

Takasago International Corporation

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About this report

The scope of this report includes facilities owned and operated by Takasago International Corporation. Numerical figures shown on this report are according to Takasago International Corporation's FY2016 consolidated financial statement.

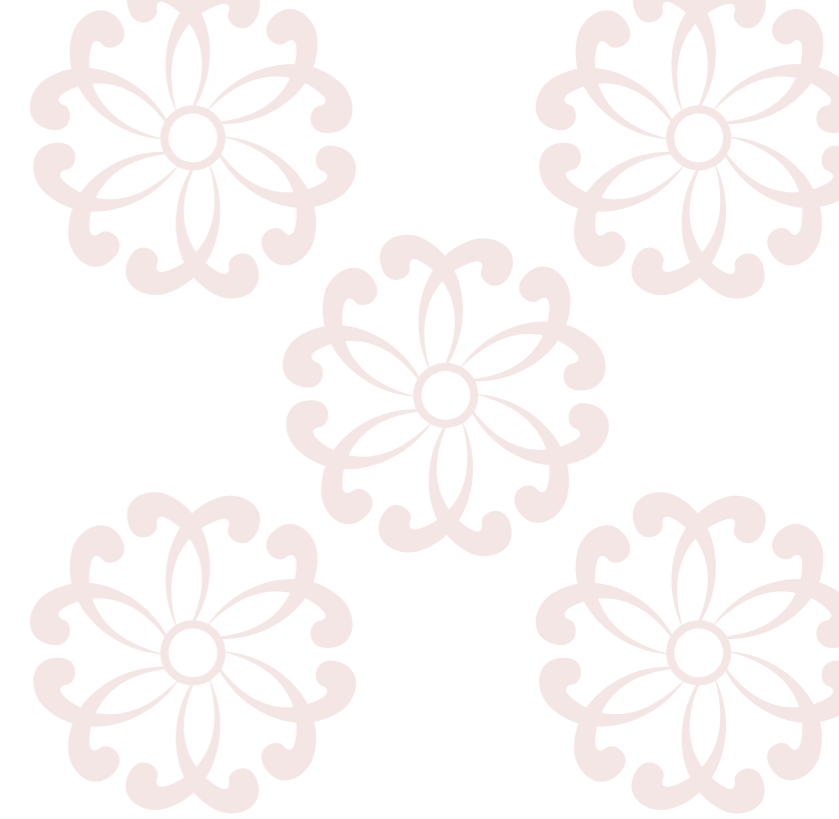
The term of FY2016 of this report is as follows;
From April 1, 2016 to March 31, 2017 for Japan
From January 1, 2016 to December 31, 2016 for the other

TAKASAGO

Sustainability Report

2016





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With our commitment to “Contributing to Society through Technology”, we continue to develop technologies that enrich lives of people and societies worldwide and actively contribute to the development of a truly sustainable global community.



Message from President and CEO

Contributing to Society through Technology

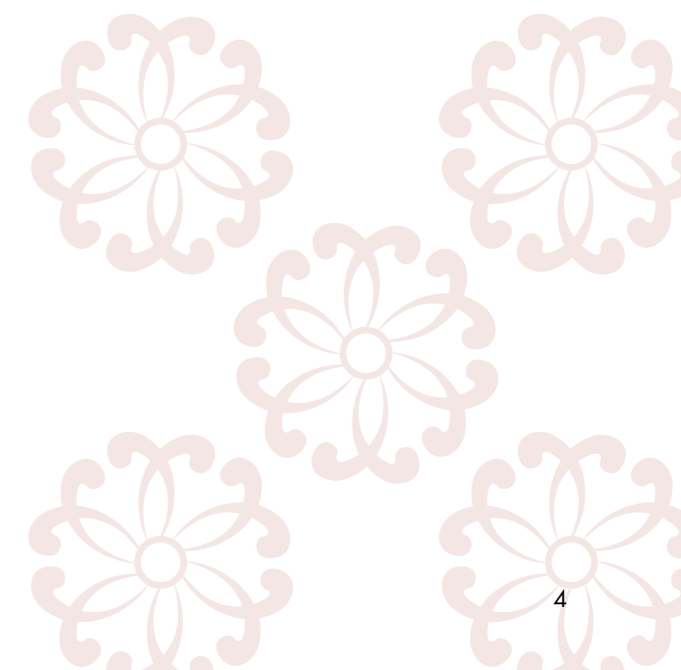
Founded in 1920 with the Corporate Philosophy of “Contributing to Society through Technology”, Takasago International Corporation has been developing innovative products and technologies that contribute to improving the Quality of Life for people and societies globally. Takasago’s products are not just in foods, cosmetics and household products, but now extend to pharmaceutical intermediates for the life science industry and functional materials for the electronics industry. For us to contribute to the society, it is essential to share a common understanding with our stakeholders on the importance and value of sustainability as one of the key cornerstones of our mission.

The Takasago Global Plan, a medium term management plan that is to be executed in 4 phases was launched in 2008 and is running through to 2020, the year Takasago celebrates its 100th anniversary. The vision is to become “a Top-leading Player” in the industry by 2020. We are trying extremely hard to strengthen our market presence across the globe and accelerate the growth. At the same time, and as described in basic management policy where we are to be “A well regarded company that respects the global environment and local communities”, it is also our priority to tackle environmental issues and cope with demands of society. As such, the Takasago Global Plan addresses sustainability as one of the most important objectives to achieve. This clearly demonstrates our long term commitment to fulfill our economic, environmental and social responsibilities in a well-balanced manner.

In the Takasago Global Plan Phase 3, we set 4 key words to encompass our sustainability vision. These are: Green Chemistry, Green Procurement, Social Responsibilities, and EHS.

As an example of our pursuit of Green Chemistry, we invested in continuous pipe flow reactors at our Iwata Plant a couple of years ago. These pipe flow reactors are part of a manufacturing process that enables us to improve not only the efficiency of chemical synthesis but also safety. In addition, this helps reduce the environmental impact of our industrial processes.

A Bio based company, Centre Ingredient Technology (CIT), joined the Takasago group at the beginning of January 2016. This acquisition allows for synergy of the advanced bio manufacturing process and technology of CIT and Takasago’s unique and patented fermentation technology to broaden the range of our natural ingredients pallet.



Takasago keeps highly valued and regarded partnerships with many local communities in Madagascar, Indonesia, and many other countries. In Madagascar, Takasago formed a joint-venture company that sources vanilla beans from various areas of the country. The company supports studies conducted by a local university to find ways to ensure the sustainability of this important agricultural product. This does not only lead to Green Procurement, but also fulfills our social responsibility to the local communities which are involved in the production of vanilla beans, an essential input of our business.

In the EHS field, we are in the process of getting OHSAS certification on a global basis. While we comply with local laws and regulations and are keen to improve the workplace environment, it is important to standardize the workflows and the best workplace practices to ensure a safe, decent and productive work place for all our sites worldwide.

