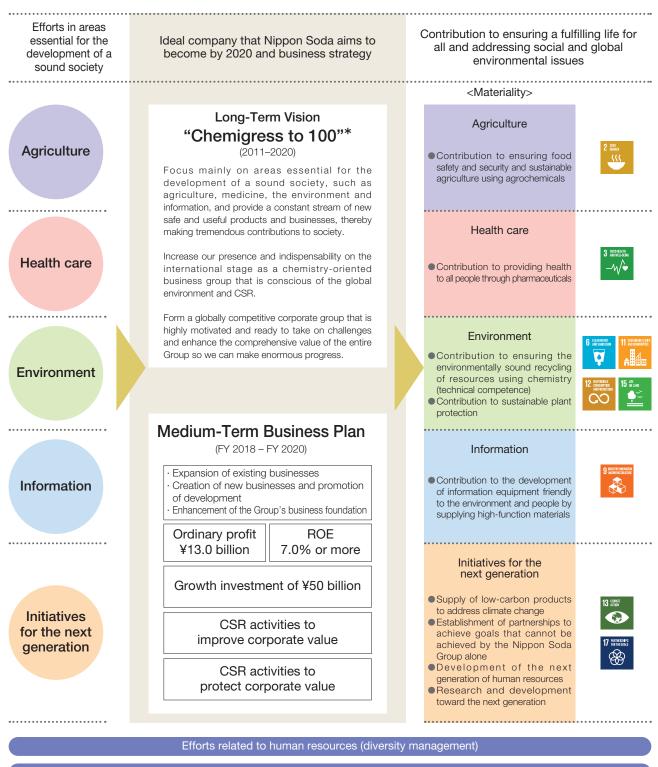
Value Creation of the Nippon Soda Group

Value Creation of the Nippon Soda Group

Value creation of the Nippon Soda Group

The Nippon Soda Group further develops CSR management and, as a chemical group, creates new value through the power of chemistry and contributes to achieving a sustainable society through products.



Corporate governance (business management)

(*) "Chemigress" in "Chemigress to 100" was coined by combining the words "chemical" and "progress." "Chemigress to 100" conveys our determination to contribute to creating a sound society through the chemistry-oriented businesses of our Group toward the 100th anniversary.

Business and SDGs of the Nippon Soda Group

From September 25 to 27, 2015, during a milestone year for the United Nation's development agendas, the United Nations Sustainable Development Summit was held at the UN headquarters in New York. The summit was attended by more than 150 heads of state of member nations and resulted in the adoption of the official document, Transforming our World: The 2030 Agenda for Sustainable Development. This agenda includes declarations and goals, stated as action plans for the prosperity of people and the Earth. The newly established goals, which succeed the Millennium Development Goals (MDGs), are called Sustainable Development Goals (SDGs) and are comprised of 17 goals and 169 targets.

As part of our efforts to conduct "CSR activities to improve the corporate value," the Nippon Soda Group states in the basic CSR policy that the company will make contributions through business toward resolving social issues to help achieve the development of a sustainable society. In line with the CSR policy, the Nippon Soda Group is addressing efforts to meet the Sustainable Development Goals (SDGs) that allow us to make such contributions through our products. One company cannot tackle all of the SDGs alone, but if many different companies throughout the world do what they can toward resolving these issues, we believe that the combined efforts will result in the realization of a sustainable society.



Nippon Soda Group's CSR and materiality

Materiality identification

The Nippon Soda Group focuses its business mainly on the domains of agriculture, medicine, the environment and information, which are essential for the sound development of society, and contributes to society's development by providing a constant and stable stream of new useful products and businesses. For the purpose of conducting business that is useful for developing a sustainable society, we have identified the four aforementioned domains (agriculture, medicine, the environment and information) as medium- and long-term areas of materiality for CSR activities to improve the corporate value. We have also identified materiality issues and KPIs in the four CSR domains that are defined in the CSR basic policy.

