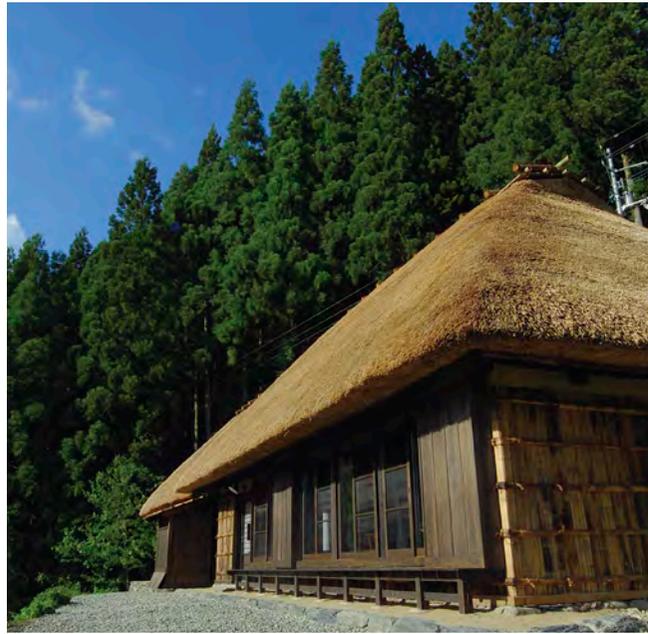


# HIGHLIGHTING *Japan*

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FOOD AND AGRICULTURE  
MARKETPLACE POTENTIAL

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THEME FOR **MAY**:  
**FOOD AND  
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MARKETPLACE  
POTENTIAL**

This month we feature some of the bumper crop of ideas that everyone from the government to local communities and individuals have come up with to energize Japan's agricultural realm.



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**ON THE COVER**

Food and Agriculture Marketplace Potential

## THE SEVENTH JAPAN-CHINA-ROK TRILATERAL SUMMIT



Commemorative photograph session at the Japan-China-ROK Trilateral Summit Meeting

ON Wednesday, May 9, the Seventh Japan-China-ROK Trilateral Summit meeting was held at the Akasaka State Guest House in Tokyo. (The participating leaders were H.E. Mr. Shinzo Abe, Prime Minister of Japan; H.E. Mr. Li Keqiang, Premier of the State Council of the People's Republic of China; and H.E. Mr. Moon Jae-in, President of the Republic of Korea (ROK).

The three leaders welcomed steady progress made in various fields of the trilateral cooperation and expressed appreciation of the initiatives of the Trilateral Cooperation Secretariat (TCS) for its contribution. In addition, they discussed the current status and future directions of specific cooperation projects. The three leaders agreed to advance cooperation in a variety of areas, including strengthening people-to-people exchange through the opportunity of the Olympic and Paralympic Games, finance, energy, environment, disaster risk reduction, and ICT. The three leaders also confirmed that they will advance the trilateral cooperation in a more "open and inclusive" manner.

Regarding the over this 10 years, Prime Minister Abe emphasized the spirit laid down in the Joint Statement of the First Japan-China-ROK Trilateral Summit, which stated,

"We are determined to pursue comprehensive cooperation in the future-oriented manner." He noted that such future-oriented cooperation has steadily advanced; negotiations on the trilateral Free Trade Agreement (FTA) has launched, the Trilateral Investment Agreement entered into force, the number of people-to-people exchange has doubled, 21 ministerial-level meetings have been held since the last summit and over 100 cooperative programs have been implemented, trilateral cooperation has systemized through the establishment of the TCS. Prime Minister Abe stated that he hoped to carve a new start of the trilateral cooperation as this year marks the 10th year since the first trilateral summit was hold.

The three leaders confirmed that the complete denuclearization of the Korean Peninsula is their common goal and shared the view to continue their close cooperation toward the peace and stability in North East Asia.

The three leaders confirmed to advance their cooperation toward North Korea's dismantlement of all weapons of mass destruction, including nuclear weapons, and ballistic missiles in a complete, verifiable and irreversible manner in accordance with the relevant United Nations Security Council Resolutions. Prime Minister Abe stressed that it is necessary to urge North Korea to take concrete actions.

As for the abductions issue, Prime Minister Abe called for the two leader's support and cooperation

toward its early resolution, and gained their understanding.

The three leaders had a frank exchange of views on how to make North Korea take the right course and pave the way for its bright future. Prime Minister Abe stated that Japan's resolve to settle the unfortunate past and make every possible effort for the normalization of the relations, on the condition that North Korea resolves the outstanding issues of concern such as the abductions issues as well as nuclear and missile issues completely and take the right course, has not changed.

The three leaders shared the view to cooperate in fora including the East Asia Summit (EAS) and ASEAN+3 and to contribute together for the integration of ASEAN. Prime Minister Abe stated that Japan will promote the "Free and Open Indo-Pacific Strategy," and required China and Korea to agree with this way of thinking.

The three leaders agreed to promote free trade and cooperate toward the early agreement of the high quality Regional Comprehensive Economic Partnership (RCEP) and the acceleration of the trilateral FTA negotiation. Prime Minister Abe stated that due to Abenomics Japan is steadily advancing the path towards an exit from deflation, and that he will build a vibrant Japan and contribute to regional and global economic growth.

The three leaders agreed on promoting the SDGs and cooperating in the areas such as health, climate change and so on. Prime Minister Abe stated that Japan, China and the ROK should cooperate and enhance their counter measures as a whole including border control and capacity building for the third countries in regards to cross border crimes such as terrorism, cybercrime and illegal drug trade.

# *Food and Agriculture Marketplace Potential*



With Japanese food continuously gaining popularity worldwide, boosting exports of food and agricultural products is a priority. The Japanese government is cultivating demand abroad for Japan's high-quality agricultural goods, aiming for a trillion yen in exports in 2019.

This issue explores trends such as the growing demand worldwide for Japan's matcha green tea and employing ICT to optimize greenhouse environments, while also covering measures that preserve landscapes and farming in local communities.



Koji Inoue

# Growing Japan's Global Food and Agriculture Marketplace Potential

*The Japanese government has set a target of one trillion yen (circa US\$ 9 billion) in exports of agricultural, forestry, fishery and food products for 2019. We spoke to Koji Inoue—Director-General of the Food Industry Affairs Bureau in the Ministry of Agriculture, Forestry and Fisheries—about the various initiatives the government is employing to meet the goal.*

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**YUKIKO ISHIKAWA**

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**Please tell us how you plan to bring more of Japan's agriculture, forestry, fishery and food products to the global marketplace.**

We're promoting exports of those products and also striving to meet the demand from international tourists visiting Japan, otherwise known as inbound demand. In 2017, Japan's total exports of agricultural, forestry, fishery and food products totaled around 807.1 billion yen (US\$ 7.3 billion). If you add the food products foreign visitors purchased and took home, which came to around 350 billion yen (US\$ 3.2 billion),

and the around 890 billion yen (US\$ 8.1 billion) they spent on food and beverages in Japan, that's a huge market worth over two trillion yen (US\$ 18.2 billion).

Expanding this market is a major theme in turning Japan's agricultural, forestry, fishery and food industries into growth industries. In terms of specific export items, instead of products like scallops, pearls and tobacco that enjoy large export volumes, we're seeing a trend toward more typical products such as beef, strawberries, green tea and rice.

### **What specific measures are you taking to reach the 2019 goal of one trillion yen worth of exports?**

One large-scale measure I'd like to mention is the establishment of the Japan Food Product Overseas Promotion Center (JFOODO). JFOODO conducts PR for Japan's agricultural, forestry, fishery and food products abroad to raise consumer awareness and expand the market. We also connect and match local producers with Japanese and overseas trading companies, overseas food service companies and retailers. In the past we have helped producers exhibit their goods at food fairs outside of Japan. Our next step was holding the first "Japan's Food" export fair at the Makuhari Messe international convention complex in Chiba Prefecture in October 2017, drawing about 2,800 buyers from 70 different countries. It was so well attended that the spaces for business negotiations were always full. We've greatly increased the scale this year and expect 4,000 visitors from 80 different countries.

