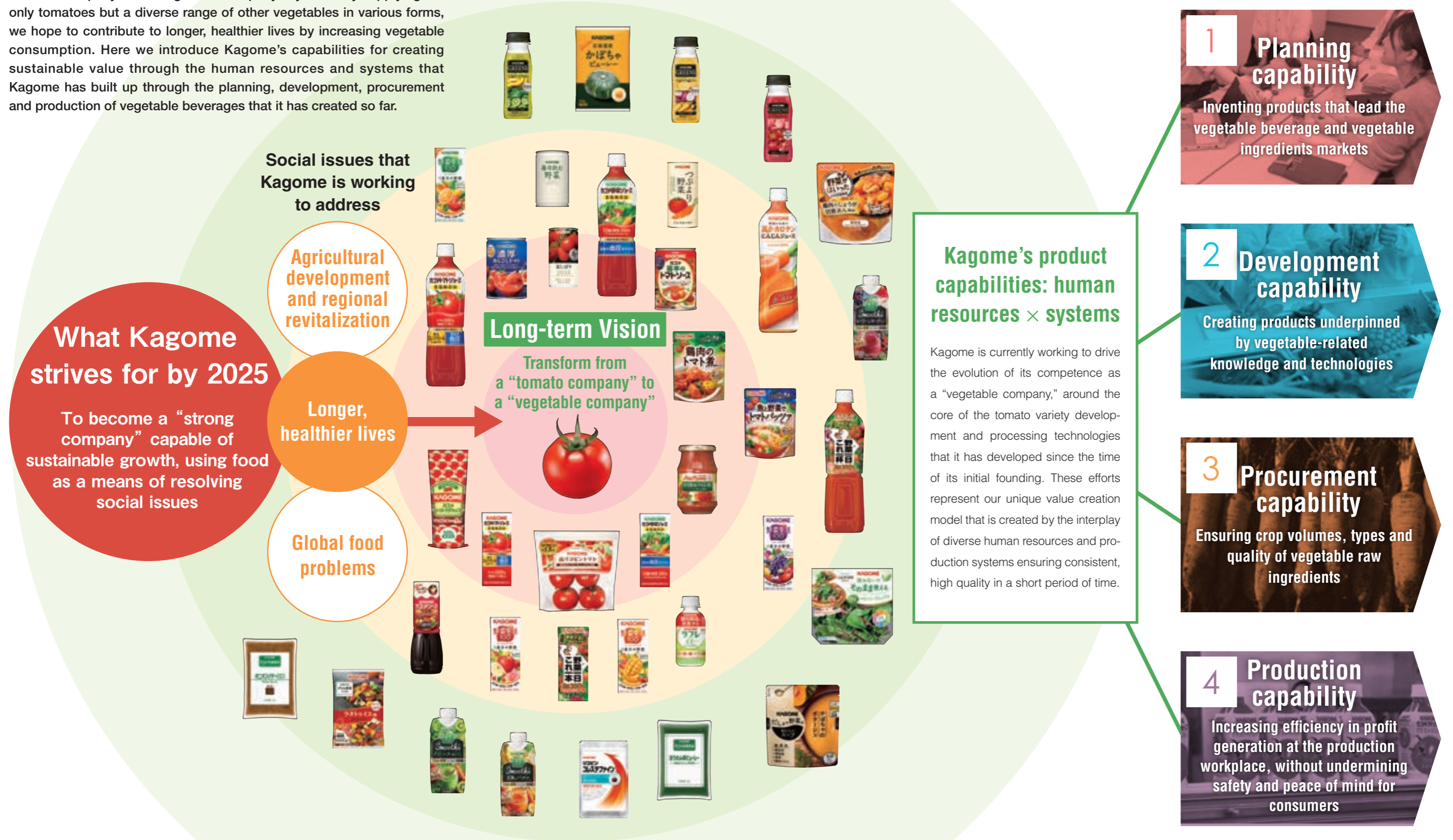


Kagome's Capabilities for Achieving Sustainable Growth

Kagome has established the long-term vision of transforming from a “tomato company” to a “vegetable company” by 2025. By supplying not only tomatoes but a diverse range of other vegetables in various forms, we hope to contribute to longer, healthier lives by increasing vegetable consumption. Here we introduce Kagome's capabilities for creating sustainable value through the human resources and systems that Kagome has built up through the planning, development, procurement and production of vegetable beverages that it has created so far.