Our resolve to the development of a sustainable society

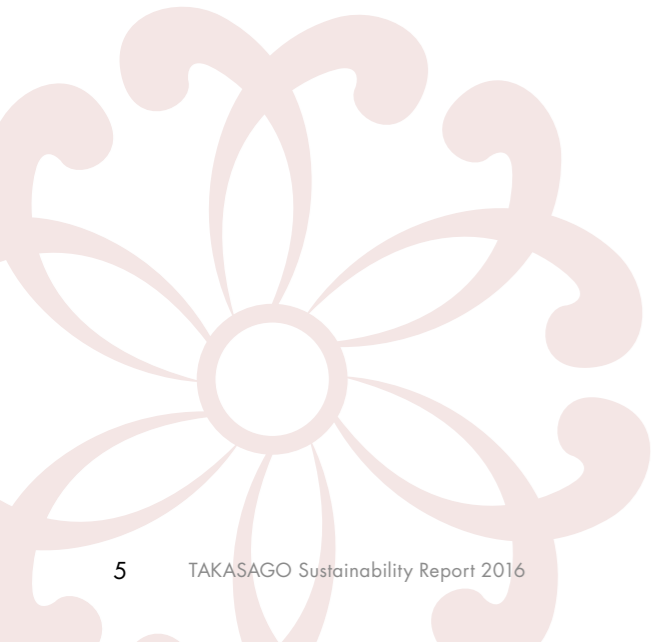
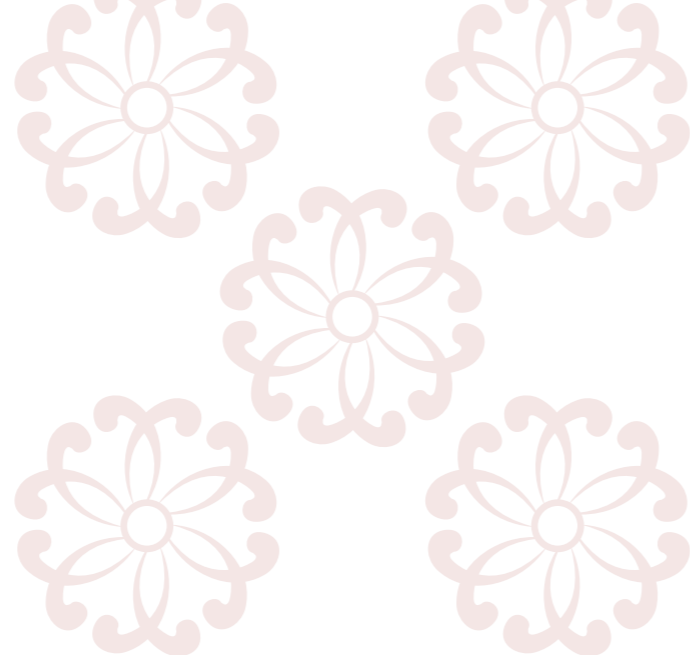
Takasago embraces and supports global initiatives. Just recently, we joined the UN Global Compact and adhere to its Ten Principles and the 17 sustainable Development

Goals (SDGs). We ensure that our entire organization is aware of the goals and how we are to achieve them. We also respect COP21 and are completely aligned with its global agreement on the CO₂ emission reduction targets. We will integrate our corporate sustainability plan with these global efforts and ensure that they are embodied in the core values and practices of our entire organization.

This time, we are delivering the first sustainability report in English. Taking this opportunity, we reaffirm our resolve to the development of a sustainable society, to fulfill our responsibility as a member of society and to meet expectations from stakeholders. I assure everyone that Takasago is committed to sustainable growth and will continue to further enhance our corporate value.

Sincerely yours,

Satoshi Masumura
President and Chief Executive Officer



Our Tradition – About our Founder



Tadaka Kainosho, the founder of Takasago International Corporation, was born in Kyoto, Japan in 1880. He finished his chemistry degree at Kyoto-Teikoku University currently known as Kyoto University and devoted himself to further study even after graduation. He became an Assistant Professor at the age of 26. His major was perfumery chemistry, which was still an unexplored field in Japan at that time. Because of the extremely limited learning opportunities in Japan, he decided to continue his studies in Europe, the home of perfumery.

After spending three fruitful years studying in Europe, Kainosho came back to Japan and worked for a soap manufacturing company for several years. In February 1920, he founded Takasago International Corporation with technical colleagues from the company.

He chose the company name of “Takasago” from the title of a Japanese tale about a husband and wife that live together in peace and harmony, for many years.

In June, 1910, Kainosho left the university and headed for Europe. First, he visited Grasse in France, which even today is still considered a global center for perfumery. In those days, it was uncommon for foreigners to be accepted for training in Grasse. However, after extensive negotiations, Kainosho was permitted to be a trainee in the region. He spent 10 months learning about the production of essential oils through steam distillation, aroma evaluation methods, and also gained raw material purchasing experience. Kainosho’s passion as well as his analytical expertise and experience he gained during his university time helped him gain the trust of his colleagues.

As Takasago was founded by technical experts, Kainosho was already confident at the time of its foundation, that Takasago would be a pioneer of fragrance production in the region. The Company philosophy of “Contributing to Society through Technology” came along naturally and has become our tradition ever since.

Kainosho’s confidence and passion are reflected in his original Prospectus:

“As per progress of civilization, increasing demand on cosmetic product is now very clear.

However, raw materials of fragrance which are a part of the composition of cosmetic products cannot be sourced within our country, so that we import a certain amount from overseas.

Furthermore, no fragrance manufacturing technology, facility and knowhow exists in the country for the time being. This is a huge loss of our country.

We have an advantage.

We are located near to Asia Pacific, India, China and Taiwan. Those countries are blessed with natural resources. Why not take this advantage and be independent as a fragrance manufacturing company.”

In 1912, Kainosho finally achieved his dream to become a trainee at a world- leading perfumery company of the time.

While at the company, Kainosho learned about both compounded and synthetic fragrances. Kainosho was provided a lab fully equipped with fragrance raw materials, reagents, compounded and natural fragrances, and the latest fine fragrances that Kainosho desired. Kainosho was also given an opportunity to visit some companies where he could learn about fragrance packaging.

Kainosho never forgot the professional assistance and the hospitality he received from many people in these companies during this period. He reminisced about it later in his life. He also mentioned how he was attracted by those products he witnessed there, as they were the utmost in beauty and artistry that he had ever seen.

Until today, Takasago employees have cherished this as Takasago’s spirit.

We will keep exploring our possibilities and pass the spirit on to future generations.