Branding and the protection of rights are also essential to ensure that Japanese products are evaluated fairly. We help Japanese brands register plant varieties overseas, and also have the Geographical Indication (GI) protection system (see pp 8-9) to safeguard products with unique production methods and natural characteristics of their production areas, such as climate and soil conditions. Other methods of branding include G.A.P.<sup>1</sup>, an agricultural process control standard that indicates that producers have considered issues such as food safety, the work environment and environmental conservation, and with JFS<sup>2</sup>, a Japan-based certification for food safety control. We



Logo of the Geographical Indication protection system

encourage producers to acquire these types of certifications as part of their branding.

### **What is the global market outlook for products from the Japanese agriculture, forestry, fishery and food industries?**

In the past, there were concerns that health-oriented Western countries might shy away from heavily marbled Japanese beef. However, introducing this kind of beef in conjunction with *sukiyaki* and *shabu-shabu* preparation methods greatly increased demand. So, instead of just trying to sell a product as is, connecting it to the best ways to eat it and the overall food culture of Japan is an ingenious and essential step for expanding exports. We're also seeing growing interest in Japanese food because of things like the rapid increase in Japanese restaurants all over the world. By taking advantage of this opportunity, we will be able to revitalize local Japanese industries, and create a better future out of this trend.

However, instead of each group acting independently, we need to focus on services like SAVOR JAPAN<sup>3</sup> (see pp 10-11) which combine food and tourism to highlight the appeal of Japan's various regions. **7**

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1 G.A.P. is an international third-party certification for Good Agricultural Practices (G.A.P.), currently covering over 120 countries and recognized as the international standard.  
2 JFS standard: A food safety management standard originated in Japan, which established and operates the standards and certifications of the Japan Food Safety Management Association (JFSM).  
3 SAVOR JAPAN  
<https://savorjp.com/en/>

# POWDERED GREEN GOLD

*The demand for Japan's matcha powdered green tea, both in its drinkable form and as a healthy ingredient in processed foods, is growing worldwide.*

Preparing a bowl of matcha green tea

## TOMOKO NISHIKAWA

RECOGNIZED and appreciated worldwide, fine matcha is gaining fans in the West and elsewhere in Asia. Ministry of Finance trade statistics reveal that exports of matcha rose 24.3 percent in 2017, and were worth nearly 14.36 billion yen (US\$ 129 million)—the highest it's been since 1988. Greater health consciousness worldwide has virtually every country drinking more green tea, with many becoming prime export markets. The USA is currently the major export destination for Japan's matcha, followed by Taiwan, Germany and Singapore.

Shizuoka Prefecture and the city of Uji in Kyoto Prefecture are

often considered Japan's "tea capitals." And yet the company that boasts the largest share of production both within Japan and globally is located in Nishio, Aichi Prefecture. AIYA was established in 1888, and was one of the "Global Niche Top Companies Selection 100" singled out by the Ministry of Economy, Trade and Industry.

Nishio's temperate climate, rich fertile soil and abundant water resources by Yahagi River, and relatively sheltered environment are keys to its matcha dominance, and historically nearby castle towns such as Nagoya and Okazaki were major consumption areas.

Unlike many other tea production centers that produce all types of tea, Nishio is more focused. Over 96 percent of

the area cultivated in Nishio is devoted to producing *tencha*, the raw tea leaves used for matcha. *Tencha* is relatively unknown because most of it is shipped out for processing. In 2017, the high-quality tea created from those leaves, Nishio Matcha, was registered under the Ministry of Agriculture, Forestry and Fisheries' Geographical Indication (GI) protection system. (see pp 6-7) The GI mark inspires trust in product quality, and should lead to greater exports.

The development of tea ceremony culture means that Japan's people have drunk matcha since ancient times. However, common folk tended to favor *sencha* green tea, which came into fashion because it was cheaper and easier to prepare, and didn't

involve the intimidating as the complexities and customs of the tea ceremony.

“The tea ceremony has survived because it is a meaningful practice, and I’m sure it will continue to exist,” says Takeo Sugita, AIYA’s president. “But many people avoided drinking matcha because they didn’t know the etiquette. If it had been drunk like coffee or Western tea, matcha might have developed into something more casual.”

Since the 1960s, AIYA has sought new markets, and also worked to overturn the stereotype that matcha is only for drinking. They began selling matcha as a raw ingredient to be used in processed foods, and in 1978 began growing it organically, long before that became fashionable. During the 1980s, matcha companies shifted away from marketing it as a raw ingredient. Instead, they used it to flavor various foodstuffs, such as sweets and ice cream, which established its place in Japan’s food culture.

The overseas market for matcha also expanded during the 2000s. Packed with antioxidants



Lush fields of green tea

and rich in fiber, chlorophyll and vitamins, it gained acceptance as a health food in the United States. It’s also a luxury grocery item in cafés and homes in Europe. AIYA established local subsidiaries in the United States in 2001 and Austria in 2003. By 2017, international shipments had reached approximately the same level as domestic shipments.

Lately a movement has emerged in Japan determined to define the country’s matcha, as a way to differentiate it from powdered green tea produced in other countries.

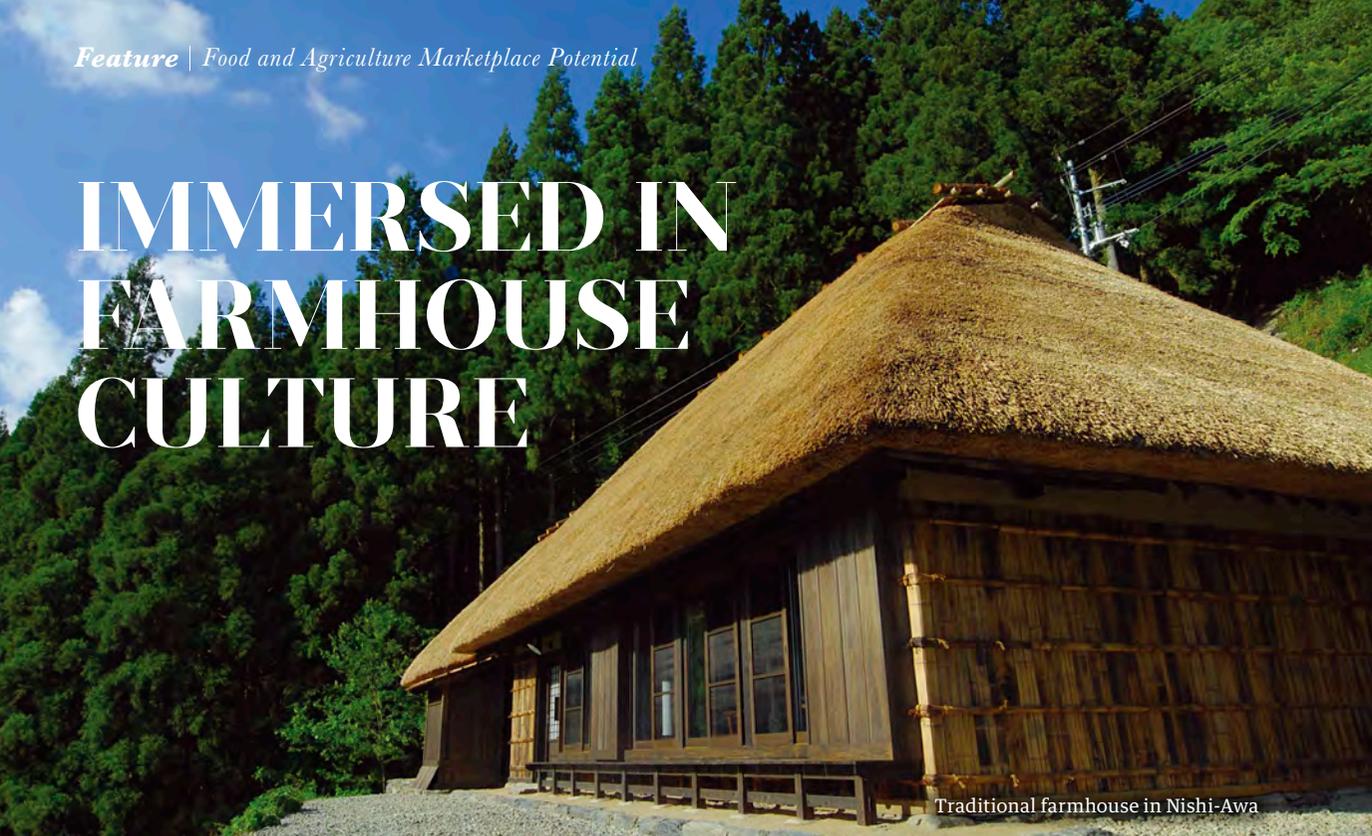
“It’s meaningless if matcha is only used to gain prestige as a high-quality product made in Japan,” argues Sugita. “We may claim that a product is real Japanese matcha, but we can’t sell it overseas if it does not meet the needs of the country it is being exported to, which is the most important thing. Competition will only grow fiercer. We need to deeply understand the characteristics of each market, construct systems to generate tangible benefits and export everything from high-quality matcha to inexpensive products that can compete with the green teas produced relatively cheaply overseas. If we can’t, we won’t survive.”