Product planning creates demand by giving shape to dietary lifestyle needs

Kagome personnel
Risa Morimoto
 Beverage Planning Department,
 Marketing Division
 (joined Kagome in 2014)

Kagome personnel
Tatsuto Nishizaki
 Beverage Planning Department,
 Marketing Division
 (joined Kagome in 2006)



Kagome's products are made from vegetables, fruits and other natural ingredients. To make the most of these ingredients, we are committed to offering our products with the least amount of additives possible. Kagome's product planning stays true to this commitment, and invests energy into the creation of delicious products that fit dietary trends and the needs of consumers.

Planning Story

Yasai Seikatsu 100 Smoothie

A mix of vegetables and fruits, Yasai Seikatsu 100 Smoothie features natural sweetness and satisfying fullness with no sugar, sweeteners or thickeners.

A beverage born out of the need for a filling drink-snack

In July 2014, we released the first Yasai Seikatsu 100 Smoothie in a chilled cup package, as a new variation of the Yasai Seikatsu 100 series. At the time, other companies' cup beverages were performing strongly, and many consumers had needs for cup-type beverages with enough volume to satisfy their appetite when they were feeling a little hungry. Smoothies were also beginning to establish their popularity in the beverage market, and Kagome's

Kagome's key strengths in product planning

- Flexible and imaginative thinking of young employees, and sensitivity to catch market trends
- Planning capability to create "additive-free" products in collaboration with the development division

chilled cup beverage also received a positive response, particularly from young female consumers. In fall 2015, we launched an additional two items in the 330ml carton package with a cap to respond to demand for a beverage that could be sipped and consumed over several sittings in order to satisfy light hunger at the office, or when out elsewhere. Since 2015, Yasai Seikatsu 100 Smoothie has contributed to expanding Kagome's sales of vegetable beverages by creating new demand for healthy snacks between meals.

Creating a thick consistency, without using additives

The most distinctive feature of smoothies is their thick texture. Although thickeners are typically used to give liquids this kind of thick consistency, Kagome's smoothies contain no thickening agents whatsoever. "At Kagome, our uncompromising approach in creating our products is to make use of natural ingredients, and to avoid using additives wherever possible." (Nishizaki)

Yasai Seikatsu 100 Smoothie achieves the desired texture, consistency and drinking sensation for consumers through a complex blend of vegetables, fruits and plant-derived dietary fibers, based on insights gained through Kagome's past development of vegetable beverages.

"Because we are using natural ingredients, in some cases, our uncompromising attitude towards not using additives can place constraints on our product planning. For example, depending on the combination of raw ingredients used, the balance may be disrupted. However, working in collaboration with our development division—with its intimate knowledge of vegetables and fruits—and making inventive use of raw materials and manufacturing methods while referring to examples of blends accumulated so far enables us to achieve the creation of delicious additive-free products." (Morimoto)

Creating unconventional products by pursuing unique possibilities of smoothies

In addition to vegetables and fruits, Kagome's

smoothies make use of other raw ingredients currently drawing attention, including soy milk, almond milk, yogurt and amazake sweet and thick beverage.

"We come up with new product concepts by analyzing and researching where opportunities and issues exist through combination of market and specialty store trends and Kagome's resources, strengths and weaknesses." (Nishizaki)

Yasai Seikatsu 100 Smoothie has also attracted customers with no past experience of consuming vegetable drinks.

