## Value Creation Process

Supporting a Sustainable Society with Specialty Products and Services

## Medium- to Long-**Term Vision**

Achieving growth by supporting a sustainable society with specialty products and services

## Inputs

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#### **Financial Capital**

Stable financial base

### Intellectual Capital

• Unique R&D system with high ratio of R&D expenses to net sales

#### **Human Capital**

- People who can address the needs and challenges of customers and society
- Free and open-minded corporate culture

### Social and **Relationship Capital**

- Partnerships with suppliers and business partners
- Industry-academia collaboration
- Relationships with communities

### **Manufactured Capital**

- Unique manufacturing technologies
- Production facilities worldwide

### **Natural Capital**

- Natural materials
- Energy and water resources

Natural materials Research and development Communication with customers and **Procurement** industry-academia Research and collaboration development departments for Procurement each product line departments Identify Customers CSR and procurement consumers Sales Core technologies departments Production acquired in departments natural vitamin A production Quality assurance system DNA Distribution, marketing, and sales Philosophy Pages 10-11

**Business Model** 

Sustainable Value Chain

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## **Outputs**

**Providing Specialty Products** and Services

### Food

Specialty: Making the most of materials

- Seaweed
- Extracts and seasonings
- Salad dressings

## **Improving Agents**

Specialty: Resolving issues

- Food-improving agents
- Chemical-improving agents

### Healthcare

Specialty: Enhancing quality of life (QOL)

- Vitamins
- Functional food product ingredients
- Microcapsules

### Outcomes

### Customers

 Making consumers healthy and happy at the dining table

#### Shareholders and Investors

- Sustainable growth and shareholder returns
- Timely and appropriate information disclosure

### **Business Partners**

- Sustainable profits for both parties
- Strong partnerships that help resolve social issues

### **Employees**

• Providing a healthy, energetic work environment

### Communities, Government Organizations, and Research Institutes

• Contributing to the revitalization of regions and communities

#### Environment

 Contributing to the creation of a decarbonized, recyclingoriented society

## $\uparrow \uparrow \uparrow \uparrow$

## **External Environment**

#### Global

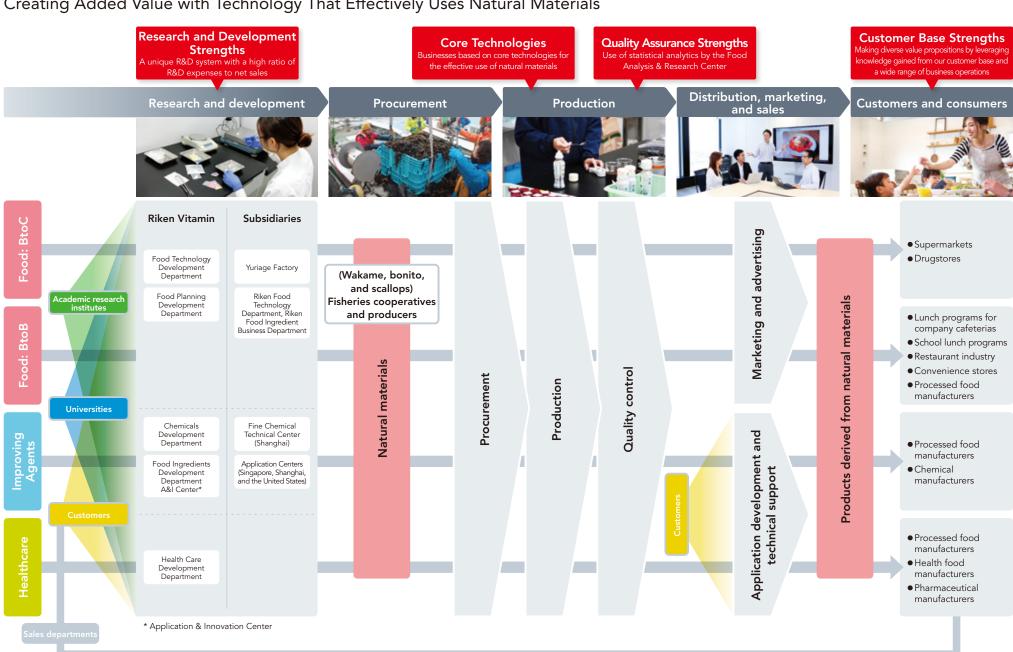
- Climate change
- Emergence of geopolitical risks
- Demographic changes Labor and workforce shortages
  - More diverse dietary preferences
  - Growing awareness of safety, reliability, and health