Having a flexible approach to each country—such as whether to focus on quality or affordability, or whether to push tea for drinking or processing—leads to the expansion of overseas market shares. AIYA’s next strategies for expanding exports of its powdered green gold are the focus of a great deal of attention. 



Sweets flavored with powdered green gold

# IMMERSED IN FARMHOUSE CULTURE



Traditional farmhouse in Nishi-Awa



Experiencing farm life in Nishi-Awa



Visitor trying out indigo dyeing in Nishi-Awa

*Homestays in Japan's rural farming villages bring visitors a deeper understanding of local culture and people amid growing things and abundant nature.*

**SELENA HOY**

**T**HE farming village of Tono City in Iwate Prefecture has a population of just 28,000, and its name translates as “distant field.” There are no fast food restaurants or chain hotels here, and the people speak in a distinctive dialect. Tono is also known as a land of folklore, and has many old legends of monsters and men.

To bring in tourists, Tono is making use of the region’s defining features—agriculture, nature and local culture—in the form of farm village homestays.

The path from Tono Station leads

through fields and along a stream. The destination is a large farmhouse with a splendid tiled roof. Near the entrance are a wheelbarrow and hoe, as well as piled-up baskets and firewood. The owner of the farmhouse, Kikuko Kikuchi, calls out a welcome.

Tono is one of the places providing abundant hops to one of Japan’s major beer producers, and Kikuchi raises hops as well as peanuts and rice. Her large vegetable garden sprawls out on the opposite side of the house. Alpine leeks and butterbur sprouts are ripe for the



Preparing a meal in Tono



Clear waters add to the rural charm



A delicious meal featuring local vegetables

picking in late April. Cutting vegetables and grilling fish together with Kikuchi in her kitchen for dinner are part of the homestay experience.

An NPO called Tono Natural Life Network runs this program, and currently has 140 farmhouses registered. Its president, Shinichi Kikuchi, hopes that the program will revitalize the region while protecting its traditional culture. Approximately two thousand people visit through the Tono farm village homestay program each year, but he feels they can bring in even more.

“Tono is the true Japan—the homeland of Japan,” Kikuchi says. “The Tono of old is still alive today. Participants in the program empathize with the

Tono lifestyle, and this gives its residents greater pride in their homeland, protects their traditions, and spreads their culture to the world.”

Tono is not the only place in Japan where visitors can immerse themselves in farmhouse culture. As part of an initiative to welcome international visitors, the Minister of Agriculture, Forestry and Fisheries created SAVOR JAPAN (see pp 6-7), a service that recognizes certain areas and focuses on sharing information about the charms of farmhouse culture, along with the culinary and food culture experiences one can experience during the homestay program.

One of the fifteen areas recognized for this within Japan is the Nishi-Awa region of Tokushima Prefecture. Here, on steep 40-degree slopes within the mountains, they use diverse agricultural methods passed down for four centuries to cultivate assorted grains like millet and buckwheat. These traditional farming methods have been registered as Globally Important Agricultural Heritage Systems by the Food and Agriculture Organization of the United Nations (FAO).

Participants in the homestay program to Nishi-Awa can not only stay in a century-old farmhouse, which has been beautifully renovated on the inside while maintaining its traditional appeal and atmosphere, but also enjoy cuisine made from locally grown vegetables and wild game from the surrounding mountains (like deer and boar) along with local residents.

This region also boasts a wealth of sightseeing attractions, including a magical sea of clouds generated by the unusual terrain and climate, a rafting experience in the Oboke and Kobohe ravines, and the townscape of Udatsu, which flourished during the Edo Period (1603-1867) thanks to indigo dyeing and has preserved its historical buildings and atmosphere.

Shinichi Kikuchi doesn’t believe that the inability of most farmers to speak English is a problem, since smartphones are making communication simple (see pp. 22-23). Kikuko Kikuchi agrees. “Communication is highly valued in farm village homestays. Guests don’t simply sleep, eat, and then say goodbye,” she says. “I can’t speak a word of English, but I have a heart.”

As proof of this, program participants who have seen the heartfelt hospitality of their hosts return to the farm village time and time again. **7**

# WASTE NOT

*A university and an insightful associate professor team up with regional industry and local government to create new value using agricultural products that were once discarded, as well as handle everything from product development to promotions.*

## MADOKA NOMOTO

MATSUMOTO University is situated in a tranquil rural landscape in the middle of Nagano Prefecture. It has earned wide praise for backing the sixth industrialization (see HJ Feb, 2018, pp 10-11) and promoting the efficient use of natural resources. The university is close to Azumino, a region famous for producing soba and wasabi. Along with the Nagano Prefecture Central Shinano Area Sixth Industrialization Promotion Council, the university earned the Minister of Agriculture, Forestry and Fisheries Prize, the highest award at the Fourth Food Industry Mottainai (wastefulness reduction) Awards in 2016 for its work in reducing food loss and promoting waste recycling.

Any buckwheat flour left over after the soba-making process is normally discarded. For example, out of 22 kilograms of brown soba, 9 kilograms would be extracted to make buckwheat flour, while the rest would be discarded as waste. And wasabi leaves, which are edible if processed properly, were being discarded as well.

The university suggested producing roasted buckwheat flour, and turning wasabi leaves



①



②



③



④



⑤

- 1 Arukuma Soba made using buckwheat flour that is usually discarded
- 2 A pork bun flavored with the processed wasabi leaves
- 3 The Fourth Food Industry Mottainai Awards
- 4 Croquettes made with the processed wasabi leaves
- 5 Paste made from wasabi leaves

into a new product called wasabi leaf paste. In cooperation with a local food manufacturer, the university used roasted buckwheat flour to develop Arukuma soba, which became a hit product that sold over 5.5 million packages and brought in more than ¥100 million (about US\$ 913,000).

The university's revitalization work was a positive example of cooperation between industry, government and academia, and led to products that took advantage of the region's characteristics.

Organizing booths with companies from various industries and municipalities at events in the Tokyo metropolitan area also attracted tourists through sightseeing bus tours.

Associate professor Kazuhiro Yanai at Matsumoto University's Department of Health and Nutritional Science, Faculty of Human Health Science, started a project four years ago based on his award-winning endeavor to create valuable Azumino brand goods out of materials normally discarded. He and his students sought out partners such as Azumino City, the Azumino Society of Commerce and Industry, Saito Farms, Azumino Shokuhin (a food processing company and secondary industry producer), vendors in tertiary industries and tourism operators such as JR East Nagano and Alpico Kotsu. In the end, the partnerships encompassed everything from developing products to promotional activities.

Sixth industrialization businesses generally involve a primary industry practitioner taking on secondary and tertiary industry roles to gain more income. Yanai's model, however, which he calls the Matsumoto University Regional Revitalization Model, is a project managed from start to finish with players involved in all aspects of production, tourism, and marketing and sales. It also links primary, secondary and tertiary industries, with a university or government body serving as its hub.

"In the end, as the saying goes, every man knows his own business best," Yanai explains. "By collaborating with specialists at each stage, we can create products that are sure to sell. And distributing the earnings among everyone allows for more peace of mind and leads to better products."

