by heart, must respect formal manners and etiquette. After the five incense burners are returned to the assistant, a sixth one is

passed around and participants should guess to which of the five incenses it corresponds, and write their answer on a sheet of Japanese paper. Answers are collected by the ceremony assistants. They check the answers and tell the ceremony master the name of the participants who gave the right answer. Winners are rewarded by one of the calligraphies written during the ceremony at the end of the ceremony.

Unfortunately I did not get any reward, but surprisingly, the last winner kindly asked the ceremony master to offer me his calligraphy. I was greatly honored to receive it.



There are other kinds of the sessions in which, for example, participants should find the three identical incenses out of six.

Japanese incense ceremony is not only a pleasant moment to appreciate delicate fragrance of incense wood but is also a good occasion to meet people. At the lunch break participants move to a different room of the house, and enjoy together the delicious lunchbox and the green tea served by the organizers.

This was an unforgettable experience that I deeply recommend. I would like to express my gratitude to IR Public Relations Office for giving me an opportunity to participate in the spring incense ceremony, and hope that it will help to keep this traditional art alive.

Benjamin Dassonneville
Takasago International Corporation

How to enjoy the aroma of incense

1. When an incense burner placed in front of you, bow to a participant sitting beside you to express "Excuse me for taking before you"
2. Bring the incense burner with your right hand and place it on your left hand.
3. Rotate the incense burner halfway to the left with your right hand, to place "listening point" in front of you.
4. Cover the incense burner so as to make a circle with the thumb and index finger of the right hand, to gather the scent inside the palm.
5. Keep the incense burner upright and lift to your nose, listen to the aroma of incense from in between the thumb and index finger. Commonly, inhale incense three times to listen to its aroma.
6. After listened, hold the incense burner with your right hand and place it to the next person, At this time, rotate the incense burner halfway to the right. Never hand over the incense burner directly since a burning small round charcoal briquette is inside.



GRI Standard Context Index

Standard	GENERAL DISCLOSURES	Pages	Related information / Reasons for omission	G4 standard	ISO 26000	GC
102	GENERAL DISCLOSURES					
GRI 102:	General Disclosures 2016					
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102-1	Name of the organization	P.11-13 Corporate Profile		G4-3	—	
102-2	Activities, brands, products, and services	P.11-13 Corporate Profile P.15-16 Business Outline		G4-4 G4-PR6	—	
102-3	Location of headquarters	P.11-13 Corporate Profile		G4-5	—	
102-4	Location of operations	P.11-13 Corporate Profile		G4-6	—	
102-5	Ownership and legal form	P.11-13 Corporate Profile		G4-7	—	
102-6	Markets served	P.11-13 Corporate Profile		G4-8	—	
102-7	Scale of the organization	P.11-13 Corporate Profile Consolidated Financial Statement for the First Quarter (Available in Japanese)		G4-9	—	
102-8	Information on employees and other workers	P.49 Employment Situation		G4-10	6.4 6.4.3	6
102-9	Supply chain	P.36 Our Supply Chain		G4-12	—	
102-10	Significant changes to the organization and its supply chain	P.36 Our Supply Chain		G4-13	—	
102-11	Precautionary Principle or approach	P.27 Global EHS Management		G4-14	6.2	
102-12	External initiatives	P.14 External Partnerships and Initiatives		G4-15	6.2	
102-13	Membership of associations	P.14 External Partnerships and Initiatives		G4-16	6.2	
2	Strategy					
102-14	Statement from senior decision-maker	P.3-8 Message from President and CEO		G4-1	6.2	
102-15	Key impacts, risks, and opportunities	P.18 Message from Senior Vice President P.25-26 Risk Management		G4-2	6.2	
3	Ethics and integrity					
102-16	Values, principles, standards, and norms of behavior	P.9-10 Corporate Vision P.17-22 Sustainability at Takasago		G4-56	—	10
102-17	Mechanisms for advice and concerns about ethics	P.26 Compliance		G4-57、G4-58	—	10
4	Governance					
102-18	Governance structure	P.24 Governance		G4-34	6.2	
102-19	Delegating authority	P.19 Takasago Sustainability Team P.24 Governance		G4-35	—	
102-20	Executive-level responsibility for economic, environmental, and social topics	P.19 Takasago Sustainability Team		G4-36	—	
102-21	Consulting stakeholders on economic, environmental, and social topics	—		G4-37	6.2	
102-22	Composition of the highest governance body and its committees	Corporate Governance Report (Available in Japanese)		G4-38	6.2	
102-23	Chair of the highest governance body	P.24 Governance		G4-39	6.2	
102-24	Nominating and selecting the highest governance body	Corporate Governance Report (Available in Japanese)		G4-40	6.2	
102-25	Conflicts of interest	Corporate Governance Report (Available in Japanese)		G4-41	6.2	
102-26	Role of highest governance body in setting purpose, values, and strategy	P.19-20 Materiality Assessment		G4-42	—	
102-27	Collective knowledge of highest governance body	P.18 Message from Senior Vice President		G4-43	—	
102-28	Evaluating the highest governance body's performance	—		G4-44	6.2	
102-29	Identifying and managing economic, environmental, and social impacts	P.19-20 Materiality Assessment P.25-26 Risk Management		G4-45	6.2	
102-30	Effectiveness of risk management processes	P.24 Governance P.25-26 Risk Management		G4-46	—	
102-31	Review of economic, environmental, and social topics	P.19-20 Materiality Assessment		G4-47	6.2	
102-32	Highest governance body's role in sustainability reporting	—		G4-48	—	
102-33	Communicating critical concerns	P.24 Governance P.26 Compliance		G4-49	6.2	
102-34	Nature and total number of critical concerns	P.26 Compliance		G4-50	—	
102-35	Remuneration policies	Corporate Governance Report (Available in Japanese)		G4-51	6.2	
102-36	Process for determining remuneration	Corporate Governance Report (Available in Japanese)		G4-52	—	
102-37	Stakeholders' involvement in remuneration	—		G4-53	6.2	