Materiality Identification Process

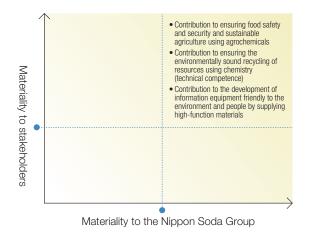
Step 1

Identification and prioritization

- 1 The material issue for the Nippon Soda Group in CSR activities to protect corporate value is defined as continuous efforts to minimize impact on people and the environment, with a recognition that, as a chemical manufacturer, we deal with a wide variety of chemicals.
- 2 Material issues for the Nippon Soda Group in CSR activities to improve the corporate value were identified in line with the GRI G4 guidelines, the ISO 26000 guidelines and SDGs. The materiality assessment in the prioritization step was conducted using a two-dimensional plane with the materiality to stakeholders and the materiality to the Nippon Soda Group as the vertical and horizontal axes, respectively. Issues ranked high both on the vertical and horizontal axes were assessed as high priority.
- 8 Reference standards for prioritization Materiality to stakeholders
- International frameworks, such as the GRI G4 guidelines
- The 2030 Agenda for Sustainable Development, Sustainable Development Goals Fact Sheet, SDGs
- Third-party opinions

Materiality to the Nippon Soda Group

- Management philosophy
- Conformity with Nippon Soda's medium- and long-term business plan
- Opportunities and risks in order to ensure continuous development



Validation and identification through expert dialogue Step 2

1 We held a dialogue with experts to determine if there were any discrepancies between the materiality issues we identified and those that we should consider and recognize in the domains of agriculture, health care1, the environment and information.

1. For the health care
domain, materiality
issues were identified
in 2017.

(December 8, 2015) ▶ For details, please refer to the CSR Report 2016 on pages 13 and 14. (December 9, 2016) ▶ For details, please refer to the CSR Report 2017 on pages 25 through 28. (December 8, 2017) ▶ For details, please refer to the CSR Report 2018 on page 10 and the online version. (December 12, 2018) ▶ For details, please refer to CSR Report 2019 on pages 9 and 10, and the online version.

> Stakeholder dialogue 🎵

Major opinions (What should be considered, their expectations, etc.)

- Every company has its own approach to materiality analysis, some start with social issues and some with their medium-term/long-term vision.
- Many companies select KPIs in the next step.
- I think you should expand the scope of issues to be addressed in the areas of the environment and information to make it as wide as the scope of issues associated with agrochemicals.
- I was convinced that Nippon Soda is sincerely addressing this issue.
- 2 After the dialogue, we made corrections based on participants' opinions and identified material issues that the Nippon Soda Group should address, which have been approved by experts.

Step 3Reporting to and approval from the Nippon Soda Group's executivesNovember 20, 2015 A report of the experts dialogue in Step 2 was provided to the Corporate Social

Responsibility Administration Meeting.February 2016Approval was obtained from the Management Council and the Board of Directors.

May 2016 A report was provided to the Corporate Social Responsibility Administration Meeting.

	Step 4	Implementation of PDCA		
	Plan ► Pla	n theme-specific materiality workshops (discussion on developing KPIs: at the beginning of FY 2017)		
	Do ▶ Organize workshops (FY 2017 first half); Develop KPIs (FY 2017 second half)			
Check Assess KPIs (at the end of FY 2017) and publish assessment results (at the beginning of FY 2018)				
	Act Rev	view (conducted annually since December 2016)		

Materiality and KPIs within the Four Domains of CSR Defined in the CSR Basic Policies.