Yanai adds that one-shot cooperative efforts between industry, government and academia to develop new products should no longer be considered an achievement or successful contribution. "I'd like to create more successful cases like this that are not limited to just selling a product, but also examine how they can change society and study the economic results they generate."

Yanai plans to apply his model to various other Azumino agricultural products, including apples and strawberries, not only soba and wasabi. His ultimate goal is to help local regions thrive, including boosting farm income, providing support for childcare, creating new job opportunities (such as hiring workers with disabilities) and attracting tourism. 7



*A town recovering from the 2011 earthquake is using digitalization and visualization to produce its own premium brand of strawberries.*

**SAYAKA KAWABE**

# TECHNOLOGY AND STRAWBERRIES

THE Great East Japan Earthquake and accompanying tsunami wreaked catastrophic damage on 90 percent of the strawberry-growing greenhouses in the town of Yamamoto, Miyagi Prefecture. Starting in 2011, however, an agricultural production corporation called GRA Inc. used information and communications technology (ICT) to build a viable strawberry-growing system from scratch in just a single year. The CEO of GRA Hiroki Iwasa—a Yamamoto native who was managing an IT company in Tokyo at the time—decided to step in to help revive the area’s local businesses. Iwasa became the main driver behind bringing a new life and purpose to strawberry producers in his disaster-stricken hometown.

“By systematically digitalizing the plastic greenhouse environment and the yield and condition of the plants, and then comparing the data, we were able to see the causal relationships that resulted in poor cultivation,” says Wataru Sugeno, GRA’s researcher. “Before this, digitalization was never applied; everything relied

on the experience of veteran workers and intuition. That makes it hard to start a new business or achieve industrial progress, and takes too much time to recover. Using the PDCA cycle in the agricultural business can bring continuous improvements and help create an ideal growing environment.”

GRA devised a plan to completely digitalize the process using ICT. Their yield was low the first year because they couldn’t harvest samples in sufficient volume. The database they built, however, helped pinpoint measures for improvement, and they found their groove in year two.

“GRA also uses automated systems inside the greenhouse to regulate things like temperature, humidity, solar radiation, carbon dioxide concentration and other environmental aspects that are clearly more effective than relying on human experience and intuition alone,” Sugeno says. “Since we can get very close to a designed environment, we can move forward at an accelerated pace even without having much experience. Data can be monitored practically in real time, and uploaded to



2



3



4

- 1 A new high-tech way of growing strawberries
- 2 Beautiful and tasty Migaki Ichigo
- 3 Wataru Sugeno, GRA's researcher
- 4 Using technology to improve strawberry production

the cloud to be shared with any location. That's one huge benefit of applying IT."

The system has enabled GRA to supply a stable crop of strawberries with high sugar content and striking appearance. Their three superior varieties—produced based on the concept that “if you polish it, it will shine”—are sold under the unified brand name Migaki Ichigo (“polished strawberries”). Migaki Ichigo has become a representative brand for Yamamoto, boasting exclusive sales deals at famous Tokyo department stores, and is exported overseas as a premium strawberry brand.

On the other hand, it's difficult to determine certain benchmarks and indices in the agriculture business without the knowledge of veteran farmers. That's why GRA is digitalizing the intuition cultivated by farmers with years of experience to visualize of their expertise.

“It's easier to get into the industry,” Sugeno says, “when things that only veteran farmers understand become clear. Visualization is also assisting in the training of a new generation of agricultural workers.”

Between FY2012 and 2017, GRA conducted a wide range of research as part of a research project sponsored by Japan's Reconstruction Agency and the Ministry of Agriculture, Forestry and Fisheries. Even while he engaged in demonstrating never-before-seen technologies, Sugeno was seeking countermeasures against crop diseases, and was able to construct an ideal environment for strawberry cultivation.

Damage from the earthquake and tsunami had also made it impossible to properly cultivate the soil in Yamamoto, so GRA adopted a nutriculture method that employs coconut shells. Their production method—largely free of the influence of climate and soil—takes full advantage of the environmental control capabilities unique to greenhouses. The company is also deploying workers to other areas to grow Migaki Ichigo in Aichi and Kanagawa, and began cultivation in India in 2012. There are great expectations for the part that ICT will play in the future of global agriculture. **7**

# THE FUTURE OF RICE

*In Japan, where rice is a staple food, research into selective breeding techniques is paving the way for new, more flavorful and easier-to-cultivate varieties.*

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**TAMAKI KAWASAKI**

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JAPAN grows over three hundred varieties of rice, but only five make up two-thirds of the country's planted rice fields. "Those five are the 'brand' breeds most popular with Japanese consumers, such as Koshihikari," says Masayuki Yamaguchi, the selective breeding expert and director of the Division of Rice Research at the Institute of Crop Science, National Agriculture and Food Research Organization (NARO). "And actually," he adds, "all five are variations on Koshihikari developed through selective cultivation."

Japan began establishing agricultural experiment stations around a century ago, and experimentation in selective breeding technology for rice gained momentum in both national and prefectural centers. Since the Japanese archipelago stretches for about three thousand kilometers from northeast to southwest, its climate varies significantly, producing several distinct harvest seasons when the same variety is grown nationwide. One goal of selective breeding is to create optimized varieties that can be harvested most efficiently and with the highest yields in each region of the country.

Selective breeding involves planting seeds gathered by cross-breeding pollen from one breed's stamen to the pistil of another, and selecting the full-grown plants that possess the desired characteristics. This selection process has to be repeated six to eight times before those traits



1



2



3



④

- 1 A ripening crop of rice
- 2 New rice just sprouting
- 3 Rice before and after being hulled
- 4 Masayuki Yamaguchi, director of the Division of Rice Research at the Institute of Crop Science, NARO

Photography courtesy of NARO

are stable, so it takes almost a decade to breed a single new strain.

The first selectively bred variety, Rikuu No. 132, was created in 1921. It gave birth to Norin No. 1 a decade later, which in 1956 led to Koshihikari, the hit variety known for its wonderful flavor and appearance.

“However, this was problematic from a selective breeding standpoint,” Yamaguchi points out, “because it started a fad of pursuing flavor rather than yield. Koshihikari was selectively bred nationwide. As a result, Japan’s premium brand rice breeds share Koshihikari’s drawbacks of low yield, collapse during cultivation, and susceptibility to disease.”

Premium brand rice, which sells for relatively high prices on the market and can boost the income of farmers, got plenty of promotional support from local governments. While competition among regions growing brand-name rice intensifies, rice used for feed—which is subsidized by the national government—is a popular crop with farmers as well. As Yamaguchi remarks, “That caused a bipolarization, where it’s either low-yield brand-name rice that’s difficult to cultivate or rice grown for feed.”

His concern stems from the fact that halting production of nonbranded commercial rice will cause rice prices to rise. That’s why NARO pursues selective breeding for high-yield breeds to increase commercial rice varieties destined for Japanese cuisine and a variety of other uses.

“Our goal is to create safe and reliable domestic rice varieties,” Yamaguchi notes. “We’re developing several different breeds to be used as commercial rice in the food industry and other areas that produce high yields, have good flavor, and are easy to cultivate, matching supply and demand between producers and businesses.”

Among the new NARO breeds, Yamaguchi’s recommendation is Emi-no-Kizuna, which has a high yield and a light flavor perfect for the vinegared rice used in sushi. Yamaguchi says he wants to go on to produce commercial-grade rice varieties for ready-made meals and food service, and export them proactively as well. 



Members of the society meeting with school children over lunch

LOCAL PRODUCTION  
FOR LOCAL CONSUMPTION  
THROUGH

# SCHOOL LUNCHES

*Schools in Mishima, Shizuoka Prefecture have been supplying local produce for school lunches since 2002.*

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**KATSUMI YASUKURA**

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“It all started with my invitation to go potato-digging to the students at the elementary school my daughter attended,” says Masahiro Sugimoto, an advisor of the Mishima Municipal Research of School Lunches Society for Agricultural Producers, a group that supplies local farm produce for school lunches in Mishima. The nutritionist in charge of the lunches was struck by the great taste of the *komatsuna* (Japanese mustard spinach) students also brought back and approached him to include the society’s products in the lunches.