Material Issues Page 9

Production

## Value Chain

## Creating Added Value with Technology That Effectively Uses Natural Materials



# Enhancing Our Value Chain

Main types of capital for each activity and initiatives to further enhance them

	Research and development	Procurement	Production	Distribution, marketing, and sales	Customers and consumers
Capital Relevant to Our Strengths	Research and development strengths	Distribution channels for natural materials	Technologies that use natural materials	Ability to provide solutions	Broad customer base Household food brands
	Financial Capital	Financial Capital	Financial Capital	Financial Capital	
	Intellectual Capital	Intellectual Capital	Intellectual Capital	Intellectual Capital	Intellectual Capital
	Human Capital			Human Capital	
	Social and Relationship Capital	Social and Relationship Capital	Social and Relationship Capital	Social and Relationship Capital	Social and Relationship Capital
			Manufactured Capital		Manufactured Capital
		Natural Capital	Natural Capital		
Overview	With roots in RIKEN (the Institute of Physical and Chemical Research), we focus on research and development based on our Corporate Philosophy of "contributing to people's health and nutrition with technologies and products that make effective use of natural materials, thereby contributing to society."	We have a procurement network for natural materials, including marine resources. Our knowledge of natural materials and our procurement network enable us to operate in a wide range of businesses.	Our core technologies that originate in our initial vitamin A business involve extraction, refining, and concentration. Our molecular distillation technology, which is a concentration technology, has contributed significantly to the diversification of our business portfolio.	In the improving agents business, we communicate with a wide range of customers to gain an understanding of their issues and needs, and then provide proposal-based sales and customized product development.	Our products are widely used in three markets: food, improving agents, and healthcare. As a result, we have an extensive customer base and are able to make a variety of proposals to our customers.
Medium-Term Management Plan	Further expand presence in domestic market and enter new domains		Accelerate expansion in Asia and North America	Further expand presence in domestic market and enter new domains Accelerate expansion in Asia and North America	
Measures	Promote sustainable management				
Initiatives to Enhance Our Value Chain	Unique R&D organization  Accumulate knowledge in R&D departments for each product line  Share knowledge within the Group through research presentations  Ensure collaboration among the A&I Center and overseas application centers  High ratio of R&D expenses to net sales:  Ratio of R&D expenses to net sales: 3.6%  Tokyo Stock Exchange, Prime Market (Food Sector) Average for 67 companies excluding Riken Vitamin: Approximately 1.0% Note: Data for FY2023	Initiatives for stable procurement  Supporting large-scale wakame aquaculture in cooperation with a fishing company and a fisheries cooperative  Stable procurement of seaweed by supplying seedlings  Strengthen cooperation with suppliers  Enhance internal organization  Promote collaboration with the procurement departments during development	Raise production capacity at overseas factories  • China: Construction of new food-improving agent factory (Scheduled to start operation in April 2025)  • United States: Expansion of pork extract manufacturing facilities (Scheduled to start operation in summer 2026)  Reorganize factories in Japan  • Tokyo Factory: Construction of a new vitamin-mix wing (Scheduled to start operation in fall 2025)*  * Entire project scheduled for completion in FY2027	Provide a wide array of solutions  • Enhance ability to make proposals Develop sales personnel with broad product knowledge through interdepartmental personnel transfers  • Expand range of proposals Two approaches for proposals: Reduction of loss during production and reduction of final product disposal  Enhance ability to make proposals outside Japan  • Opened Riken Vitamin USA Application Center in June 2024  Page 33	

# Increasing the Sustainability of Natural Capital

## Achieving a Sustainable Seaweed Industry





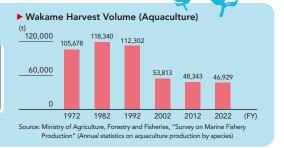


Seaweed has been eaten in Japan for a long time and is recognized as a healthy food, but research into its ecology has not progressed much and production volumes are declining. The Riken Vitamin Group is using the results of its research into wakame to ensure stable production at aquaculture sites. We will also expand the scope of our research to include mozuku and other types of seaweed to contribute to the revitalization of the seaweed industry.