102-38	Annual total compensation ratio	—		G4-54	—	
102-39	Percentage increase in annual total compensation ratio	—		G4-55	—	
5	Stakeholder engagement					
102-40	List of stakeholder groups	P.35 Stakeholder Engagements		G4-24	6.2	
102-41	Collective bargaining agreements	P.49 Employment Situation		G4-11	6.3.10 6.4 6.4.3 6.4.4 6.4.5	3
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102-43	Approach to stakeholder engagement	P.35 Stakeholder Engagements		G4-26、G4-PR5	6.2 6.7 6.7.4 6.7.5 6.7.6 6.7.8 6.7.9	
102-44	Key topics and concerns raised	P.35 Stakeholder Engagements		G4-27、G4-PR5	6.2	
6	Reporting practice					
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102-48	Restatements of information	P.1 About This Report P.30 Water and Effluents		G4-22	—	
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102-51	Date of most recent report	P.1 About This Report		G4-29	—	
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102-53	Contact point for questions regarding the report	P.1 About This Report		G4-31	—	
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102-55	GRI content index	P.55-59 GRI Standard Context Index		G4-32-b	—	
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GRI 103:	Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	P.19-20 Materiality Assessment P.21-22 Our Business Activities and SDGs		G4-DMA-a、 G4-20、G4-21	—	
103-2	The management approach and its components	P.9-10 Medium-term Management Plan "One-T" P.10 Basic Management Policy P.27-28 Environment, Health & Safety > Global EHS Management P.28 Environment > Environmental Management System P.31 Development of OHS Management System P.36 Our Supply Chain P.37-38 Responsible Sourcing P.47-49 Quality Assurance		G4-DMA-b、 G4-EN34、 G4-LA16、 G4-HR12、 G4-SO11	—	1、8
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201-1	Direct economic value generated and distributed	P.11-13 Corporate Profile Consolidated Financial Statement for the First Quarter (Available in Japanese)		G4-EC1	6.8 6.8.3 6.8.7 6.8.9	
201-2	Financial implications and other risks and opportunities due to climate change	P.25 Risk Management > Climate Change		G4-EC2	6.5.5	7
201-3	Defined benefit plan obligations and other retirement plans	—		G4-EC3	—	
201-4	Financial assistance received from government	—		G4-EC4	—	
GRI 202:	Market Presence 2016					
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	—		G4-EC5	6.4.4 6.8	6
202-2	Proportion of senior management hired from the local community	—		G4-EC6	6.8 6.8.5 6.8.7	6
GRI 203:	Indirect Economic Impacts 2016					
203-1	Infrastructure investments and services supported	—		G4-EC7	6.3.9 6.8 6.8.3 6.8.4 6.8.5 6.8.6 6.8.7 6.8.9	