“By coordinating among producers, we set annual prices, held meetings to check the size and quality of the vegetables, and invited nutritionists to tour the farms,” explains Masatoshi Hayashi, the chairman of the society. “We also created a system to deliver fresh vegetables directly to fourteen municipal elementary schools and three municipal lunch supply centers for junior high schools in Mishima.”

In 2009, Mishima began more actively encouraging using local produce for local consumption in school lunches, declaring itself a “city that promotes dietary education.” As of fiscal 2017, local produce accounts for 42 percent of lunches on nearly two hundred lunch days in Mishima. According to a survey by the Ministry of Education, Culture, Sports, Science and Technology, the national average in fiscal 2016 for incorporating local produce in school lunches was 25.8 percent.

With *washoku* (Japanese cuisine) at their core, Mishima’s

school lunch menus are designed to prevent lifestyle-related diseases, promote traditional Japanese eating habits, and help kids learn about their local food culture.

“There are around a thousand students in each grade at all the elementary and junior high schools in Mishima,” says Akira Hasegawa, the school education division chief in the Mishima City Board of Education. “So many students have been nurtured through school lunches made of local produce these past sixteen years. I believe that awareness toward local produce for local consumption, and the importance of *washoku*, has surely risen among every citizen, including parents of students.”

“I regularly have the chance to eat school lunches and talk with students at elementary schools, and sense an increased interest in agriculture among students,” Sugimoto says. “For example, they asked me about the best seasons for vegetables, how to grow them, and the difficulties of growing them. They told me they’ve started to track the varieties and prices of vegetables in supermarkets. Some even said they’ve started to help with farm work at their relatives’ homes.”

The school lunches featuring local produce have also had a positive impact on farmers.

“Along with contributing to the community, there is nothing more encouraging than being told directly by students that your vegetables are tasty,” says Hayashi. “And if *washoku* can become a fixture of children’s diets, it will also have a positive effect on the future of agriculture. It’s hard to be optimistic about the lack of future farmers to take over farms in Japan, but a younger generation is getting interested in agriculture in Mishima.”

“Maintaining a stable system for growing vegetables is essential to continue providing local produce for school lunches,” Sugimoto says. He works his fields and keeps the eyes of city officials and nutritionists on the fields as they ponder the best ways to ensure the production of safe and delicious vegetables. 🍆



Showing off the local fields



Learning about local production and consumption



Touring Mishima's fertile fields



Matching the faces of the producers to their produce

# Local Residents Protect Local Landscapes

TOMOKO NISHIKAWA

*Citizen-backed initiatives and local ownership are helping to preserve Japan's many verdant rice terraces covering mountainside and ensure that they are passed on to future generations.*

THE largest of Japan's rice terraces, Maruyama Senmaida, is a vast array of 1,340 rice paddies that rise up 160 meters on the southwestern slope of 736-meter-high Mount Shirakura. The Maruyama area is located in the east of Kiwa Town, part of Kumano City in Mie Prefecture. The view of large and small paddies—a proud, rich landscape reflecting the wisdom and hardships of long-ago farmers—is considered one of Japan's finest. In 1999, the Ministry of Agriculture, Forestry and Fisheries named it as one of the 100 Best Rice Terraces in Japan.

While it is not clear exactly when these rice paddy terraces were created, according to written records there were 2,240 rice paddies here in 1601. By 1992, however, there were only about 530, the result of a policy of cedar afforestation and rice crop conversion instituted around 1970. The aging local community, depopulation and accelerating abandonment of cultivated land over the years were all factors as well.

Local residents viewed losing this precious cultural heritage during their generation as unacceptable, and were determined to preserve it. "In 1993, all the people in the Maruyama area formed the Maruyama Senmaida Preservation Society," Kenichi Wahira of the Public Corporation to Promote Kumano City Homeland explains. "Everyone gathered to help dig up



The lush green rice terraces of Maruyama Senmaida

tree roots, repair the stone walls and revive the fields, which had fallen into disuse one by one. In 1994, residents joined with the local government to enact the Maruyama Senmaida Ordinance, which was the first in Japan." Over the next four years or so, they restored 810 paddy fields covering about 2.4 hectares.

To preserve and pass on the restored paddy fields to future generations, the community established an ownership system in 1996. Owners pay an annual fee that entitles them to plant and harvest rice—done by hand in the traditional manner—and participate in *mushi-okuri* (using lit torches to banish harmful



Volunteers and locals working in the rice paddies

insects) during a traditional farming event at which everyone prays for a bountiful harvest.

“We receive over a hundred applications a year,” Wahira says. “Some owners have worked with us since we established the system over twenty years ago. Some made new friends, and there are foreigners among our owners. Each year many people look forward to planting rice together, matching their schedules.”

In recent years, students from Sagami Women’s University began visiting Kumano City as part of the region’s collaborative activities. They study the importance of agriculture and its relationship with nature while learning about rice planting, harvesting and other aspects from the locals.

“Thanks to the students, we make tremendous progress with the work,” says Kenji Yoshida of Kumano City’s Local Areas Promotion Division about the program. “The local people also look forward to interacting with their young helpers afterward. Many of the students use social media to talk about how the work is going. This is a great opportunity to tell

more people about Maruyama Senmaida.”

TV and other media have picked up on the beautiful scenery and the area’s restoration initiatives, which boosts the number of tourists. But what the residents truly want is to preserve and pass on Maruyama Senmaida to future generations.

“What we are doing is not about holding fancy events and enjoying a fleeting kind of popularity,” Yoshida explains. “It’s about working with the same spirit, on an ongoing basis, as the owners and students have been doing, and increasing the number of people involved. Both the Maruyama Senmaida Preservation Society, which operates in line with the agricultural work, and the Maruyama Senmaida Protection Society, which receives financial support, have gained members each year. Seeing this cycle spreading throughout the whole country is what makes us happiest.”

Encouragement and efforts like these to protect rice terraces that can be considered the original landscapes of Japan will continue as long as the community stays strong. **7**

# AI SHAPING THE EVOLUTION OF MULTILINGUAL SPEECH TRANSLATION TECHNOLOGY

*VoiceTra is a speech translation app that uses artificial intelligence to allow speakers of thirty-one languages to communicate instantly. VoiceTra's fast and accurate translation is expected to solve the communication problems for travelers from abroad.*



## TAMAKI KAWASAKI

VOICETRA is a multilingual speech translation app capable of instant translation between thirty-one languages, developed by the National Institute of Information and Communications Technology (NICT). Speech translation systems are being developed elsewhere in the world, with several well-known web services already in existence. However, one of the biggest advantages VoiceTra has is that it does not use English as an intermediate step in the translation process. Instead, the app translates directly from Japanese into thirty other languages, allowing for a much higher level of accuracy.

Taking into account the wide range of tourists in Japan, it supports major European languages and Asian languages as well, which is also one of its unique selling points.

“VoiceTra is currently the only app that supports two-way speech translation between Japanese and Myanmar,” states Kiyotaka Uchimoto, director of the Planning Office at the Advanced Speech Translation Research and Development Promotion Center of NICT. The number of visitors to Japan is expected to keep increasing as the 2020 Tokyo Olympic and Paralympic Games approach. To create a society where visitors would not have to worry about language barriers, the Ministry of Internal Affairs and Communications announced its Global Communication Plan in 2014. Since then, many private enterprises have joined this nationwide initiative, speeding up NICT’s research and development to the point where they were able to carry out field experiments of their multilingual speech translation technology in real-world settings, such as hospitals, shops, restaurants and tourist destinations.

## SUPPORTED LANGUAGES (31 LANGUAGES)

🎤 Speech input (23 languages supported) 🗣️ Speech output (17 languages supported) 🗣️ To be supported soon

🎤🗣️ Japanese

🎤🗣️ English

🎤🗣️ Chinese (Simplified)

🎤🗣️ Chinese (Traditional)

🎤🗣️ Korean

🎤🗣️ Thai

🎤🗣️ French

🎤🗣️ Indonesian

🎤🗣️ Vietnamese

🎤🗣️ Spanish

🎤🗣️ Myanmar

Arabic

Italian

Urdu

🎤 Dutch

🎤 Khmer

VoiceTra translates between 31 languages.  
(Includes dialects of Chinese and Portuguese.)