"I think people have felt that this product is in style and worth snacking to satisfy their hunger. Smoothies allow us to deliver a complex blend of ingredients and to take an aggressive approach by making relatively easy use of currently trendy ingredients." (Morimoto)

In contrast with long-selling products such as Kagome Tomato Juice and Yasai Seikatsu 100, Yasai Seikatsu 100 Smoothie uncovers new demand.

Creating the unique value of satisfying light hunger cravings

Yasai Seikatsu 100 Smoothie caters to the "healthy snacks" needs of working women and the demand for light meals as a substitute for salads and soups for lunch. In this way, it has created unique value in satisfying light hunger cravings, unlike existing vegetable beverages. Looking ahead, Kagome will seek to widen its base of demand by launching new products utilizing limited seasonal fruits and topical ingredients aimed at various generations of consumers, based on the keywords of "healthy snacking × leisurely sipping."

Development draws out the inherent flavor and possibilities of vegetables and gives shape to value supplied



Kagome personnel
Kazuki Naganawa
Product Development Department,
Solution Sales Division
(joined Kagome in 2009)

Kagome personnel
Masahiro Matsuzaki
Product Development Department,
Solution Sales Division (joined
Kagome in 2006)

The development division considers practical aspects of product concepts created by the product planning division, from the selection of raw ingredients and blending ratios to processing methods and containers. Products are then manufactured by the production division. The technique for utilizing diverse combinations of vegetables and fruits and unlocking the potential of these raw ingredients is a sustainable competitive advantage developed by Kagome for more than 100 years.

Development Story

GREENS



A premium smoothie that delivers the ingredients as they are, 100% additive-free, with no added preservatives, colorings or flavorings. The application of Kagome's proprietary "cold coarse-straining production method" draws out the color, fragrance and texture of vegetables and fruits, resulting in a beverage with three times the dietary fiber and six times the amount of vitamin C from the ingredients in comparison with conventional production methods. Keep refrigerated.

The challenge of developing a vegetable beverage that allows consumers to feel the "freshness" of processed food products

Launched in September 2015, GREENS was developed with the aim of delivering a vegetable beverage that allows consumers to feel the freshness of the ingredients and enjoy a drinking experience that feels almost like eating fresh vegetables; in response to the increase in consumer needs to consume fresh—almost "raw"—vegetables, in view of popular trends such as those of handmade smoothies and juice bars.

Kagome's key strengths in product development

- Knowledge of processing techniques and bacteria control methods accumulated through past development of beverage drinks
- Development of vegetable ingredients unique to Kagome
- Blending capability of ensuring a targeted flavor and viscosity development through the combination of multiple vegetables and fruits

"We began by considering how 'fresh' we could make our Tomato Juice and Yasai Seikatsu 100 products. However, this would not enable us to break away from the domain of our existing product lines. So we changed our way of thinking and decided to create a range of juice products that utilized the delicious flavor and texture of fresh vegetables as they are." (Matsuzaki)

Through discussions with other relevant departments, we concluded that the essential elements of "freshness" that consumers require from vegetables are bright color, fragrance and texture. One raw ingredient that we focused our attention on as being able to achieve this was *komatsuna* (Japanese mustard spinach), which is often used as an ingredient at fresh juice bars.

A drinking experience achieved through an intimate knowledge of the characteristics of vegetables

While putting juice into bottles and selling it as a storable product requires sterilization through the application of heat or other methods, *komatsuna* was not well suited to use as processed food, due to issues such as color change and odors released upon heating. The development team created numerous prototypes at a test plant and accumulated various insights as they searched for optimal conditions for sterilization by heating that would maintain the original color and fragrance and allow consumers to enjoy the freshness of the ingredient. They also worked to find ways of cutting that would give a texture similar to that of biting into fresh vegetables, and cut the solid vegetables in complex shapes. In order to show that this beverage was created using completely new production methods, the developers came up with the name "cold coarse-straining production method," and sought to clearly set the product apart from others by displaying this name on the packaging.