203-2	Significant indirect economic impacts	—	P.38 Responsible Sourcing P.46 Relationship with Local Society	G4-EC8	6.3.9 6.6.6 6.6.7 6.7.8 6.8 6.8.5 6.8.6 6.8.7 6.8.9	
GRI 204:	Procurement Practices 2016					
204-1	Proportion of spending on local suppliers	—		G4-EC9	6.6.6 6.8 6.8.5 6.8.7	
GRI 205:	Anti-corruption 2016					
205-1	Operations assessed for risks related to corruption	—		G4-SO3	6.6 6.6.3	10
205-2	Communication and training about anti-corruption policies and procedures	P.50 Training and Education		G4-SO4	6.6 6.6.3	10
205-3	Confirmed incidents of corruption and actions taken	—		G4-SO5	6.6 6.6.3	10
GRI 206:	Anti-competitive Behavior 2016					
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	—		G4-SO7	6.6 6.6.5 6.6.7	
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301-2	Recycled input materials used	—		G4-EN2	6.5.4	8
301-3	Reclaimed products and their packaging materials	P.39 Recycled & Renewable Materials and Packages		G4-EN28	6.5.3 6.5.4 6.7.5	8
GRI 302:	Energy 2016					
302-1	Energy consumption within the organization	P.29 Energy and Emissions		G4-EN3	6.5.4	7, 8
302-2	Energy consumption outside of the organization	—		G4-EN4	6.5.4	8
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302-4	Reduction of energy consumption	P.29 Energy and Emissions		G4-EN6	6.5.4 6.5.5	8, 9
302-5	Reductions in energy requirements of products and services	—		G4-EN7	6.5.4 6.5.5	8, 9
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303-1	Interactions with water as a shared resource	P.30 Water and Effluents		G4-EN8	6.5.4	7, 8
303-2	Management of water discharge-related impacts	—	P.29-30 Water and Effluents	G4-EN9	6.5.4	8
303-3	Water withdrawal	P.30 Water and Effluents > Total Water Withdrawal by Source		G4-EN10	6.5.4	8
303-4	Water discharge	P.30 Water and Effluents > Water Discharge by Destination			6.5.4	
303-5	Water consumption	P.30 Water and Effluents > Water Discharge by Destination			6.5.4	
GRI 304:	Biodiversity 2016					
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	—		G4-EN11	6.5.6	8
304-2	Significant impacts of activities, products, and services on biodiversity	—		G4-EN12	6.5.6	8
304-3	Habitats protected or restored	—		G4-EN13	6.5.6	8
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	—		G4-EN14	6.5.6	8
GRI 305:	Emissions 2016					
305-1	Direct (Scope 1) GHG emissions	P.29-30 Energy and Emissions > Other indirect greenhouse gas (GHG) emissions (scope 3)		G4-EN15	6.5.5	7, 8
305-2	Energy indirect (Scope 2) GHG emissions	P.29-30 Energy and Emissions > Other indirect greenhouse gas (GHG) emissions (scope 3)		G4-EN16	6.5.5	7, 8
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305-4	GHG emissions intensity	P.29-30 Energy and Emissions > GHG emissions intensity (scope 1 + 2)		G4-EN18	6.5.5	8
305-5	Reduction of GHG emissions	—		G4-EN19	6.5.5	8, 9
305-6	Emissions of ozone-depleting substances (ODS)	—		G4-EN20	6.5.3 6.5.5	7, 8
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306-1	Water discharge by quality and destination	P.30 Water and Effluents > Water Discharge by Destination P.30 Environmental Compliance		G4-EN22	6.5.3 6.5.4	8
306-2	Waste by type and disposal method	P.30 Waste Management > Waste by type and disposal method		G4-EN23	6.5.3	8
306-3	Significant spills	P.32 Work-Related Injury		G4-EN24	6.5.3	8
306-4	Transport of hazardous waste	—		G4-EN25	6.5.3	8
306-5	Water bodies affected by water discharges and/or runoff	—		G4-EN26	6.5.3 6.5.4 6.5.6	8
GRI 307:	Environmental Compliance 2016					
307-1	Non-compliance with environmental laws and regulations	P.30 Environmental Compliance		G4-EN29	4.6	8
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401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	—		G4-LA2	6.4 6.4.3 6.4.4	
401-3	Parental leave	—		G4-LA3	6.4 6.4.3	6
GRI 402:	Labor/Management Relations 2016					
402-1	Minimum notice periods regarding operational changes	—		G4-LA4	6.4 6.4.3 6.4.4 6.4.5	3
GRI 403:	Occupational Health and Safety 2018					
403-1	Occupational health and safety management system	P.31 Development of OHS Management System		G4-LA5	6.4 6.4.6	
403-2	Hazard identification, risk assessment, and incident investigation	P.32 Hazard Identification, Risk Assessment, and Incident Investigation		G4-LA6	6.4 6.4.6	