Production of wakame has decreased in Japan over the past several years due to the aging of fishermen and changes in the marine environment. Stable procurement of raw materials has therefore become a key issue for the Group.

Rising sea temperatures

Aging of fishermen Intense workload during harvest season





## Initiatives at the Yuriage Factory

We are using cutting-edge technology and equipment to explore new possibilities for seaweed.

We opened the Yuriage Factory in 2017 and began producing wakame seedlings. By ensuring the stable production of high-quality seedlings, we can support improved productivity in seaweed farming. In addition, the death of juveniles in the

early stages of growth reduces production in wakame farming, so we are continuing to research the stress resistance of seedlings using the knowledge we have gained from optimizing seedling production conditions, and are beginning to obtain results that will support better farming techniques. Moreover, we are proposing the use of both early-maturing seedlings and late-maturing seedlings to lengthen the wakame harvesting period and lessen the workload during harvesting.





### Initiatives in the Ryori District of Ofunato City, **Iwate Prefecture**

We began supporting large-scale aquaculture during the 2020 harvesting season to ensure stable yields.

In Iwate Prefecture, the Group collaborates with a local fishing company and fisheries cooperative to support large-scale wakame aguaculture using idle aguaculture sites. We provide wakame seedlings and production expertise, then purchase all of the wakame that the fishing company produces. This enables the Group to procure a stable supply of raw materials. Our approach also enables the fishing company to generate stable income, and the fisheries cooperative to make effective use of idle aguaculture sites. The Group will continue to help revitalize the seaweed industry.



Riken Vitamir

Group



This video presents our initiatives to revitalize the seaweed industry.



### Riken Vitamin Group

Stable raw material procurement

### **Producers**

Improve production efficiency by lengthening work periods

Increase production volume by using high-quality seedlinas



#### Riken Vitamin Group

Ensuring stable production volume in response to environmental change

### Local fishing company

Ensuring a stable source of income

### Ryori Fisheries Cooperative

Decrease in idle aquaculture sites Reduced management costs

In addition to initiatives to ensure a stable supply of raw materials and provide services that address environmental changes such as climate change, we are also conducting research on blue carbon.\* This includes work with universities and research institutes to establish technologies for quantitatively evaluating CO<sub>2</sub> fixation by seaweed beds.

<sup>\*</sup> A term coined by the United Nations Environment Programme (UNEP) in 2009 that refers to the carbon stored in marine ecosystems such as seagrass beds, seaweed beds, wetlands, tidal flats, and mangrove forests.

## Value Creation Case Studies: Food Business

Extracts and Seasonings Where Nothing Goes to Waste

## Contributing to a Rich Dietary Life by Effectively **Employing Unused Resources**

We launched our food business when whaling was still common, producing extracts from whale meat\* by-products not used for food after processing. Simply disposing of those by-products would have incurred disposal costs and caused environmental issues, but Riken created new value by using them as a resource.

We will contribute to a sustainable and rich dietary life using the extraction, refining, concentration, and processing technologies we have developed since our founding, and by effectively employing unused resources.

\* We no longer produce whale meat extracts.



Takehiko Watanabe Executive Officer General Manager of Food Technology Development Department

### **Riken Vitamin's Specialties**

### Seasoning blending technologies

Our unique seasoning blending technologies that utilize naturally derived ingredients help to make consumers healthy and happy at the dining table.

### Development and procurement of original raw materials

Delicious taste derived from natural materials is our goal for products such as scallop extract that has the top share of its market in Japan and Sozairyoku Dashi made with the finest ingredients.

### Value the Food Business Delivers

### **Raw Material Development**

✓ Effective employment of unused resources

1959

Unused by-products after processing





Extracts

**Today** 

The broth produced when processing dried scallops



Scallop extract

The broth from processing dried bonito flakes and producing canned goods



Bonito extract

Pork and chicken bones from meat processing



### **Processing Technology Development**





In cooperation with a fisheries cooperative, we developed an extract refined from scallop broth.