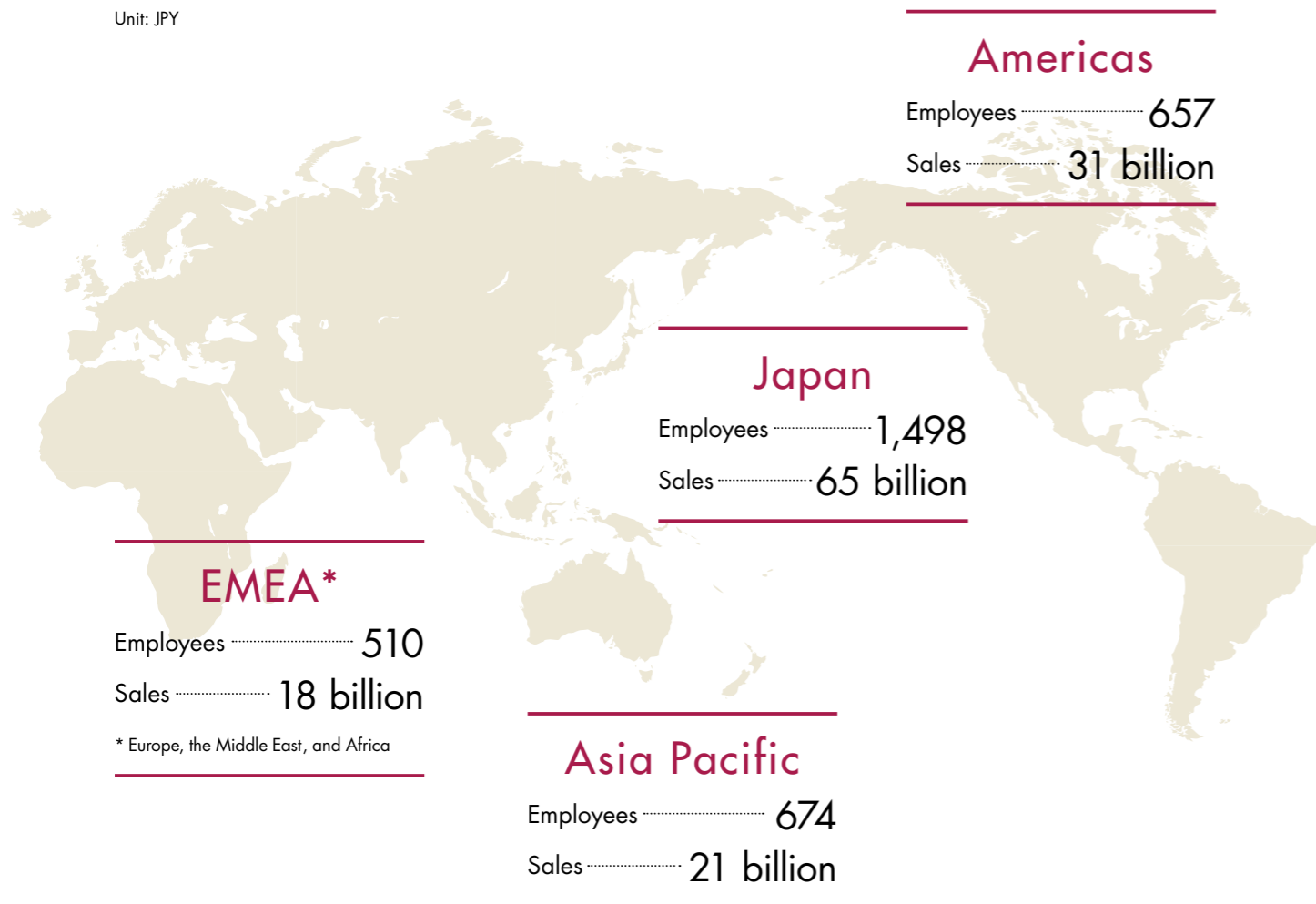
About Takasago

The preference of flavors and fragrances is influenced by culture, climate and customs. Takasago has been exploring the global market and currently has business operations in 26 countries and regions around the world. Takasago strengthens its market presence worldwide and accelerates the growth in every region.

As of end March, 2017

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	3,339

Unit: JPY

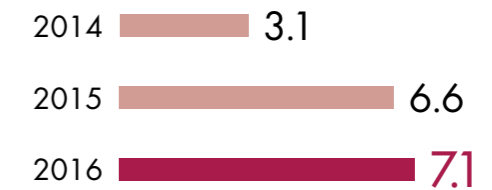


Financial Highlights

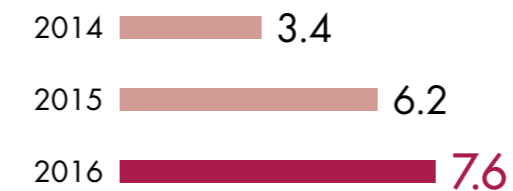
Sales Turnover in billion JPY



Operating Income in billion JPY



ROE* %

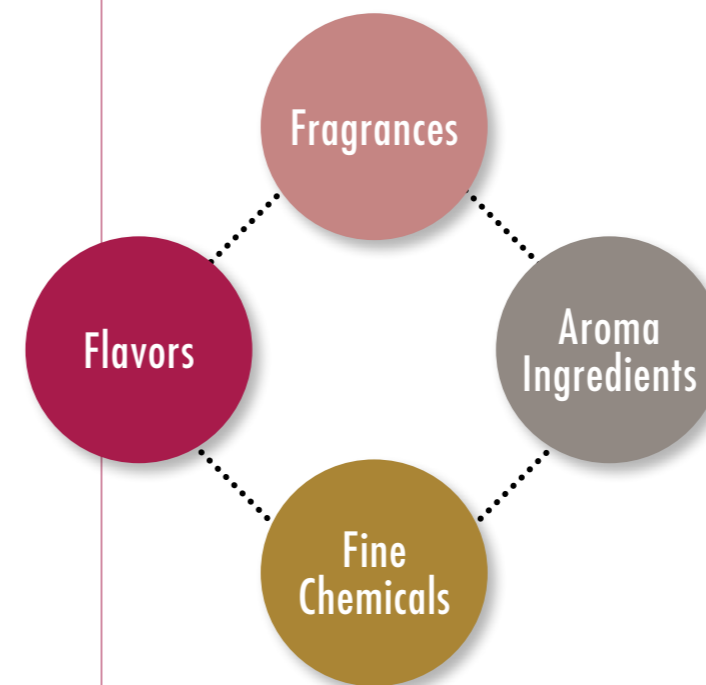


R&D Expense to Sales Turnover in %

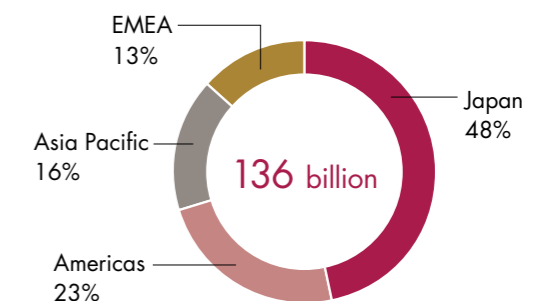


* ROE = Return On Equity

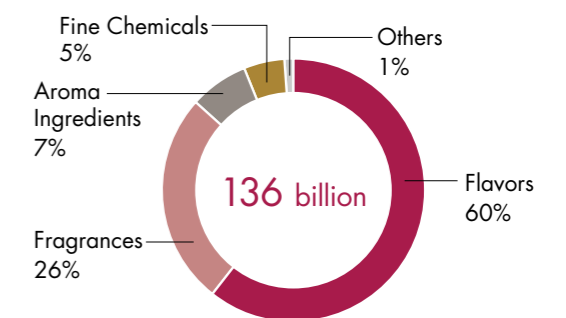
4 Core Businesses



2016 Sales Turnover by Region



2016 Sales Turnover by Category



Business Outline

Takasago develops Flavors, Fragrances, Aroma Ingredients and Fine Chemicals that enrich people's daily lives.



Laundry detergent,
Fabric softener



12

Skincare products,
Cologne, Cosmetics



Yogurt, Pastries, Dressing,
Instant noodles



15

Functional foods/
drinks



Ice cream, Potato chips,
Chocolate,
Canned coffee beverages



Dashi
(Japanese traditional Umami)



19

Hair care products,
Body wash



6

Facial soap, Toothpaste,
Mouthwash



Fine Chemicals

Supporting development of new medicines by supplying pharmaceutical intermediates

23

Room fragrances



Sustainability at Takasago

Takasago considers sustainability as a vital element for our growth

Message from Senior Vice President



Tatsuya Yamagata

Tatsuya Yamagata
Senior Vice President,
Corporate Strategy & Planning Division,
and EHS Executive

As Senior Vice President of Corporate Strategy & Planning at Takasago Headquarters, I am leading the Takasago Sustainability Team. The team consists of the following 5 functions: EHS, Human Resources, Procurement, R&D, and Quality Assurance.

In 2008, EHS100 was launched as a key component of the Takasago Global Plan, which is running towards 2020 – the year of our Centennial. Our EHS100 represents the group's corporate sustainability plan and embodies key policies and issues of social responsibilities and basic human rights. The items listed in the plan include but are not limited to key targets such as a 20% reduction of CO₂ emission by 2020 (using 2010 as the base year), establishment of the guidelines of our green procurement policy, promotion of diversity and inclusion and many others. For over these nine years, each of our teams has been making strenuous efforts to tackle those issues and achieve objectives set every three years. Takasago Sustainability Team has been strictly monitoring on a regular basis the progress on all of these issues we are committed to address.

In June this year, Takasago participated in the UN Global Compact. We align the strategies and operations with the global initiatives. In conducting the corporate sustainability at a global level, it is vital to share values and visions in the entire Takasago group and establish a culture of integrity within us. With this integrity, we



will develop an even more comprehensive approach to achieve our goals as well as meet the expectations of our stakeholders worldwide. This will lead to our long term sustainable growth and maximize the corporate value.

The EHS100 Plan

Takasago regards the EHS100 as the plan that covers the entire scope of sustainability.

The plan mainly consists of E (Environment), H (Health) and S (Safety) items, including management of chemical substances, waste management, risk management, and facility management and vehicle control. In addition, items such as education and training programs, policies related to human and worker rights, and coexistence with the communities we work with are also covered by the EHS100 plan and scope. Key data and information are stored in a system called Takasago Responsible Care, which is used in all our affiliates on a global basis.