"When setting sterilization conditions, we referred to materials such as past research reports on the development of vegetable juices. We have also stored the knowledge and insights gained through the development of GREENS in database form. I think the fact that we have a system for utilizing the assets gained through these attempts in future developments is also one of Kagome's key advantages." (Matsuzaki)

Updating the product to match consumer needs

We are continually renewing and updating the GREENS range based on the results of numerous consumer surveys. In 2017, when converting all products in the series into smoothies based on the strong performance of the Yasai Seikatsu 100 Smoothie, we also reviewed and updated their choice of ingredients.

"Typically, banana puree is used to add viscosity and give smoothies their thick consistency. At Kagome, we use different ingredients to add viscosity to each product, in order to match the flavor of the main fruits contained in that product." (Naganawa)

We also used various creative ideas such as changing the method used to wash the containers before use, and in 2018 succeeded in extending the best before date for GREENS products from the initial period of around two weeks to three weeks. GREENS has now grown into a standard choice product in luxury supermarkets, department stores and mass-retailers throughout Japan.

Ingredient development to achieve Kagome's vision of becoming a "vegetable company"



Kagome has some products that use independently-developed ingredients. For example, a technique in which tomato juice is fractionated through centrifuga-

tion and separated into supernatant liquid and fibers is already utilized in the production of other products. This technique finds various applications, such as in using the supernatant to create smooth-textured products, or adding the fibers in order to give a natural viscosity to other products. We are currently also researching the fractionation of carrot juice, and are working on a proprietary technology for improving the flavor of onions. In this way, we are advancing the development of various ingredients for achieving our vision of becoming a "vegetable company."

Kohei Danzuka, Material Resource Development Department, Innovation Division (joined Kagome in 2008)

Procurement capability

created by human resources × systems

Procurement capability to secure a stable supply of over 600,000 tons of vegetables through systems such as dispersed cultivation areas and assessment of raw ingredients

Kagome is enhancing its global procurement network in order to ensure a stable supply of products produced by combining natural ingredients. We have created a system in cooperation with our overseas suppliers for producing tomatoes with the desired quality and flavor. For other vegetables and fruit juices, too, we ensure constant quality and flavor by using a combination of tomatoes from different cultivation areas.

How Kagome procures a stable supply of high-quality raw ingredients

Kagome has around 20 procurement locations in ten countries around the world for procuring tomatoes for processing. During the growing season, Kagome employees visit the plantations and factories to conduct quality checks and give guidance to ensure quality in cooperation with local suppliers.

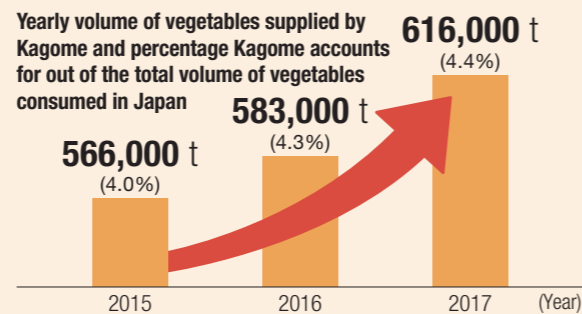
To handle climate change risks, which go hand in hand with reliance on natural farm-produced ingredients, we diversify cultivation areas into northern and southern hemispheres and acquire more new procurement locations. In doing so, we perform ingredient assessments and audits at new procurement locations, and only engage in business with suppliers that meet Kagome's required standards. Even for the same vegetables, flavor differs depending on the production region. Kagome quantifies how much vegetable from each production area can be used in each product. In this way, Kagome's Purchasing and Development Departments have built a system that enables the blend of ingredients to be adjusted to ensure the same flavor for each product.

Partial list of procured vegetables and products in which they are used

 <p>Tomatoes approx. 440,000 tons</p>	 <p>Carrots approx. 150,000 tons</p>
 <p>Onions approx. 6,000 tons</p>	 <p>Red peppers approx. 2,000 tons</p>

Supplying 616,000 tons of vegetables

The volume of vegetables supplied by Kagome is increasing year by year. In fiscal year 2017, this volume increased by 33,000 tons from the previous year, to 616,000 tons.



