CACCI

Food & Agriculture Newsletter

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Message from the Director-General

Greetings from CACCI!

As Director-General of CACCI, I am pleased to present the tenth issue of the Newsletter of Asian Council on Food and Agriculture (ACFA) to all our colleagues in the food and agriculture sector.

This issue highlights the trends, the latest news and interesting reports on food and agriculture in the Asia-Pacific region. I hope that you will find the articles included in this Newsletter of great value, and look forward to your contribution to the Newsletter in the future.

Since the establishment of ACFA in 2011 during the 79th CACCI Council Meeting held in Istanbul, Turkey, we have found this Council a valuable platform for information exchange and networking for all representatives from the region's food and agriculture industry. Therefore, all CACCI members are encouraged to take advantage of the Council and the Newsletter as channels to voice their opinions and viewpoints.

With best regards.
Ernest Lin
Director-General
CACCI

Food science caught between the head and the heart

By Faye Flam

A few weeks ago, a scientific claim linking canola oil to Alzheimer's disease risk raised an intriguing question: When it comes to healthy eating, do we have to choose between the head and the heart? In other words, is it possible that foods promoted as good for cardiovascular health, such as canola oil, are bad for the brain?

There's surprisingly little information out there on what to eat for brain health. The vast majority of nutrition research is aimed at the heart. Why wouldn't scientists want to focus on maintaining the seat of consciousness, memory, creativity, love, learning and joy, as opposed to a glorified pump?

Sure, heart disease is the leading cause of death in the United States. But disorders of the brain may cause more suffering, and the numbers are growing. According to a new report, more than 6 million Americans currently live with Alzheimer's disease, and by 2060, that will rise to 15 million. Given the choice, I'd much rather live with a faltering heart and a mint-condition brain than the other way around.

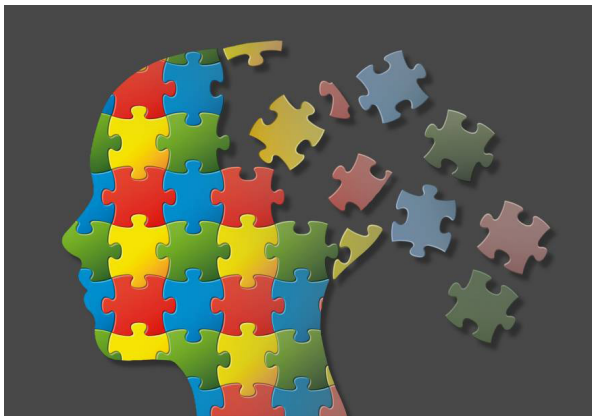
Since many of us are starved for information on brain health, it's not surprising that news outlets played up the scare factor on the canola oil study, even though the deleterious effect was found in mice and therefore may not apply to humans.

The researchers, from Temple University in Philadelphia, conducted two studies, the first using olive oil and the second, canola, which is found in many processed and pre-prepared foods. They used special mice with a genetic predisposition to develop Alzheimer's disease, and gave one group a few drops of olive oil each day. The mice given olive oil did slightly better on memory tests, and, upon dissection, had fewer plaques in their brains than did those fed a standard mouse diet.

When they tried the same experiment with canola oil, they found the mice getting the extra oil did worse on memory tests and had built up more brain plaques. The results may not be sufficient to make anyone give up canola oil, but they do make an important point — food affects the brain.

Some media critics, such as Mary Chris Jaklevic at

Health News Review, chastised reporters for not putting this single study into context. But what context? Not that many scientists specialize in diet and the brain, and when I sought them out, people kept pointing me back toward someone I'd interviewed in 2011 — Joseph Hibbeln, a biochemist and psychiatrist working at the U.S. National Institutes of Health.



His research has focused on a potential positive influence of one kind of fat — omega-3 fatty acids, which are found in seafood and some plants. He has led studies that suggested a connection between low intake of omega-3s and a host of ills, such as suicide, violence and obesity. Drew Ramsey, a clinical psychiatrist specializing on nutrition, also notes that some controlled clinical trials have suggested omega-3 fatty acids improve symptoms of depression.

That's the uncontroversial part, since omega-3 fatty acids are approved by the American Heart Association as part of the family known as polyunsaturated fats. Where it gets tricky is in the biochemistry, because, as Hibbeln explains, there's a chemical competition between omega-3s and another kind of allegedly heart-healthy polyunsaturated fat: omega-6, which is found in cottonseed, sunflower, safflower and corn oils, as well as corn- and soy-fed factory-farmed poultry. (Canola and olive oil are in a different category called monounsaturated fats.)

The problem with omega-6 fatty acids, Hibbeln says, is that the more you eat, the lower the level of omega-3 fats in your bloodstream given the same omega-3 intake. This happens because both kinds of fat compete for an enzyme that converts them to a form the body can use. So if you care about eating to keep your brain healthy, evidence would suggest keeping your omega-3 levels high, and that would mean not foiling your effort by ingesting omega-6 fats.