Corporate Governance

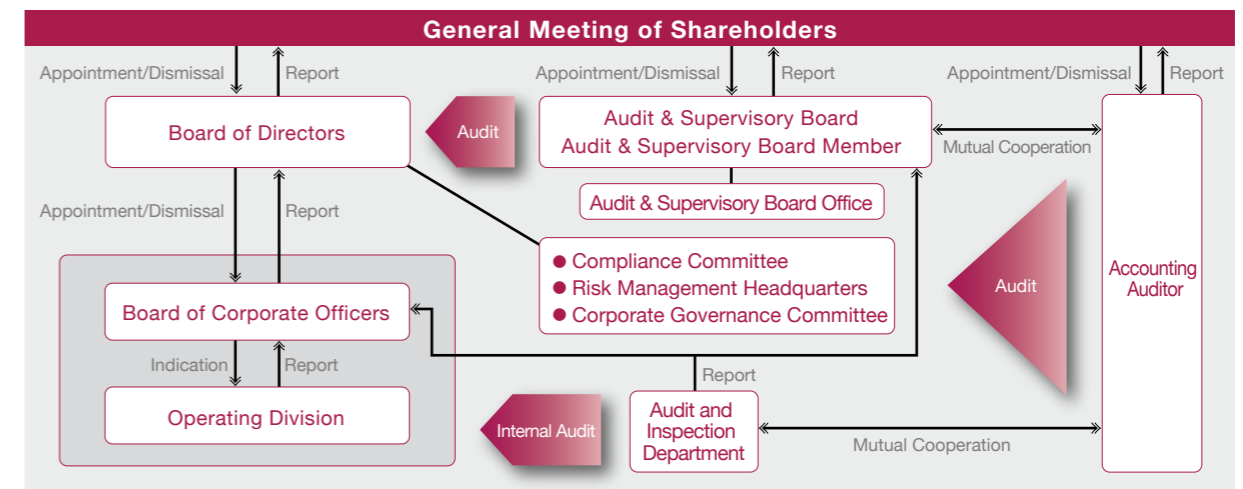
The Takasago Management continues to strengthen Corporate Governance by ensuring the decision making process is according to the corporate guidelines and is properly monitored by the Board of Directors. Transparency in corporate activities is further enhanced through appropriate information disclosure.

In addition to establishing the Basic Policy on Internal Control, a Corporate Officer system was established to clearly separate the Board of Directors' supervisory and policy making functions from Corporate Officers' execution

and implementation roles in the business. 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.

A Charter of Corporate Behavior and Code of Conduct is disseminated globally and regularly updated to ensure relevance and used as a guideline for all the employees. The global Human Resources team monitors its dissemination and consistent implementation in all Takasago sites.

Corporate Governance System



Crisis Management

With regard to sustainability, Takasago takes the broadest view. We do not only value the environment and society, but are dedicated to the sustainability of our business. This is also extremely important to fulfill the responsibility to our stakeholders. As such, the Takasago group is now on track to finalize its Crisis Management System, including a Business Continuity Plan (BCP), which enables us to take necessary precautions against possible disasters and emergency

situations. The Crisis Management System, supervised by the Corporate Headquarters in Tokyo, continuously identifies potential risks that may hinder business continuity, as well as formulates and reviews crisis management plans against such risks. All the procedures are to help effectively minimize the impact of a contingency, and immediately restore normal operating conditions.

The UN Global Compact/ SDGs

Takasago International Corporation joins the United Nations Global Compact

As of June 2017, Takasago International Corporation declares its support to the United Nations Global Compact

The Takasago group will adhere to the UN Global Compact's Ten Principles in the area of human rights, labor, environment and anti-corruption, and incorporate the universal principles into our business activities. In conducting corporate sustainability at a global level, each and every one of us in

Takasago shares values and a culture of integrity, so that the whole group can join forces and strengthen our approach to achieve the same goals and to meet the expectations of our stakeholders in the global community.

Overview of the United Nations Global Compact

The UN Global Compact was first announced by the UN Secretary-General Kofi Annan in an address to The World Economic Forum on January 31, 1999, and was officially launched at UN Headquarters in New York on July 26, 2000. It is a worldwide initiative to encourage businesses and entities to take leadership in a responsible and creative manner, and to demonstrate good corporate citizenship in order to realize sustainable growth.

Along with the personal commitments of the chief executives, the businesses and entities that support the UN Global Compact are expected to sustain their efforts for substantiation of the ten principles in the areas of human rights, elimination of corrupt labor, environmental efforts, and anti-corruption.

For more information on the UN Global Compact; <https://www.unglobalcompact.org/>



Takasago takes strategic actions to advance SDGs

In September 2015, the Sustainable Development Goals of the 2030 Agenda, known as SDGs, was adopted by the United Nations as the Post-MDGs (Millennium Development Goals) with a broader scope and officially came into effect on January 1, 2016. The SDGs are composed of 17 goals and 169 associated targets. The 17 goals include no poverty, fight against inequalities, tackle climate change, and others. Takasago is committed to taking strategic actions to advance the broader societal goals with an emphasis on collaboration and innovation.



Takasago incorporates SDGs into our operations and procedures



- Research and preservation of the aroma of endangered species



- Management of Chemical Substances
- Prevention of Air, Water and Soil Pollution
- Waste Management
- Risk Management and Response to Accidents and Emergencies
- Facility Management and Vehicle Control



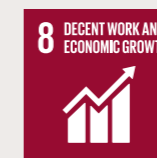
- Prohibition of child labor below the age of 16
- Elimination of discrimination
- Creation of a better work place environment for employees with disabilities
- Dissemination of the Takasago Suppliers' Code of Conduct
- Respect for Basic Human and Worker Rights



- Prevention of Air, Water and Soil Pollution
- Waste Management
- Countering Global Warming and Conserving Resources
- Development of Products and Technologies



- Countering Global Warming and Conserving Resources



- Development of Products and Technologies
- Countering Global Warming and Conserving Resources
- Respect for Basic Human and Worker Rights
- Education and Training Programs



- Research on olfactory and taste receptors
- Development of unique aroma ingredients with chirality
- Testing on Fragrance substantivity, diffusivity and stability



- Countering Global Warming and Conserving Resources
- Development of Products and Technologies
- Management of Chemical Substances
- Prevention of Air, Water and Soil Pollution
- Waste Management