Source: Calculated based on the Food Balance Sheet (confirmed values for fiscal 2016 and estimates for fiscal 2017) compiled by the Ministry of Agriculture, Forestry and Fisheries (MAFF)
Volumes supplied by Kagome are calculated based on actual 2017 sales results.

Experience in factory work comes in useful for procurement duties

Many of Kagome's purchasing personnel have experience working in factories, and have valuable insights with regard to manufacturing and quality control. In our procurement assessments, we think from the perspective of factories that will be using the raw ingredients, and assess procured products in terms of their quality and costs as well as processability and manageability, based on our own experience. The procurement side and the factory side share the passion for safe, high-quality products. In addition to delivering assured quality ingredients, we are also enhancing our collaborative ties with suppliers and sharing information on needs and risks, in order to increase the quality of our products through the application of human resources × systems.

Kagome personnel



Yutaka Yoshida
Purchasing Department, Production & Purchasing Division
(joined Kagome in 2013)

Production capability

created by human resources × systems

Plants supplying products that offer safety and peace of mind, and working to reduce costs

Kagome's Nasu Plant manufactures beverages packaged in cans, PET plastic bottles and paper packs. In April 2019, the plant commenced operation of an aseptic plastic bottle filling line, expanding Kagome's production capacity to 1.3 times the previous level. This has enabled Kagome to enhance its supply network, reduce costs, and expand its range of product varieties.



What is aseptic filling?

The conventional hot packing sterilizes the bottle and cap by filling the bottle with heated liquid. In contrast with this, the aseptic filling method pasteurizes the liquid by heating it at a high temperature in a short time and cools it right after the pasteurization to fill the bottle at room temperature. All stages of the process from bottle molding to filling and capping are carried out under aseptic conditions.

Approaching Kagome's vision of becoming a "vegetable company" in the field of vegetable beverages with the introduction of Japan's first aseptic plastic bottle filling line

Kagome has installed a new production line at its Nasu Plant (its main beverage production plant) with a view to consolidating its domestic production locations for beverages bottled in plastic bottles. In this way, we are working to improve production capacity and reduce costs. Behind the introduction is our intention to absorb the impact of risks such as the soaring cost of overseas-produced raw materials and ingredients, and avoid the risk of fluctuating product demand to drive down the rate of food loss. In comparison with Kagome's previous filling method, this new aseptic filling line enables faster sterilization, and retains the original flavor and aroma of the ingredients. Because we mold our own plastic bottles, this method reduces the unit cost of containers significantly and helps to cut CO₂ emissions during transportation. Furthermore, this method has also made possible the production of products in the neutral pH range, unlike the traditional filling method. This has allowed us to ramp up our range of product varieties towards realizing our vision of a "vegetable company."

Potential benefits from the introduction of the aseptic bottle filling line

- (1) Contribution to business growth
 - ▶ Approx. 1.3 times higher production capacity
 - ▶ Expansion of range of product varieties
 - ▶ Enables production of beverage in the neutral pH range
- (2) Contribution to cost reduction
 - ▶ Lower costs through in-house plastic bottle production and workforce minimization

Reflecting cost-reducing measures and the needs of each department in the design process

In the introduction of the aseptic filling line, as project manager for the Production Department, I made repeated adjustments to increase production capacity, while at the same time incorporating the needs of the Product Development Department and various other departments. We also incorporated measures against personnel shortages into the design process, and minimized personnel requirements by installing the line with a highly work-efficient layout and monitoring systems. It was a valuable experience to be involved in such a large-scale project that was a focus of the company's hopes and expectations.