### Extract production facilities



(Riken Food)



Guvmon Extracts (Oklahoma, USA)

## **Product Development**





When launched. became popular as a novel soup that went well with meals





resolve issues

**Delicious and helps** 





Contributes to the growing popularity of Asian food culture in North America

# Value Creation Case Studies: Improving Agent Business

Food-Improving Agents That Support Food Production Sustainability

## Contributing to Sustainability

In food production, sustainability means a steady, continuous supply of food

In recent years, the business environment for the raw materials used in processed foods has become increasingly unstable. Changes in the quality and composition of raw materials not only impact the final product, but also cause various issues related to manufacturing and lead to food loss. We resolve these issues by combining emulsifiers and other materials to develop food-improving agents that meet customer needs.

We will contribute to the sustainability of processed food production through our food-improving agents.



Takeshi Kitagawa Executive Officer General Manager of Food Ingredients Development Department

### **Riken Vitamin's Specialties**

### Providing solutions

We contribute to reducing food loss as well as energy and labor savings with solutions for improved productivity.

### Discovery of new issues

We discover new issues by looking at changes in society and information we gain in the process of providing value to customers in a wide range of fields.

## Value the Improving Agent Business Delivers

### Issues

Beverages

- Separation of milk ingredients and oils
- ✓ Burning occurs in the sterilizer during sterilization

Cakes

- Difficult to both stabilize manufacturing processes and ensure quality
- Texture changes over time

Food in general Raw material procurement is becoming unstable for reasons including climate change, diseases and pest infestations, and geopolitical issues.

## **Technology** Example of improved emulsion stability Beverage

Before improvement

Example: Egg shortage due

Maintains sponge cake volume

even with reduced egg content

to avian flu outbreak

Foaming

emulsifiers

Foaming

agents

Improving

agent

 Prevention of burning (scaling)





After

Before

After improvement

### Value Delivered Reduces food loss Long-lasting in both Reduced time and Improves productivity and taste water required to clean manufacturing **Delicious and helps** equipment resolve issues **Enables** industrial-scale production Saves energy and labor Maintains softness and flavor for a long time **Enables food** production with stable quality

## Value Creation Case Studies: Healthcare Business

Providing Vitamins Customized for Individual Needs

## Resolving Issues for Manufacturers and Supporting Human Health

In recent years, the market for food and beverages that contain vitamins has been expanding due to increased health awareness, due partly to the aging population and the COVID-19 pandemic. However, sourcing multiple types of vitamins and manufacturing the products that contain them are very costly and time-consuming for food and beverage manufacturers.

We help resolve these manufacturing-related issues by providing manufacturers with premixes that contain vitamins in the right balance. As such, we also indirectly contribute to human health by facilitating the addition of vitamins to a variety of products.



Katsura Murakami General Manager of Health Care Development Department, Health Care Unit

### **Riken Vitamin's Specialties**

### Vitamin production and formulation

We use the technologies we have developed since our founding to supply various vitamin products and vitamin premixes for general foods, health foods, and pharmaceuticals.

### Vitamin processing technology

We process fat-soluble vitamins into a powdered form that disperses easily in water, improving versatility and heat and oxidation stability.

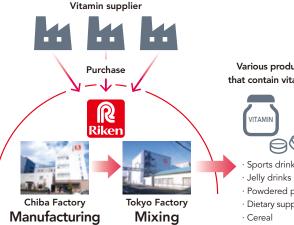
## Value the Healthcare Business Delivers

- ✓ Sourcing multiple types of vitamins individually incurs costs and requires weighing time.
- ✓ Different types have different physical properties, making handling complicated.
- ✓ The recommended intake amount is so small that using the entire purchased amount is challenging.
- ✓ Fat-soluble vitamins are unstable and have a viscous oily texture, making them difficult to handle.



Desire to take several supplements (vitamins) efficiently at one time Consumers

## **Technology**



Fat-soluble vitamins are processed into powders

that disperse easily in water.



Supplements

Liquid foods and other

## Value Delivered

health and uality of life

Improves nutritional balance

Improves productivity

Healthy and helps resolve issues

Easier to take

More opportunities

- Reduced management and procurement costs
- Reduced production requirements (reduced) weighing time and improved handling)
- Reduced weighing errors
- ⇒ Reduced personnel/labor requirements and losses due to operational errors
- Stable quality because each vitamin is uniformly dispersed and mixed

to take