- Development of Aroma Ingredients with biomass ingredients














- Collection and analysis of the endangered species



- Collection and analysis of the endangered species

The EHS100 Plan

EHS100 is subdivided into four mid-term phases each three years long

Overall Category	Subcategory	Objectives	SDGs	Phase III FY2015-2017	Phase IV FY2018-2020
EHS Management	EHS Managers	Overall coordination of EHS management	-	Must have full-time EHS Manager at each production site; continue annual meeting of Chief EHS Officers with periodic meeting of EHS Managers	
	Internal Auditing	Selection of full-time inspectors		Global inspection meeting (every year)	
	Management System (MS)	Third-party certification of MS		Obtain OHSAS 18001 certification for non-consolidated production sites (Hiratsuka, Iwata, Kashima)	Expand ISO 14001 certification to Central R&D in Japan Expand OHSAS certification to all production sites
	EHS Auditing	Mutual audit for ISO 14001 once per year		Continued safety inspection of overseas production sites by TIC Safety Team	Establishment of global EHS auditing system
Legal Compliance and Self-management	Statutory Managers	Full implementation of responsibilities and powers	-	Construction and implementation of the accident/incident report system	Implementation of information sharing
	Due Submission of Statutory Filings	Centralized management of statutory managers Management procedures for statutory filings			
Action on Environmental Issues	Improved Information Disclosure	Global report	-	Global sustainability report in Japanese and English (booklet)	
3.1 Countering Global Warming and Conserving Resources	Compliance with Kyoto Protocol	Compliance with Global Warming Solutions Law		20% CO ₂ reduction per ton production by 2020 vs. 2010 Develop methodology to calculate GHG emissions other than CO ₂ at chemical manufacturing sites CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ (6 gases) Renewable energy (30%)	20% CO ₂ reduction per ton production by 2020 vs. 2010 Renewable energy (50%)
	Reduced Water Use	Reduction in pumping of groundwater		Implement selected option(s) for reducing water use in Japan	Reuse drainage discharged into rivers (install drainage recycling facilities) in Japan
	3Rs (Reduce, Reuse, Recycle) for Containers and Packaging	3R activities for containers and packaging		Recycle containers and packaging	
3.2 Management of Chemical Substances	Air Pollutants	Voluntary regulation of VOCs		Responsibility of Cooperate Quality Assurance HQ	
	Regulations	Chemical safety management			
	Monitored Chemicals	Handling as voluntarily regulated "chemical substances"			
3.3 Prevention of Air, Water and Soil Pollution	Prevention of Water and Soil Pollution	Coexistence with neighboring communities		Guarantee zero escape of emissions off-site	
	Reduction of CO ₂ Emissions at Nonproduction Sites	Implementation of energy saving activities by sales arm		20% CO ₂ reduction by 2020 vs. 2010 in non-production sites	20% CO ₂ reduction by 2020 vs. 2010 in non-production sites
	Underground Facilities	Relocation of underground tanks and piping above ground		Relocate underground facilities above ground at Group production sites in Japan	Relocate all underground facilities above ground or implement pollution prevention system at production sites worldwide
	Effective Use of Water Resources	Reduction of water consumption		20% water reduction per ton production by 2020 vs. 2010	20% water reduction per ton production by 2020 vs. 2010
3.4 Sensory Pollution and Response to Complaints	Prevention of Noise and Odors Outside of Facility	Voluntary standards	-	Apply voluntary standards to all production facilities	
3.5 Waste Management	Emissions Reduction Program	100% recycling of industrial waste Reduction of industrial waste emission		Achieve emissions reductions at production sites overseas 20% emissions reduction per ton production by 2020 vs. 2010 (non-recycle waste)	Recycle 100% at all production sites 20% emissions reduction per ton production by 2020 vs. 2010
	Measures to Ensure Proper Disposal of Industrial Waste	Manifest management		Inspect firms to which recycled raw materials delivered (incl. overseas)	Audit and supervise legal compliance of contractors
	Communication with Industrial Waste Collectors	Monitoring of all contractors at each plant		Reduce toluene emissions (by 50% from 2000 level) in Japan and Spain	Plan to reduce emission and transport of other PRTR substances
	Reduction of Toluene & Halogen-Based Organic Solvents in Production	Revised VOC law (benchmark year: 2000) Halogen-based organic solvents (benchmark year: 2000)		Reduce toluene emissions (by 50% from 2000 level) in Japan and Spain	
Risk Management and Response to Accidents and Emergencies	EHS Risks	Risk assessment Compilation of risk identification procedures Procedures for implementation of hazardous/non-regular operations		Specification and analysis of risks	Establishment of risk management system
	Risk Diversification	Enhancement of risk management measures			
Development of Products and Technologies	Environment, Health, and Safety Assessment	Compilation of assessment guidelines Implementation of assessments and taking account of findings		Production sites in Japan	Extending to overseas
	Life Cycle Assessment (LCA)	Adoption and implementation of LCA for selected Takasago Products		Implement LCA (80% items of total production weight)	Implement LCA (90% items of total production weight)
Facility Management and Vehicle Control	Facility Operation and Maintenance	Compilation of manuals (electronic and/or paper)		Extending to overseas	
	Facility Safety Inspections	Equipment safety and management, education and training			
	Accidents Resulting in Bodily Injury	Education and training			
	Forklifts	Implementation of Failure Mode and Effects Analysis by TIC Safety Team		Examination of FEMA introduction (Japan)	
Coexistence with the Community	Installation and Renovation of Facilities				
	Communications with Local Community	Appointment of liaison officer Community outreach	-		
	Corporate philanthropy	Fund-raising activity			
Volunteer Activities	Active use of volunteer leave program	Establishment of volunteer leave system			
Respect for Basic Human and Worker Rights	Child Labor	Minimum work age: 16 (no one younger to be hired)			
	Respect for the Individual	Elimination of discrimination			
	Hiring of Disabled Workers	Creation of accessible workplace			
	Assessment of Suppliers	Takasago International Corporation Suppliers' Code of Conduct			
Education and Training Programs	Restructuring of EHS Education	Raising of skill and knowledge levels on EHS		Establishment of EHS education system in Japan	Establishment of global EHS education system including e-learning
	EHS Field Practice	Crisis simulation		Continual improvement of emergency procedure	
	Specialized Staff/Specially Qualified Personnel	Systematic training		Establishment of a job description/requirements for EHS managers	
	Education of New Personnel	Issuance of certificate		Development and implementation of the new personnel educational program (and issue certificate)	

Our Activity

EHS

Ensure compliance with laws, regulations and voluntary compliance obligations, protect people's health and safety and preserve the global environment.

Innovation

Continue focus on the development of innovative technologies that enrich lives of people and societies worldwide.

Procurement

Value the relationships with our global, regional and local partners. Our focus, and commitment is to procure quality raw materials at a reasonable cost, from sustainable sources. In addition, we invest in, and support sustainability studies and improvements in local communities.

Relationship

In valuing our relationship with stakeholders, Takasago sustains not only our business but also our social and cultural commitments and passes our cultural heritage on to future generations. In alignment with these goals, we implement and support proactive programs that add value to Takasago and its employees, leading to improved employee welfare, empowerment, growth and retention.

EHS

ISO Certification

Initially, the Takasago group acquired ISO 14001 certification for each production site in Japan in order to promote environmental activities. However, to demonstrate our global commitment to environmental responsibility, we set the goal of obtaining a single, integrated ISO 14001

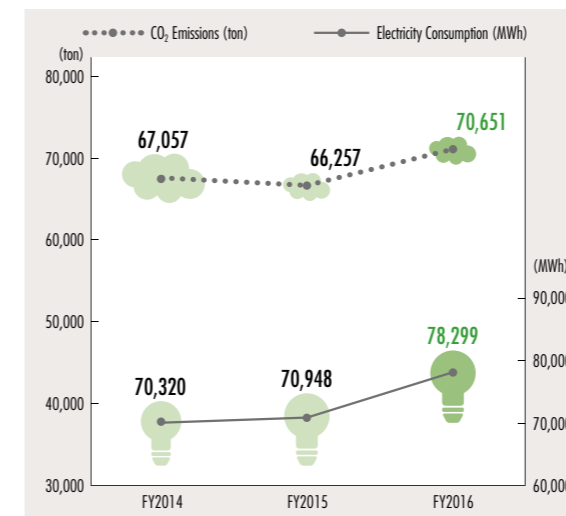
certification for all Japanese and overseas production sites in Phase I (fiscal 2009 to 2011) of the EHS100 plan. We acquired integrated ISO 14001 certification for all eligible production sites in and outside of Japan in December 2011. By developing an environmental management system that covers the entire supply chain, we will reinforce our corporate governance across the Takasago group and promote achievable and more efficient environmental activities.

Combating Climate Change

Combating Climate Change is one of our challenges. Takasago has been working hard to reduce CO₂ emissions at all our sites worldwide. We promote Green Chemistry, re-look at our cooling and heating systems and manufacturing processes, and consider converting to renewable energy. Based on the "Corporate Value Chain Accounting and Reporting Standard (Scope 3)" that was introduced in 2012,

we have been calculating the Scope 3 GHG Emissions. In FY2016, Scope 3 GHG Emissions accounted for almost all of our GHG Emissions (95.0%). Further, most Scope 3 emissions resulted from Category 4: Upstream transportation and distribution (see table). Accordingly, we are now looking into alternative modes of transportation in order to reduce emissions.