403-3	Occupational health services	—		G4-LA7	6.4 6.4.6 6.8 6.8.3 6.8.4 6.8.8	
403-4	Worker participation, consultation, and communication on occupational health and safety	P.31 OHS Communications		G4-LA8	6.4 6.4.6	
403-5	Worker training on occupational health and safety	P.33-34 Takasago Safety Day 2018			6.4 6.4.6	
403-6	Promotion of worker health	—			6.4 6.4.6	
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403-9	Work-related injuries	P.32 Work-Related Injury			6.4 6.4.6	
403-10	Work-related ill health	P.32 Work-Related Injury		G4-LA8	6.4 6.4.6	
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404-1	Average hours of training per year per employee	—	P.50 Training and Education	G4-LA9	6.4 6.4.7	6
404-2	Programs for upgrading employee skills and transition assistance programs	P.50 Training and Education P.50 Career development		G4-LA10	6.4 6.4.7 6.8.5	
404-3	Percentage of employees receiving regular performance and career development reviews	—	P.50 Training and Education	G4-LA11	6.4 6.4.7	6
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405-1	Diversity of governance bodies and employees	P.49 Employment Situation P.50 Promoting Diversity		G4-LA12	6.3.7 6.3.10 6.4 6.4.3	6
405-2	Ratio of basic salary and remuneration of women to men	—		G4-LA13	6.3.7 6.3.10 6.4 6.4.3 6.4.4	6
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406-1	Incidents of discrimination and corrective actions taken	P.26 Human Rights	G4-HR3	6.3 6.3.6 6.3.7 6.3.10 6.4.3	6	6
GRI 407:	Freedom of Association and Collective Bargaining 2016					
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	—	G4-HR4	6.3 6.3.3 6.3.4 6.3.5 6.3.8 6.3.10 6.4.3 6.4.5	3	
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408-1	Operations and suppliers at significant risk for incidents of child labor	—	G4-HR5	6.3 6.3.3 6.3.4 6.3.5 6.3.7 6.3.10	5	
GRI 409:	Forced or Compulsory Labor 2016					
409-1	Explanation of the material topic and its Boundary	—	G4-HR6	6.3 6.3.3 6.3.4 6.3.5 6.3.7 6.3.10	4	
GRI 410:	Security Practices 2016					
410-1	Security personnel trained in human rights policies or procedures	—	G4-HR7	6.3 6.3.5 6.4.3 6.6.6	1	
GRI 411:	Rights of Indigenous Peoples 2016					
411-1	Incidents of violations involving rights of indigenous peoples	—	G4-HR8	6.3 6.3.6 6.3.7 6.3.8 6.6.7	1	
GRI 412:	Human Rights Assessment 2016					
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412-2	Employee training on human rights policies or procedures	—	G4-HR2	6.3 6.3.5	1	
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GRI 413:	Local Communities 2016					
413-1	Operations with local community engagement, impact assessments, and development programs	P.51-52 Society	G4-SO1	6.3.9 6.6.7 6.8 6.8.5 6.8.7	1	
413-2	Operations with significant actual and potential negative impacts on local communities	—	G4-SO2	6.3.9 6.5.3 6.5.6 6.8.9	1	
GRI 414:	Supplier Social Assessment 2016					
414-1	New suppliers that were screened using social criteria	P.37 Supplier Relationship Management	G4-LA14, G4-HR10, G4-SO9	—	2	
414-2	Negative social impacts in the supply chain and actions taken	P.37 Responsible Sourcing	G4-LA15, G4-HR11, G4-SO10	—	2	
GRI 415:	Public Policy 2016					
415-1	Political contributions	—	G4-SO6		10	
GRI 416:	Customer Health and Safety 2016					
416-1	Assessment of the health and safety impacts of product and service categories	P.49 Customer Health and Safety	G4-PR1	6.3.9 6.6.6 6.7 6.7.4 6.7.5		
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	P.49 Customer Health and Safety	G4-PR2	6.3.9 6.6.6 6.7 6.7.4 6.7.5		
GRI 417:	Marketing and Labeling 2016					
417-1	Requirements for product and service information and labeling	P.49 Marketing and Labeling	G4-PR3	6.7 6.7.3 6.7.4 6.7.5 6.7.6 6.7.9		

417-2	Incidents of non-compliance concerning product and service information and labeling	P.49 Marketing and Labeling		G4-PR4	6.7 6.7.3 6.7.4 6.7.5 6.7.6 6.7.9	
417-3	Incidents of non-compliance concerning marketing communications	—		G4-PR7	6.7 6.7.3 6.7.6 6.7.9	
GRI 418:	Customer Privacy 2016					
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	—		G4-PR8	6.7 6.7.7	
GRI 419:	Socioeconomic Compliance 2016					
419-1	Non-compliance with laws and regulations in the social and economic area	P.26 Compliance		G4-SO8, G4-PR9	6.6 6.6.3 6.6.7 6.8.7	
350	317					