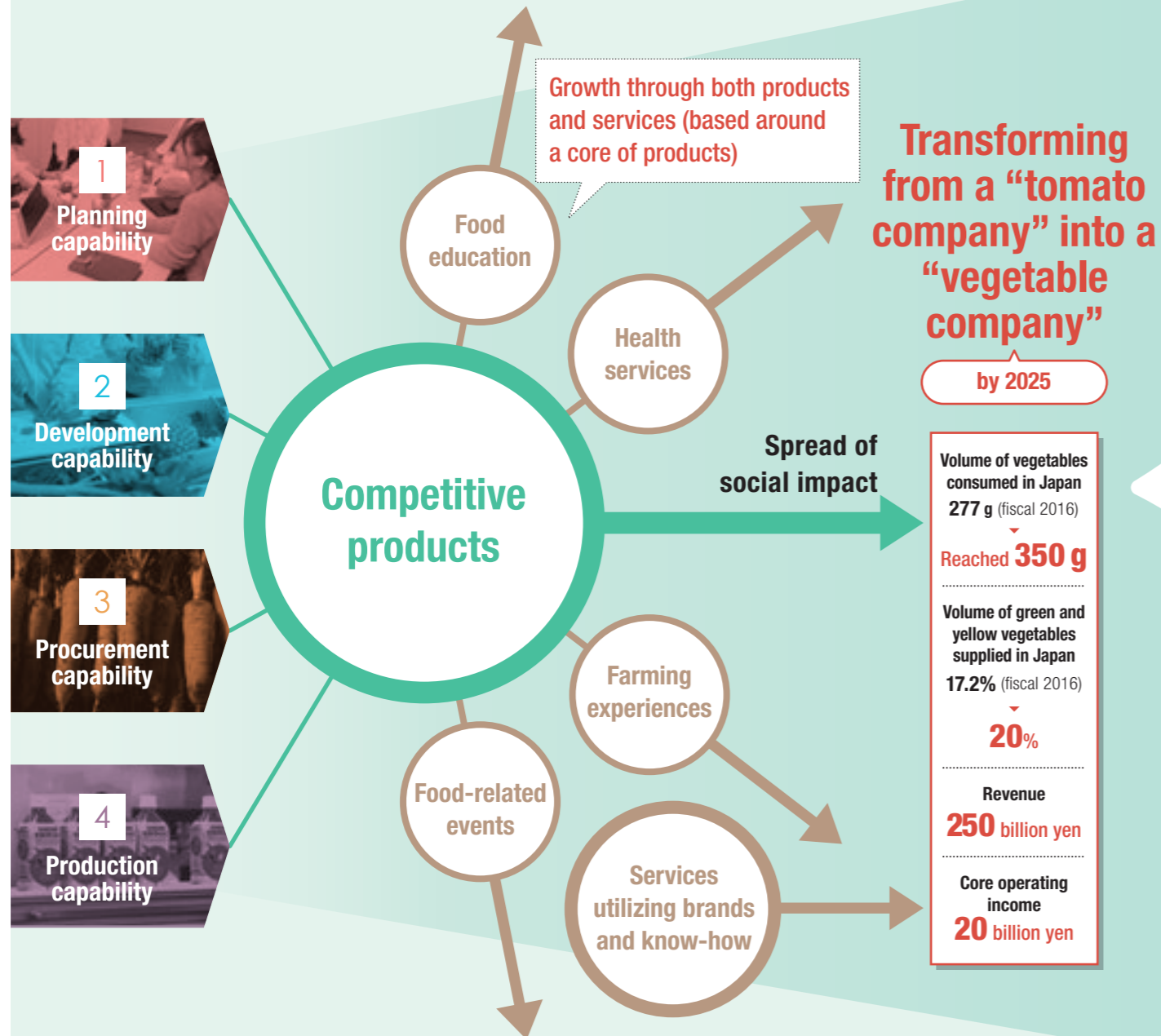
Kagome personnel



Takahito Hamamiya
Production Technology Department, Production & Purchasing Division
(joined Kagome in 2007)

A scenario for growth with scalability, based on product power

Moving forward, products created through the application of human resources × systems will continue to play a core role in Kagome's future growth. With this product power as its base, Kagome will accelerate its progress towards the realization of what Kagome strives for by becoming a company that offers not only products but also services, such as health services and food education, utilizing our brands and know-how developed so far.