Electricity consumption and CO₂ emissions



Data for the Takasago group

Calculating Scope3

	CO ₂ emission (metric tonnes)	GHG Ratio to the gross volume
cat 1	Purchased Goods and Services	NA
cat 2	Capital goods	NA
cat 3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	NA
cat 4	Upstream Transportation and Distribution	1,305,504 94.5%
cat 5	Waste Generated in Operations	2,245 0.2%
cat 6	Business Travel	2,838 0.2%
cat 7	Employee Commuting	3,077 0.2%
cat 8	Upstream Leased Assets	NA NA
cat 9	Downstream Transportation and Distribution	NA NA
cat 10	Processing of Sold Products	NA NA
cat 11	Use of Sold Products	NA NA
cat 12	End-of-Life Treatment of Sold Products	NA NA
cat 13	Downstream Leased Assets	NA NA
cat 14	Franchises	NA NA
cat 15	Investments	NA NA
Scope 3 (Total)* Data period: 1 April 2016 to 31 March 2017		
		1,313,664 95.1%
Scope 1		28,073 2.0%
Scope 2		40,327 2.9%
GHG total amount		1,382,064 100.0%

Data for the Takasago group * NA: not available Data for FY2016

Health & Safety

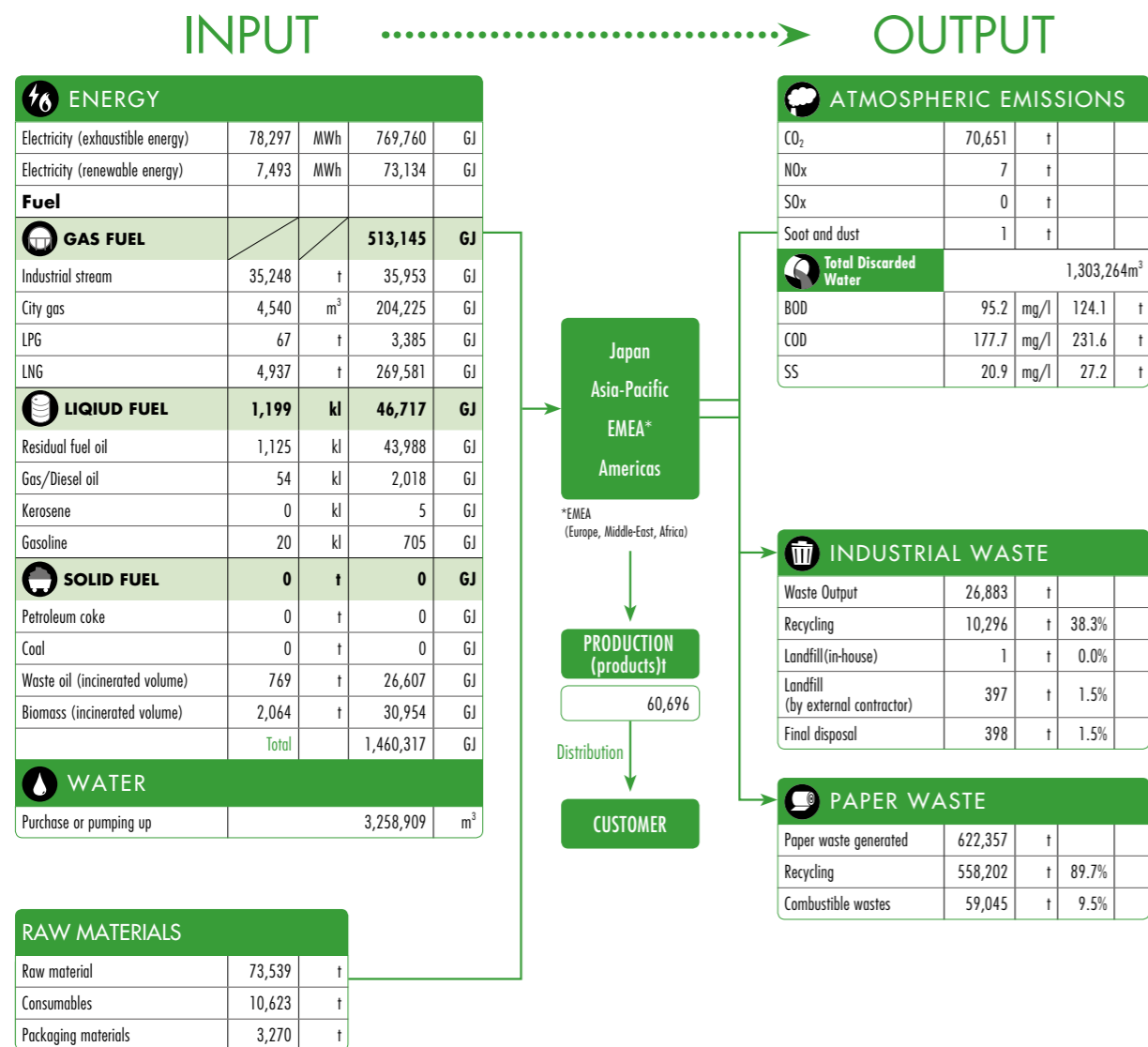
Our EHS Headquarters is responsible for protecting people's health and safety at all Takasago facilities on a global basis. All Takasago employees have been working together to

promote a safety culture, which is being incorporated into our day-to-day practice. Every year we conduct "Takasago Safety Day" on April 10, on the day when a tragic fire accident occurred at our Hiratsuka plant in Japan. This event is to remember the accident and strengthen our individual awareness of the importance of operational safety.

Material Flow

Environmental impact of our business activities in FY2016

t = 10³kg



About T-ReCS

Takasago Responsible Care System (TReCS) is a Global EHS Data Reporting & Tracking tool that precisely records and analyzes key EHS metrics from all of our locations. By utilizing this system, we determine key performance indicators such as carbon footprint, and establish future performance goals..

Innovation

Green Chemistry

Green Chemistry is the design of chemical products and processes that reduce or eliminate the generation of hazardous substances. Takasago follows the definition and the 12 principles of Green Chemistry by EPA.

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, not stoichiometric reagents
10. Design chemicals and products to degrade after use
11. Analyze in real time to prevent pollution
12. Minimize the potential for accidents

Takasago practices Green Chemistry to the greatest extent possible, with the aim to improve chemical production

processes, increase efficiency and safety, and reduce impact on people and the environment.

One of our approaches is to maximize the use of catalysts. It enables us to produce chemicals efficiently, with a minimum amount of raw materials. This also helps reduce energy consumption.

Takasago has been developing various types of catalysts in order to meet the requirements of individual production processes and has become a leading supplier of custom-designed catalysts. We offer a variety of products, including a catalyst that can be used to produce chiral chemicals, as well as a catalyst for homogeneous hydrogenation of esters, which was recently developed. This successful development contributed to the even more significant reduction of the amount of reagents and wastes, compared to the traditional method using combustible organometallic reagents. We will continue our research, aiming at the discovery of the reactions under mild production conditions and the development of a concise process of manufacturing catalysts. This will minimize the impact on the environment from our manufacturing processes.

Life Cycle Assessment

Life cycle assessment (LCA) is a technique to assess environmental impacts associated with all the stages of a product's life. LCAs can help avoid a narrow focus on environmental concerns by:

- Compiling an inventory of relevant energy and material inputs and environmental releases;

- Evaluating the potential impacts associated with identified inputs and releases;
- Interpreting the results to help make a more informed decision. The procedures of life cycle assessment are part of the ISO 14040 and 14044 environmental management standards.

Takasago conducts LCAs on selected Aroma Ingredients.

Supporting wellness

Today, people are getting more and more health conscious. There are growing demands for healthier foods and drinks. Food industries are making efforts to develop functional foods with less salt, fat and sugar to meet people's individual preferences.

Takasago flavors add value by enhancing the taste of functional foods.

Takasago serves as a reliable partner to support our customers in their product development, taking advantage of our highly advanced technologies developed in pursuit of innovation.

Biodiversity

Ogasawara Project

The Ogasawara Islands are a chain of 30 remote volcanic islands approximately 650 miles south of Tokyo. Designated a world heritage site in 2011, these islands have never been connected to any continent in their 48 million year history, so they have evolved hundreds of unique species.