Sinhala

Danish

🎤 German

🎤🗣️ Turkish

🎤 Nepali

🎤🗣️ Hungarian

🎤🗣️ Hindi

Filipino

🎤🗣️ Polish

🎤🗣️ Portuguese

🎤🗣️ Brazilian

🎤🗣️ Malay

🗣️ Mongolian

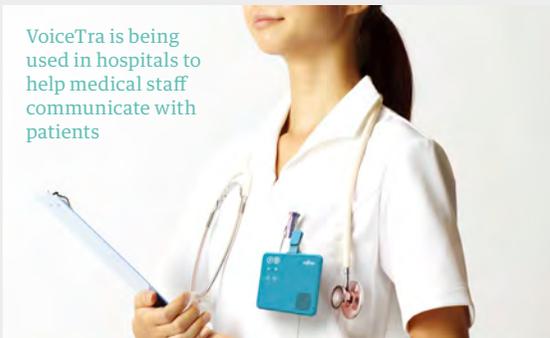
Lao

🎤 Russian

VoiceTra is available for free to individual users. It offers a simple and easy-to-use interface, and accurately recognizes the differences between various speakers such as their inflections and speaking styles. Moreover, the translation process is nearly instantaneous. The system utilizes a neural network (deep learning) based on human neural pathways to accelerate its learning process. The accuracy increases as the number of users rises with more information at the disposal of machine learning algorithms, leading to a natural and nonliteral translation. Emergency services, railway operators, taxi companies and hospitals have customized the VoiceTra technology and are using it to communicate with visitors from abroad. The smartphone app has also marked a total of three million downloads.

This wonder of technology is the culmination of nearly three decades of study, despite a rocky start due to skepticism regarding the merits of such research. “Nevertheless, we were convinced that this speech translation technology was necessary for the future of

VoiceTra is being used in hospitals to help medical staff communicate with patients



Japan,” says Uchimoto, thinking back over the road that led him to this point. NICT’s speech recognition technology has held up well against rival technologies from prestigious universities and noted research labs around the world at the International Workshop on Spoken Language Translation (IWSLT), an international competition, placing first in the world for three years in a row.

Besides being used in train stations and other public transport, medical facilities and in other situations in Japan, VoiceTra is now going beyond just a smartphone app in the hands of private enterprises. For instance, a hands-free ID card-sized device developed by one company targets doctors and nurses in hospitals. The device translates voices detected from the front (i.e., the patient’s voice) into Japanese, and voices detected from the top of the device (i.e., the doctor or nurse’s voice) into a designated language. Further research is being done at NICT on technologies that detect and translate multiple languages simultaneously. “The ultimate goal of our research is simultaneous interpretation that gives the most appropriate translation according to the context. To help us build the necessary database, we hope that as many people as possible will try out VoiceTra when they visit Japan,” says Uchimoto. 📺

VoiceTra official site:

<http://voicetra.nict.go.jp/en/index.html>

# FROM A SINGLE DROP OF BLOOD

**BIFUE USHIJIMA**

*The National Cancer Center Research Institute of Japan has developed a new diagnostic method capable of identifying thirteen types of cancer early on using microRNAs. They hope this will change the future of cancer diagnostics by detecting the illness more precisely and with minimal stress to the patient.*



**TAKAHIRO OCHIYA**

Head of Molecular and Cellular Medicine at The National Cancer Center Research Institute of Japan

**D**ETECTING cancer early lowers mortality rates and allows treatments that have a minimal impact on the mind and body. It is said that one in two people in Japan will suffer from cancer in their lifetime, yet the country's cancer screening rates are under 50 percent—relatively low compared to other nations. According to a Cabinet Office public opinion poll, a lack of time is the major reason given for not being screened, so making the process quick and easy would have a positive impact on screening rates.

The National Cancer Center Research Institute of Japan has an answer: it's called the AMED Body Fluid RNA Measurement Basic Technology Project, and has made fast, accurate and simple screening possible. The key to this technology is analyzing microRNAs<sup>1</sup> (miRNAs)—RNA molecules in cells related to the symptoms and onset of diseases such as cancer, and cell multiplication. The center leads

the world in demonstrating how miRNAs in the blood change in the presence of cancer.

“Cancer can be diagnosed through lab tests that spot tumor markers in the blood,” explains Takahiro Ochiya, the institute's head of Molecular and Cellular Medicine. “Tumor markers can't be detected until cancers are of a significant size, and diseases other than cancer can produce tumor markers, so testing for them is not a terribly reliable method of diagnosing cancer.”

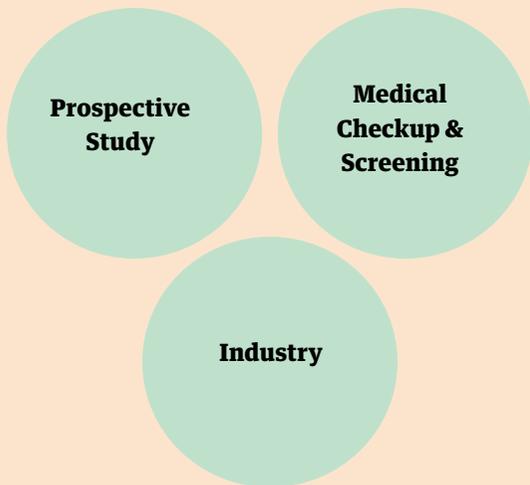
According to Ochiya, the institute's testing can detect specific miRNAs during the nascent stages of cancer, and the kind of miRNA found makes it possible to identify the type of cancer. “Just a single drop of blood—fifty microliters—is enough for a diagnosis, which is simple and only takes two days.”

Researchers found specific miRNAs for different types of cancer through comprehensive analyses

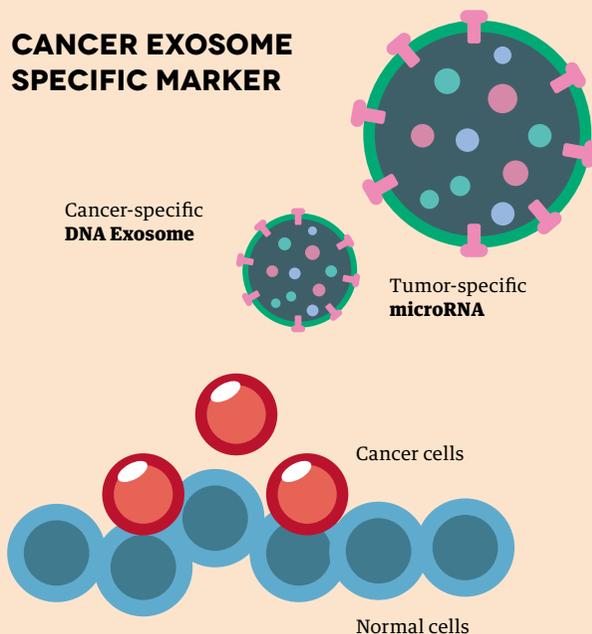
\*1 Short RNA consisting of about twenty base pairs that regulate various biological functions. Over two thousand kinds of human miRNAs have been found so far. miRNAs are related to the symptoms of diseases such as cancer in terms of the onset of the disease and cell multiplication.

## OUR GOAL

For early detection of cancer



## CANCER EXOSOME SPECIFIC MARKER



of miRNAs done on blood samples from the National Cancer Center Japan's bio bank<sup>2</sup>. Japanese manufacturers have also developed diagnostic devices that detect miRNAs, making the creation of a countrywide system of effective cancer screenings more of a reality. Building a database for miRNAs for different types of cancer and the development and basics of diagnostic technology have been settled, and the project will now enter its application phase.

The thirteen types of cancer this method can now pinpoint are gastric, esophageal, lung, liver, biliary tract, pancreatic, bowel, ovarian, prostate, bladder, breast, sarcoma and glioma. Prospective clinical research commenced in August 2017 at the National Cancer Center Hospital. Data was collected from the blood of three thousand patients diagnosed with cancer, and safety and effectiveness verifications were carried out. The

center is intent on improving screening accuracy and will collect clinical data on the scale of ten thousand people within the next few years. The next step is to create an insurance-based medical service system.