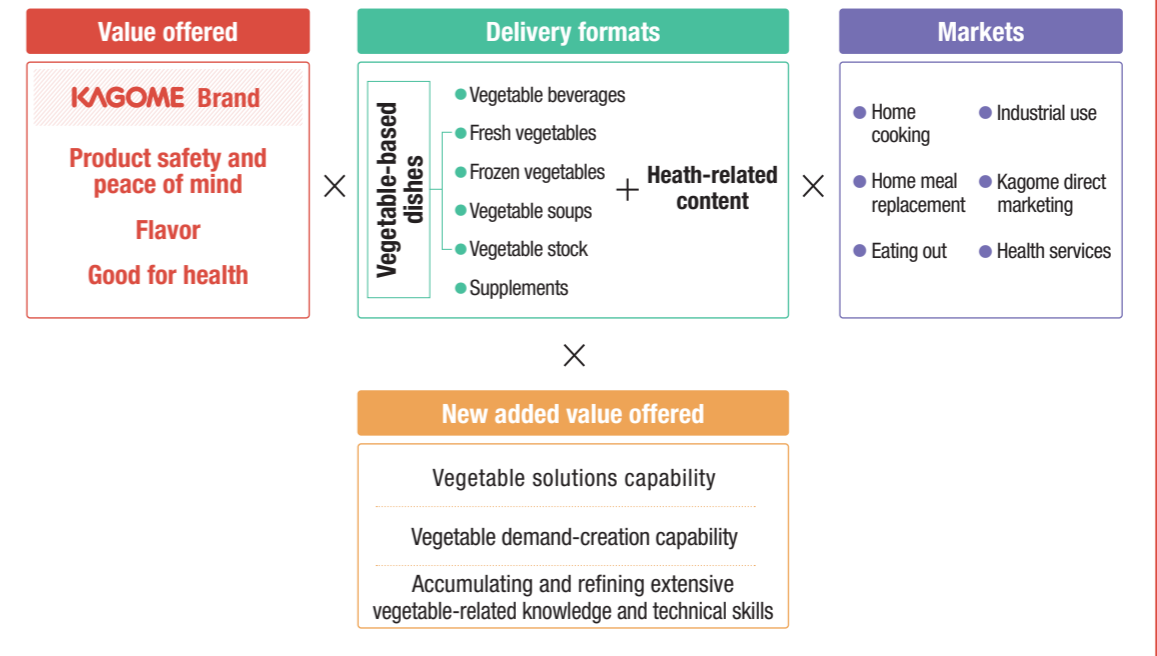


Becoming a "Vegetable Company" to Realize "What Kagome Strives for"

In order to fulfill its 2025 Vision to "become a 'strong company' capable of sustainable growth, using food as a means of resolving social issues," it is necessary for Kagome to transform from a "tomato company" into a "vegetable company."

Domestic Business

Kagome will provide a diverse range of vegetables in different formats to a wide range of markets through various processing methods, thereby enhancing its proposals for consuming vegetable-based dishes. This requires capabilities for delivering vegetable solutions and creating demand. By refining the extensive range of vegetable-related knowledge and technical skills that we have accumulated and changing ourselves, we will continue to greatly expand the range of areas in which we can contribute to resolving social issues and to engage in new challenges.



International Business

Through the vertically integrated business model of tomatoes for processing, in which it engages in all stages of the business from seeds to secondary processing, Kagome facilitates healthy dietary lifestyles in the countries and regions where it operates, and contributes to resolving global food shortages and other food problems. We will also create new demand by conducting B-to-C vegetable beverage business operations in Asia, and developing and introducing exclusive products to match local tastes.