J	Domain	Materiality		KPI
	Agriculture	Contribution to ensuring food safety and security and sustainable agriculture using agrochemicals (1) Increase in food and feed production (2) Diversification of crop protection	🛄 p.11	(1) Seminar hosting situation (2) Situation of initiatives
	Health care	(3)Improvement of user safety (safety of chemicals and products) ¹ Contribution to providing health to all people through pharmaceuticals (1) Easy-to-swallow, effective medicines through NISSO HPC	🛄 p.12	(3) Situation of initiatives (1) Situation of contributions
	Environment	Contribution to ensuring the environmentally sound recycling of resources using chemistry (technical competence) (1) Steady supply of water resources (2) Reduction of environmental impact caused by waste Contribution to sustainable plant protection	1 p.13	(1) The amount of supplied water (2) Situation of contribution
		(1) Protection of precious trees such as pines from harmful insects		(1) Situation of contribution
	Information	Contribution to the development of information equipment friendly to the environment and people by supplying high-function materials (1) Supply of high-function materials friendly to the environment and people	🛄 p.14	(1) Number of portable communicatic terminals using our products
	Initiatives for the next	Contribution to addressing climate change by supplying low-carbon products (1) Contribution to achieving a low-carbon society by supplying low-carbon products Achieving goals through partnerships that cannot be done by		(1) Change in the number of low-carbon products Situation of progress Situation of contribution
	generation	the Nippon Soda Group alone (1) Sharing of the principle of goals and cooperation with other companies and organizations Development of the next generation of human resources (1) An educational system to maintain safety standards in the future Research and development toward the next generation (1) Research and development that enable the continuing development of human society and the global environment as well as lead to business		 (1) Situation of progress (1) Results of education (1) Situation of research
	Environmental protection	(1) Environmental Issues (2) Energy i. Energy use per unit of production ii. Energy use per unit of transportation (3) Reduction in greenhouse gas emissions (4) Waste i. Amount of final disposal as landfill ii. Zero emissions (5) Emissions of harmful substances into the atmosphere	- î p.15 -	 Number of legal violations Amount of consumption Per unit of production Per unit of transportation Amount of emissions Amount of waste to landfill Zero emissions ratio
		(6) Reduction of impact on biodiversity and ecosystems	-	(6) Situation of initiatives
Ī	Process safety and	(1) Major accidents at facilities	– 🛄 p.16 -	(1) Number of accidents
	disaster prevention/BCP Occupational safety and health	 (2) Maintenance and improvement of a business continuity plan (BCP) (1) Occupational accidents An absence from work/no absence (2) Health promotion 	p.17 -	 (2) Situation of BCP improvement (1) Number of occupational accidents (2) Number of incidences of
	Distribution safety and quality assurance	(1) Distribution-related complaints (2) Product-related complaints	- 🛄 p.18 -	personal injury and illness (1) Number of distribution-related complaints (2) Number of product-related complaints
-	Chemicals and product safety	(1) Compliance with chemical-related laws and regulations	🛄 p.19	(1) Number of legal violations
	Together with our customers (Consumer issues)	(1) Consumer issues	11 p.20	(1) Level of understanding of issu
ľ	Together with our	(1) Acceptance of diversity		(1) Quantitative value for diversity
	employees (Human rights and labor practices)	(2) Creation of a rewarding workplace that employees can be proud of	1 p.21	(2) Results of survey on employee satisfaction with their workplace
	Together with our business partners (Fair operating practices)	(1) Business partners	🛄 p. 22	(1) Situation on compliance with code of conduct
	Together with our shareholders	(1) Shareholders	🛄 p. 23	(1) Situation of dialogues
1	Together with our local communities	(1) Local gatherings, community involvement		 (1) Number of dialogues' involve- ment and details
	(Communities (Community involvement and development, social dialogue)	(2) Legal and other requirements(3) Creation of more opportunities for stakeholder engagement	1 p.24	
	Corporate gover- nance	(1) System	🛄 p. 25	(1) Governance structure
	Compliance	(1) Legal compliance	🛄 p. 26	(1) Violations of laws and regulatio

1. Including efforts related to chemicals and product safety among "CSR activities to protect corporate value"

Materiality essential to sustainable development

A stakeholder dialogue was held with experts from outside the Nippon Soda Group on the theme of "CSR activities to improve corporate value," which aim to increase the positive effect on society, for the purpose of discussing materiality for a chemical company that creates innovative products useful in achieving a sustainable society.



Participants <Experts from outside the Nippon Soda Group>

Naomi Yamazaki Representative Director, ESG Network of Shareholders & Companies Administration Manager, Institutional Investors Collective Engagement Forum

<Nippon Soda> Noriyuki Haketa, Director and Senior Executive Managing Officer Supervision of the Corporate Social Responsibility Department

Masahito Ikeda, Executive Officer General Manager of the Corporate Social Responsibility Department

Masahiro Arichika, Corporate Communications Section, General Affairs Group, General Affairs & Personnel Department

Note: The position and job titles of the participants are those effective as of December 2018. Note: Titles omitted in the text



Masahito Ikeda, Ph.D. Nippon Soda





Masahiro Arichika Nippon Soda

History of the Nippon Soda Group (RC and CSR)

August 1998	Declaration on Responsible Care (RC)
April 2012	Declaration on Corporate Social Responsibility (CSR)
April 2014	Adoption of CSR practices in eight Group companies in Japan
November 2015	1st Stakeholder Dialogue: Material issues were identified and relevant efforts were started.
December 2016	2nd Stakeholder Dialogue
December 2017	3rd Stakeholder Dialogue
December 2018	4th Stakeholder Dialogue

Business activities associated with CSR materiality to improve the corporate value

- Business activities associated with CSR materiality to improve corporate value Agriculture domain
 - Initiatives for achieving sustainable agriculture: smart agriculture, drones, seed treatment, microbial pesticides

Medicine domain

- Healthy life supported by medicine: small easy-to-swallow tablets, longer-lasting effects, preparation of tablets by 3D printing

Information domain

- Potential of high-performance materials: environmentally friendly high-performance materials, copper-clad laminates for next-generation communications, microfabrication of photoresist materials

Environment domain

- Achievement of environmentally sound recycling: Sketoile and toilet gel for disaster use
- Theme
 Environmental and social issues that significantly affect the sustainability of business models

What kind of long-term impact will environmental and social issues have on business activities?