Access to national parks and forests in Japan is often restricted. Takasago is the only fragrance company authorized to explore the islands. Takasago staff have collected and analyzed the aroma given off by dozens of novel Ogasawara plants and flowers, to re-create the aromas without touching their pristine

natural environment.

The concept of "Biodiversity hot spots" has recently been proposed amid growing concerns about conservation of the natural environment. Japan has been named as one of the world hot spots. In order to maintain biodiversity in Japan, we need to develop and implement protective measures immediately. Our research on the aroma of plants where it is not possible to take samples, is a good example of ways to preserve the richness of our vegetation biodiversity.

Protecting the Biodiversity of Madagascar

Takasago entered a scientific and financial partnership on vanilla research with the Regional University Center of the SAVA (CURSA).

Takasago is funding the establishment of a Research Laboratory and supporting a Ph.D. student's local research. Takasago and CURSA share a common vision for Madagascar and the SAVA region: rehabilitating the local education system and agronomy research infrastructures with the final goal of

reenergizing ecotourism and agriculture.

As of March 2015, this pioneering research — unique in this genre in Madagascar — has already achieved extraordinary results, including the diagnosis and classification of vanilla diseases; the inventory and characterization of the different varieties of vanilla in the SAVA region; their botanical and genetics identification; the creation of a Genomics bank; and the implementation of an experimental field for vanilla.



Procurement

Responsible Sourcing / Ethical Supply Chain

Takasago values the global environment and continuously strives to achieve and maintain a high level of trust from society. Consequently, we prioritize and value suppliers that place importance on environmental and social responsibilities. By sharing our "Suppliers Code of Conduct" we request our suppliers to comply with laws, regulations, and social norms; protect human rights; and assure health &

safety and fair trade. In early 2016, we joined Sedex (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 Supplier Questionnaire, we will ensure an ethical supply chain.

Procurement Policy

Takasago has established the Corporate Procurement Policy and Corporate Procurement Guidelines to ensure responsible procurement activities by all procurement staff in Japan and at other Takasago group operations.

The Takasago group stably procures safe and reliable raw materials at the most reasonable prices that can be realized. The quality of such raw materials must satisfy customer requirements and meet the laws and regulations of the respective countries.

- 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

Green Procurement

Preservation of the environment is included in the Corporate Procurement Policy. Therefore, we procure raw materials from renewable resources to the maximum extent possible. "Renewable resources" are defined as Natural Resources

that can replenish to overcome human consumption through biological reproduction, naturally recurring processes and / or other positive actions.

Sustainable Palm Oil

Takasago became a member of the Roundtable on Sustainable Palm Oil (RSPO) in July, 2017.

The RSPO is an international non-profit organization established in 2004 by the World Wildlife Fund (WWF) and corporations deeply involved with palm oil. It aims

to promote a sustainable palm oil industry through the dissemination of principles and criteria for sustainable palm oil production. Members include a variety of corporations and organizations, ranging from producers, processors, consumable manufacturers to environmental NGOs.

Partnership

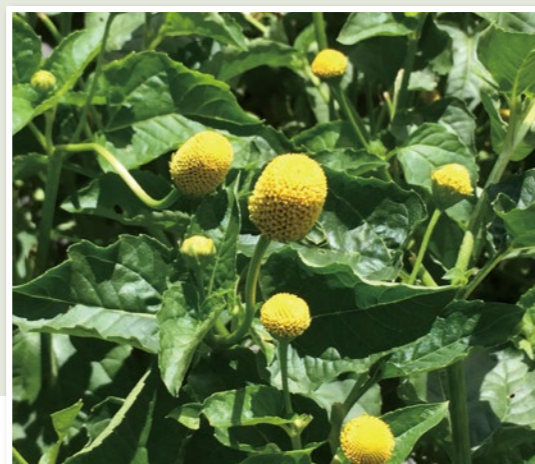
Takasago sources key naturals through a partnership with local sources.

Jambu, Patchouli Indonesia

For 30 years, Takasago had a facility in Indonesia dedicated to the identification and supply of renewable natural resources, including the production of patchouli oil



for fragrances and Jambu extracts for flavors. Takasago guarantees the livelihoods of the community by planning and pre-financing crop production, and we improve the yield and quality of the harvest by providing training.



Vanilla Madagascar

Takasago partners with the largest and most experienced vanilla producer in Madagascar. We can provide better market intelligence and deal with factors influencing supply, providing an early indication on crops.

Takasago established a long-term cooperative partnership to ensure our supply of vanilla is socially and environmentally sustainable, with the help of our local partner which grants us access to planters. We support local education,

sponsoring a PhD student program for local resource development. In addition, we also provide planters with technical guidance through a specifically designed evaluation grid. We practice pre-financing, which supports the local economy and stimulates planters to harvest beans when fully mature to provide optimum quality. Finally, we always ensure that we pay a fair price for all the types of beans we purchase.



Citrus Florida, USA

Among our diverse raw material portfolio, Takasago secures many agriculturally-derived materials to satisfy its global requirements. Although naturally-occurring essential oils provide desired complexity to flavor and fragrance compositions, these ingredients are adversely impacted by natural influences (climate, pest, disease), grower management practices, and industry economics. During the last decade, the citrus industry has experienced significant decline in fruit production throughout most of the world's citrus-growing regions. Takasago has proactively mitigated risk by partnering with growers and processors to ensure our critical raw material base remains viable

both short and long term. Our efforts target collaborative research partnerships to overcome Citrus Greening disease, provide support for growers to plant new citrus trees, and facilitate industry engagement to increase oil recovery efficiencies.

Takasago's approach towards sustainability reinforces our Corporate Philosophy of "Contributing to society based on technology." Our Responsible Citrus Sourcing Program continues to leverage all aspects of the industry (from nursery to grower to fruit processor) to ensure we execute responsible business, operational, and research practices that promote renewable and sustainable efforts toward citrus utilization.



Shiso Hokkaido, Japan

Takasago has been producing *Shiso* (perilla) Oil for more than 40 years through a partnership with an agricultural cooperative, involving local farmers in Hokkaido, Northern island of Japan.

The plant located in the Okhotsk region, used to produce Natural Menthol. This production declined as a result of

competition from other countries. However, the distillation technology and the facility are now fully utilized by Takasago to produce *Shiso* Oil.

Takasago is committed to maintaining our current good partnership with the local community and to continue to provide a product of exceptional quality.



Relationship

Society

Spreading the culture of fragrance

As a fragrance-manufacturer originated in Japan, Takasago believes it is our responsibility to spread and sustain a culture of fragrance in society. We store a comprehensive collection of historical materials and records regarding traditional fragrance culture in Japan as well as overseas, and provide various educational programs.

Perfumes are believed to date back as early as 5,000 years ago, and have developed as a distinctive form of aroma-related culture in the long history of human civilization. Takasago has collected numerous valuable artwork and materials related to fragrances created in both the East and West, so that we can share these heritages with even more people.

The Takasago Collection® features traditional Japanese incense burners, containers, and other implements used in Kodo, the art of incense. The Collection also includes incense burners from China, ancient Egyptian fragrance artefacts, Greek and Roman perfume bottles, etc. The collection contains approximately 1,000 items, some of which are on display in the Fragrance Gallery room at Takasago headquarters in Tokyo.

Takasago held its first Kodo Ceremony in summer 2016. This is a part of our educational programs, and many of

our employees, including those from overseas affiliates, participated in the ceremony to learn and appreciate the traditional art.

As a pioneer of fragrance technology in Japan, Takasago will continue optimizing our expertise and experience to support the culture of fragrance. We wish to pass this on to future generations in order to sustain the traditional role of fragrances in all cultures.