"The blood-test diagnosis has only a minimal physical impact, and the estimated cost is 20,000 yen (approximately US\$182)," explains Ochiya. "If medical insurance covers this testing, cancer screenings will be less expensive. All that will change cancer screenings dramatically."

If cancer can be detected early, the treatments administered will be even more effective. In addition, greater numbers of people being able to get on with their lives even while suffering from cancer would translate to increased productivity on a national level, and lower medical costs. This is a screening method that holds tremendous promise. **17**

<sup>\*2</sup> Refers to both the facility and the mechanism used to store information related to medical examinations and tissue and blood specimens for medical research.



# Shaping Things That Endure

*Australian potter Euan Craig has shaped his craft in Japan for decades, following a folk craft tradition that blends creativity and beauty with utility.*

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**NICHOLAS RICH**

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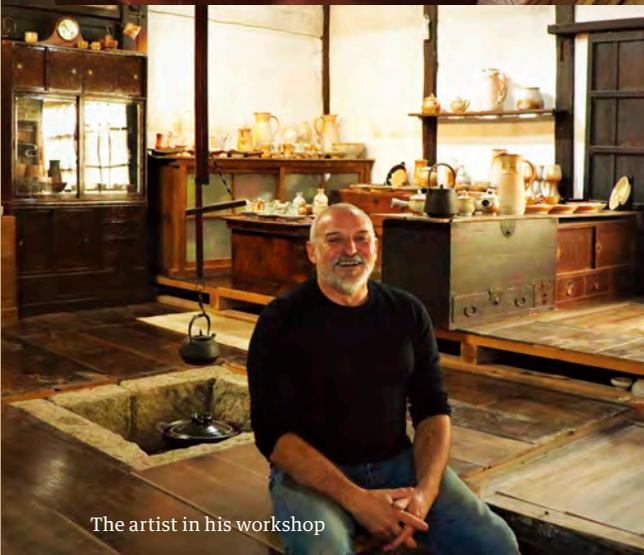
**J**APANESE pottery comes in many varieties. One of them is Mashiko ware, produced in the town of Mashiko in Tochigi Prefecture since the late Edo Period (1603-1867). The area's high-quality clay and proximity to the large Tokyo market made Mashiko into one of Japan's leading pottery regions. Mashiko ware includes many everyday items such as braziers, water jars and clay pots.

Euan Craig's life in Japan began in Tochigi with Mashiko's pottery community, but he first sat at a potter's wheel in Australia. Born in Melbourne in 1964, he began to think of his future when he was just fourteen. His choice of career was more of an objective calculation than a calling. "I wanted a job I wouldn't retire from, where I could forge my body and work with my hands. It also had to include my interests in science, art and philosophy," he says. Ceramics met all of these requirements.

Euan ran a small ceramics workshop in Swan Hill for four years after graduating with a BA in ceramic



Euan's works on display



The artist in his workshop



Euan's works are beautifully rustic



The old farmhouse in Minakami where Euan lives with his family

design from La Trobe University in Bendigo. During that time, a Japanese friend introduced him to the pottery community of Mashiko.

In January 1990, Euan set off on a life-changing pilgrimage. The town of Mashiko is the mecca of Mashiko ware, and gained enormous attention from the *mingei* folk-art movement led by Living National Treasure Shoji Hamada in the 1920s. "I studied Japanese ceramics and folk-art movements in university and had heard of Mashiko, so I really wanted to go there someday," states Euan.

Euan became an apprentice of Tatsuzo Shimaoka, a student of Shoji Hamada and Living National Treasure himself. Euan spoke no Japanese upon arriving in Japan, but he studied hard while training under Shimaoka and also learned the fundamental *mingei* teaching: *mingei* works are made by and for the common people, and are beautiful due to their rusticity and utility. Euan opened a studio in 1994, and lived in Mashiko for twenty-one years in total. He integrated with the community and met his wife there. As a member of the Japan Mingei Association, he firmly believes in the holistic relationship of creativity, craft, and the beauty of usefulness.

After his shop and kiln were ruined in the 2011 Great East Japan Earthquake, however, he moved to the town of Minakami in Gunma Prefecture, with his livelihood and his family's safety driving his decision. He now lives in an old farmhouse in Minakami with his wife and four children. His large workshop and gallery are set up inside the house, with a fireplace for winter work, a dirt floor, and large windows that let in ample sunlight. Euan draws water from the well outside, and shapes his wares using a foot-powered potter's wheel.

Euan says he is proudest of his plates and other tableware. "Meals bring people together and nourish them—just like art." He is collaborating with three restaurants near an art shop in Tokyo to make works to fit the cuisine of their special menus. He plans to hold a 25<sup>th</sup>-anniversary exhibit at the same art shop in November 2018.

Euan is pleased by that milestone, but his idea of success is something different. "I create beautifully simple and practical items that people will continue to use every day of their lives, and will remain even after I'm gone. That is the art of everyday life." His work is fundamentally tied to the daily existence of other people, and to enriching their world. 

*Behind the story of cup-type instant noodles are the setbacks and challenges that the inventor of instant noodle experienced during his quest to make them a global food.*

# Instant World Cup

HELEN LANGFORD-MATSUI



A cross-section of Ando's Cup Noodles

CUP-TYPE instant noodles are now a common dish for people around the world. Affordable, convenient, and now more nutritious than ever, they satisfy the various needs of consumers.

The inventor of instant noodles, Momofuku Ando, had dreamed of developing ramen noodles that people could eat anywhere conveniently. The founder of Nissin Foods, he encountered a cultural and culinary roadblock when he traveled to the United States in 1966 to introduce supermarket buyers to his Chicken Ramen, the world's first instant noodles. As Haruka Aoki from the Corporate Communications Division at Nissin Foods Holdings explains: "At the time, Americans did not possess chopsticks or the right bowls for preparing instant noodles."

Ando watched as the supermarket buyers—lacking the proper bowls and utensils—broke the noodles

apart and placed them inside paper cups, poured hot water on top and then ate the noodles with forks. He realized that the key to making instant noodles a global dish was to adapt them to food cultures around the world.

After returning to Japan, Ando started developing a new instant noodle product stored in a heat-resistant container to allow consumers to hold the container in one hand while eating the noodles. He tested close to forty different prototypes before arriving at the ideal-sized cup.

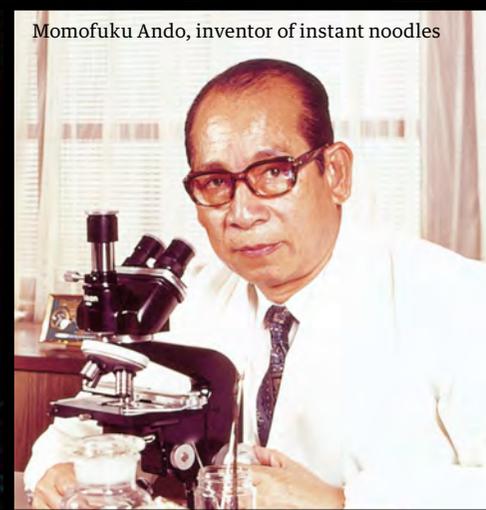
Putting the noodles upright inside the cup also turned out to be problematic: they would tilt or flip over, and not settle properly. So Ando seized upon the concept of "reverse thinking." Instead of depositing the noodles inside the cup during the production process, the noodles would be laid upside down, the cups would be placed over them, and be turned over later. His idea worked, and his factory went into mass production.



Young people trying Cup Noodles in 1971



A Cup Noodle vending machine



Momofuku Ando, inventor of instant noodles

In 1971, Nissin's Cup Noodles—the world's first cup-type instant noodles—launched in Japan. The benefits of this unique product were not fully understood at first, and many stores would not place Cup Noodles on their shelves. But when sold in vending machines that also dispense hot water, the product became a big hit. Two years after achieving success in Japan, Cup Noodles crossed the Pacific and the product was marketed in the U.S.

In 2017, approximately 21.2 billion servings of cup-type instant noodles were sold around the world. Although the tally was less than the 78.9 billion units of bag-type instant noodles purchased, cup-type instant noodles now hold over half of the instant noodle market in countries such as Japan, Mexico, Chile, Costa Rica, Guatemala, Germany and Spain.