- Understand social issues from a global perspective, such as decline in the working population, aging population and declining birth rates in some regions, coupled with population explosion on a global scale.
- In addition to contributions to securing food sources (stable food yields) using agrochemicals, we are considering promoting innovation by taking advantage of the strengths of our existing businesses through promoting research and development covering the entire agricultural value chain. We understand there are high expectations from users for labor saving and safe agriculture.

For example, we believe that a new seed treatment technique to coat seeds can contribute not only to reducing farm labor but also reducing the environmental impact of agrochemicals. We will consider partnerships with other companies to further expand the application of the technique globally.

[Background]

Environmental and social issues these days directly affect business management. In response, industries and sectors have seen a paradigm shift in their business models. In such a business environment, it is important for companies to correctly identify issues critical to them and to implement long-term strategies for resilience designed to respond to change in 10, 20, and 30 years' time.

Potential "game change" and transformation

If a "game change" occurs, how would business activities need to change?

- The regional characteristics of agriculture will significantly change due to climate change. The types of agrochemicals may also need to change, which can provide new business opportunities. In 2015, we opened the Sarabetsu Experiment Field in Sarabetsu Village in Hokkaido by taking into account environmental issues, where researchers have started research on the influence of regional climate and the new potential of agrochemicals.
- In the domains of information and health care in the chemicals business, we will continue to serve as a material manufacturer with emphasis on addressing issues to respond to market demand with resilience. For example, as a world-leading company in terms of technology to make active ingredients of pharmaceutical excipients work, we will create new markets by "multiplying" this proprietary technology through social change.

[Background]

There has been a move to incorporate the advancement of artificial inteligence (AI) and the Internet of Things (IoT), global environmental issues, and solutions for population issues into strategies for sustainable growth. There has already been a significant change in the automotive industry. In other markets too, a "game changing event" that nobody can predict could be triggered by any new development, such as a change in the distribution channel or the entry of a new player. Investors are carefully observing what kind of game changes companies are anticipating and responding to.

Theme 3

Developing and passing on our corporate philosophy and culture, and improving corporate ethics

How have we contributed to social sustainability? How can we achieve a sustainable society?

- Our corporate culture has placed primary emphasis on "safety and quality" for many years. This culture enables us to develop products that fulfill the dreams of the next generation and achieve sustainable growth through the power of chemistry.
- Both companies and employees are citizens. It is essential for companies to be generally accepted in order to ensure their sustainability. In this respect, we have placed emphasis on ensuring compliance.
- We will further ensure corporate ethics are observed and will take a backcasting approach to ensuring wellfunctioning corporate governance that responds to the change of the times.

[Background]

To achieve the sustainable growth of a company, changes in governance are required. Investors are carefully judging the effectiveness of the company's governance, with emphasis not only on the governance system but also on its function. The company is required to make strategic decisions more boldly and promptly than ever. To strengthen corporate governance, it should be aligned with corporate ethics. It is also important that all employees are well informed of the corporate ethics policy.

Expert's viewpoint

Naomi Yamazaki

Representative Director, ESG Network of Shareholders & Companies
 Administration Manager, Institutional Investors Collective Engagement Forum

The Nippon Soda Group undertakes business activities in compliance with corporate ethics. I would like to focus my attention on how the Group understands long-term social changes and what approach it takes to achieve a sustainable society.

- The Group tries to understand the impact of environmental and social issues on business activities from the perspective of opportunities and risks, and not only establishes a system but also creates an organization that functions well.
- Significant changes are awaiting agrochemicals. The Group is undertaking transformation efforts in labor saving and streamlining in a way unique to an agrochemical manufacturer, with an eye on a potential "game change" in social issues.
- Nippon Soda's corporate culture with primary emphasis on safety and quality has served as a source for sustainable growth. Corporate ethics are observed by all of its companies, including overseas group companies.
- To steadily promote materiality and risk management, the Company is making well-designed efforts to improve the effectiveness of its corporate governance.