Takasago Collection Gallery at Tokyo Headquarters is open to public



Employees

Respect for Human Rights and Elimination of Discrimination

Takasago does not tolerate discrimination or harassment of any type, from any source.* In the EHS100 plan, we have enumerated four priority issues regarding our "Respect for Basic Human and Worker Rights": Child Labor, Respect for the Individual, Hiring of Disabled Workers, and Assessment of Suppliers. In line with this, we have implemented the following:

- Prohibition of child labor below the age of 16
- Human rights education
- Provide appropriate accommodations for persons with disabilities
- Provision of Takasago International Corporation's Suppliers' Code of Conduct to all our suppliers.

* Race, color, religion, national origin, ancestry, citizenship status, physical or mental disability, sex, pregnancy, age, marital or familial status, sexual orientation, veteran or military status or unfavorable military discharge, atypical hereditary cellular or blood trait, genetic information, arrest record or any other basis prohibited by regional laws.

Promoting Diversity

We continually strive 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 the percentage of female managers and foreign national employees while promoting the benefits of diversity

Career Development

Takasago is dedicated to career development for our employees. We provide the essential tools, training and motivation for our staff in order to expand and improve their skill set and overall effectiveness to grow both personally and professionally. In addition, Takasago has a transfer program that is generally applicable to every employee within the global group.

Employees' Health and Safety

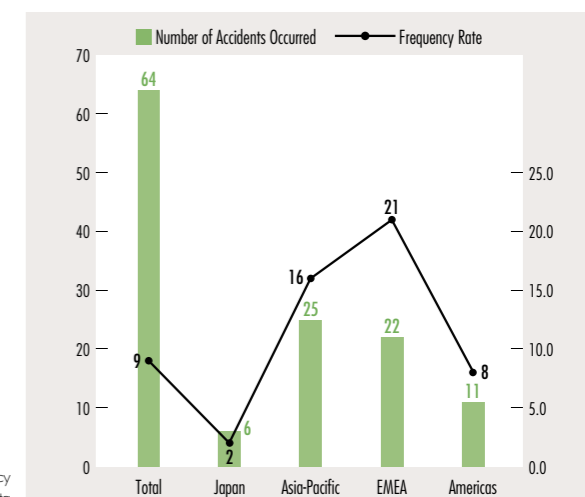
Takasago is dedicated to the promotion of employees' health and safety, both at work and at home, through a combination of information and training. This commitment is rooted in the long history of our company and reflects our traditional values that emphasize the importance of every individual in our entire organization. On the job, Takasago provides all required training and equipment to ensure the continued health and safety of our workers.

Frequency Rate (LTIF: Lost Time Injury Frequency)
 = Number of injuries resulting in more than 1 lost day ÷ Total working hours × 1,000,000
 As the definition is different and direct comparison cannot be made with other countries, the frequency rate is adopted. Rates include all Takasago employees and temporary employees. The scope of data is manufacturing sites except a traffic accident.

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 of our products and operations on a global basis.

We believe this program helps optimize local talent globally, and we fully support individuals who challenge the status quo. In 2015, we created an "Internal Job Posting System", which allows individuals to apply for jobs at any Takasago location to further promote our transfer program. It began with limited scope and is being expanded to allow for optimal reach across all affiliates.

Global Workplace injury Statistics



Data for FY2016

Environmental Performance Data

Japan

Item	Unit	Site									
		Takasago International Corporation				Takasago Chemical	Takasago Spice	Takasago Coffee	Takasago Food Products	Nankaikako	Takasago West Japan
		Hiratsuka Factory	Iwata Factory	Kashima Factory	R&D	Kakegawa Factory	Hadano Factory	Iwata Factory			
CO ₂ emission	t-CO ₂	995	20,242	3,460	2,208	2,318	726	2,049	4,928	4,336	3,963
Electricity consumed	MWh	1,467	17,987	5,581	3,491	2,618	924	1,385	4,352	2,420	5,133
Amount of industrial waste	t	137	5,660	992	91	2,697	57	2,269	8,051	2,507	392
Amount of BOD	t	0.03	2.31	0.56	NA ^{*1}	2.06	NA	3.43	0.36	NA	0.14
Amount of COD	t	0.18	1.65	2.79	NA	3.75	NA	13.18	2.94	7.26	0.73
Water withdrawal	m ³	9,237	1,718,635	92,762	25,974	412,239	9,766	45,120	124,065	518,098	29,935

Item	Unit	Office													
		Takasago International Corporation								Takasago Aromas	Koei Sangyo	Kowa Sangyo	Takasago Spice	Takasago Chemical	Takasago Coffee
		HQ	Yamanaka Training Institute	Osaka Branch	Nagoya Branch	Fukuoka Branch	Shizuoka Branch	Tokushima Liaison Office							
CO ₂ emission	t-CO ₂	258	12	42	23	31	9	9	2	202	1	1	2	2	
Electricity consumed	MWh	412	10	47	30	30	14	9	5	400	2	2	3	4	

Asia-Pacific

Item	Unit	Site				
		Takasago International (Singapore)	PT. Takasago Indonesia	Shanghai Takasago-Union Fragrances & Flavors Putong Factory	Takasago International (Guangzhou)	Takasago International (India)
		CO ₂ emission	t-CO ₂	4,888	306	911
Electricity consumed	MWh	8,142	406	931	1,995	133
Amount of industrial waste	t	105	21	184	125	6
Amount of BOD	t	38.11	NA	0.34	0.05	NA
Amount of COD	t	52.83	NA	1.14	0.55	NA
Water withdrawal	m ³	60,030	558	12,914	27,077	1,489

Item	Unit	Office								
		Takasago International (Singapore)			Shanghai Takasago-Union Fragrances & Flavors		PT. Takasago International Indonesia	Takasago International (Philippines)	Takasago Import and Export (Thailand)	Takasago International Corporation (Korea)
		Vietnam Office	Australia Office	Myanmar Office	Main Office	Guangzhou Office				
CO ₂ emission	t-CO ₂	15	16	2	539	2	125	23	76	43
Electricity consumed	MWh	9	11	3	608	3	92	26	65	8

EMEA ^{*2}

Item	Unit	Site				
		Takasago Europe Perfumery Laboratory Factory	Takasago Europe GmbH	Takasago International Chemicals (Europe)	Takasago Madagascar	Takasago Morocco
CO ₂ emission	t-CO ₂	72	2,818	3,498	26	19
Electricity consumed	MWh	933	2,734	4,807	45	14
Amount of industrial waste	t	248	121	2,355	3	NA
Amount of BOD	t	NA	48.48	7.01	NA	NA
Amount of COD	t	NA	71.53	22.07	NA	NA
Water withdrawal	m ³	3,877	25,697	56,938	1,610	314

Item	Unit	Office						
		Takasago Europe Perfumery Laboratory Head Office	Takasago International (Italia)	Takasago International (España)	Takasago (U.K.)	Takasago International Corporation South Africa	Takasago Europe GmbH Moscow Office	Takasago International Turkey
CO ₂ emission	t-CO ₂	94	11	13	8	7	NA	5
Electricity consumed	MWh	445	9	5	6	6	NA	4

Americas

Item	Unit	Site			
		Takasago International Corporation (U.S.A)		Takasago De Mexico	Takasago Fragrancias E Aromas
		Fragrance Factory	Flavor Factory		
CO ₂ emission	t-CO ₂	1,186	3,726	649	176
Electricity consumed	MWh	1,429	3,937	824	955
Amount of industrial waste	t	235	344	85	38
Amount of BOD	t	0.68	NA	20.50	0.26
Amount of COD	t	NA	NA	50.44	0.53
Water withdrawal	m ³	2,647	42,928	5,782	7,023

Item	Unit	Office		
		Takasago International Corporation (U.S.A)		
		Head Office	NY Gallery	Midwest Sales Office
CO ₂ emission	t-CO ₂	3,121	37	10
Electricity consumed	MWh	3,883	71	11

*1 NA: Not Available *2 EMEA: Europe, the Middle East, and Africa

Takasago Collection®



Takasago Collection Gallery at Tokyo Headquarters

Opening times: Monday - Friday, 10am - 5pm
(Admission ends 30 minutes before closing time.)
Closed: Saturday, Sunday, Public Holidays
December 27 - January 5