Cup-type instant noodles often reflect the respective dining cultures of the countries where they are marketed, both in local tastes

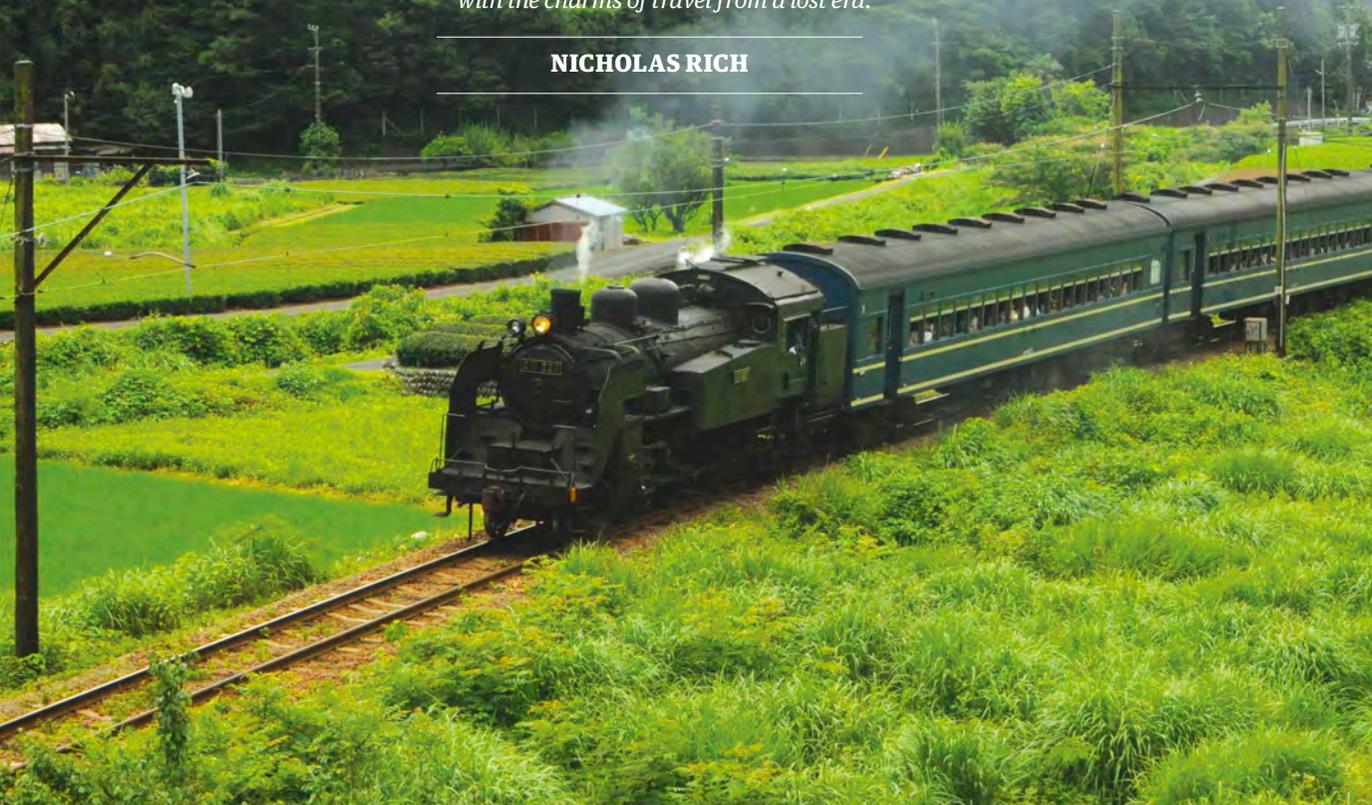
and ingredients and even the texture and length of the noodles. Even the size of the cups varies. “In the Philippines it's customary to eat smaller amounts much more frequently, so it have been popular for smaller cups in that market,” explains Daisuke Okabayashi, the manager of the Corporate Communications Division at Nissin Foods Holdings.

As times and tastes change, cup-type instant noodles continue to evolve. Ever since the mid-1990s, as interest in healthier eating habits began to rise, the product has gone through gradual improvements. Consumers can now choose from a variety of options, including products featuring nonfried noodles, dietary fiber, low sodium, lower calories and larger servings of vegetables. There is no doubt that cup-type instant noodles will continue to change to suit consumer tastes. **7**

# History in Motion

*A journey on one of Oigawa Railway's steam locomotives connects people with the charms of travel from a lost era.*

**NICHOLAS RICH**



**O**IGAWA Railway, also known as Dai-Tetsu, operates two lines running for sixty-five kilometers in Shizuoka Prefecture. Determined to preserve Japan's steam locomotive (known as SLs in Japan) culture, the company was the first in the nation to bring these trains back onto the tracks.

Japan's first SL came from Great Britain in 1872, and SLs were widely used during the first half of the 1900s. After Japan switched to electric, diesel and other locomotives in the 1950s, however, they largely disappeared from service.

To prevent the loss of an essential part of Japan's train culture, Dai-Tetsu acquired its first SL train in 1976 and returned it to service. Since then, the company has beautifully restored three different types of SL trains and runs them nearly every day on their sightseeing lines.

Oigawa Railway's Kanaya Station is just across the platform from JR Tokaido Line's Kanaya Station, an hour and a half from Tokyo on the JR Tokaido Line. Five minutes on a local train from Kanaya Station, passengers will arrive at Oigawa Railway's main station, Shin-Kanaya Station. With pasteboard tickets in hand, passengers can experience rail travel as it was in an earlier age—a moving memory for train and history fans alike.

The sight of SLs stopped at the Shin-Kanaya Station platform is quite impressive. After the crew scoops coal into the furnace, a plume of steam and smoke bursts forth, accompanied by that iconic high-pitched whistle. A round trip, incidentally, consumes approximately one ton of water. The passenger cars have a relaxing interior with spacious seating and large windows from which to enjoy scenery or catch the cool breeze.



One of Oigawa Railway's steam locomotives



Take the train to enjoy the natural landscapes of Shizuoka



The perfectly restored carriages



Dream Suspension Bridge spans the Sumata River

Onboard, crew members sell souvenir pictures and SL-themed limited-edition toys and candy, creating a festival-like atmosphere. The conductors, known as “Mr. and Ms. SL,” are very friendly. The railway is also famous for the crew’s harmonica performances and a cappella renditions of various songs. SLs running between Shin-Kanaya Station and Senzu Station on the Oigawa Main Line take on the faces of Thomas the Tank Engine and his friend James, both especially popular with children, during a set period each year.

The scenery is different for each line. The Ikawa Line traverses the steeply undulating mountainous territory between Senzu Station and Ikawa Station, and uses a rack and pinion system to pull the train up the steepest slope of any track in the country. The Oigawa Main Line runs between Kanaya Station and Senzu Station. It passes under a suspension

bridge that spans the Oi River, and runs along the bank of the river over the course of the hour-and-a-half journey. In the summer, the verdant tea fields reflect the sunlight, and almost seem to be shining themselves.

Passengers getting off at Senzu Station can take a bus to nearby Sumata Gorge and enjoy a scenic hike through a forest to see the Dream Suspension Bridge. This 90-meter-long, 8-meter-high span sways over the shining, azure blue waters of the Sumata River, a tributary of the Oi River.

A ride on an Oigawa Railway SL is a romantic and nostalgic experience. Combining retro technology and timeless nature, this train service is an homage to the days of another age, and can truly be considered history in motion. 

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# AOI MATSURI



**T**he Aoi Matsuri, held every May 15, is one of Kyoto's three main festivals and is regarded as Japan's most elegant and charming festival. A national ritual since the Heian Period (794-1185), it's one of the few that preserve traditional dynastic customs.

Featuring over five hundred people dressed as Heian nobles, the procession goes from Kyoto's Imperial Palace to Shimogamo Shrine, and then to Kamigamo Shrine. Visitors can enjoy the festival from paid seating at Kyoto Gyoen National Garden or along the approach to Shimogamo Shrine.

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