The ratio of omega-6 fats to omega-3s has changed drastically over the last 75 years, as omega-6 fats went from about 1 percent to 10 percent of the human diet, and blood levels of omega-3 have plummeted. In the story I wrote in 2011 about Hibbeln's work, he called it "the greatest dietary transformation in the history of Homo sapiens."

Whether omega-6 fats are heart-healthy depends on who you talk to. The American Heart Association's recommendations continue to promote all polyunsaturated fats as healthy, and to demonize saturated fats — the kind found in butter and other full-fat dairy products. There was one very large, controlled clinical trial comparing the effects of a typical diet to one in which most of the saturated fat was switched out for omega-6 rich corn oil. A re-analysis published last year concluded that people getting the corn oil had lower cholesterol numbers but were more likely to die.

Saturated fat is neutral in the tug of war between the omega-6 and omega-3 fats. There's a body of studies suggesting that saturated fats are bad for the heart — but much of this was done in rabbits. The human studies — both observational and clinical — have recently been called into question and continue to generate controversy.

What's a health-conscious person to eat when the science is in such a state of disarray? The only fats that seem to be uncontroversial are omega-3 fats and olive oil. Canola oil is chemically similar to olive oil, but these new studies suggest they're not interchangeable. As Hibbeln told me, the brain makes up 2 percent of the body by weight and uses up 25 percent of the energy we consume. Focusing more research on how to feed it seems like a no-brainer.

Source: Japan Times, January 8, 2018

Blockchain, technology behind Bitcoin, emerges as key tool in food safety battle

By AFP-JIJI

The food industry is turning to the same technology used by virtual currencies to strengthen food safety and inventory management by tracking meats and crops from farm to table.

Working with IBM, retail giant Wal-Mart Stores Inc. is testing the technology system on mangos in the United States and pork in China.

Blockchain, the underlying technology behind virtual currency bitcoin, is a digital system that allows parties to transact using individual codes for goods.

"I see a lot of potential to create what I call a digital and transparent food system," said Wal-Mart food safety vice president Frank Yiannas.

The technology enables different parties in the supply chain to share details such as the date an animal was slaughtered or the weather conditions at harvest time.

Data can be stored through a photograph on a smartphone that is transmitted onto a dedicated platform. The system also can also counter fraud and mistaken deliveries, champions of the technology say.

"The advantage of blockchain is that the ledger is immediately updated and all the parties have access to the latest information," said Bill Fearnley, Jr. an expert at market intelligence firm IDC.

Supporters of blockchain are especially keen to address salmonella and other food safety problems that can cause health scares that weigh on corporate reputation and damage sales.

The technology allows a more efficient response if there is a problem, enabling companies to locate the source of an incident more quickly, Yiannas said.

He pointed to a 2006 case where it took hundreds of investigators and two weeks to identify the source of bad spinach under a paper-based system.

But blockchain "generally takes days to trace," Yiannas said. "The more accurately you can track food, the better."

The other great virtue of blockchain is enhanced transparency by letting consumers look up key information on where food comes from, an asset amid growing concerns about genetically modified crops and artificial ingredients.

That additional transparency also can help promote more desirable practices.

British online startup Provenance used blockchain technology to test tuna caught in Indonesia to help corroborate claims the fish were responsibly caught.

The technology also has been embraced by companies in the jewelry business to fight the sale of "conflict diamonds," which come from war-torn regions.

"Our goal is to provide transparency at every step of a diamond's journey and ultimately reshape the way we trade diamonds globally," said Leanne Kemp chief executive of Everledger, a British company that tracks diamonds from the mines to jewelry stores.

But to completely function as a system, all the parties need to participate, Fearnley said.

Danish shipping giant Maersk estimates the technology could save billions of dollars by eliminating fraud and incorrect deliveries. It is testing the technology with container ships between Kenya and the Netherlands.

But the transition will require investment. A refrigerated product raised in Africa and shipped to Europe requires at least 30 people with some 200 interactions among parties, including customs, taxes, and food safety oversight.

Source: Japan Times, June 4, 2017

Supporters of blockchain are especially keen to address salmonella and other food safety problems that can cause health scares. | REUTERS

As millions go hungry, India eyes ways to stop wasting $14 billion of food a year

By Uzmi Athar / Thomson Reuters Foundation

For Bhaskar Kumar it is a struggle to name green leafy vegetables found in India for his homework, as his staple diet is rice and salt, with vegetables served only on festive occasions.

But the 8 year old from Pilakhana village in India's northern state of Uttar Pradesh decides not to ask his mother Shakuni Bai, aware she skipped dinner four times that week.

For Bai is among 194 million Indians going hungry daily, according to the United Nations' Food and Agriculture Organization (FAO), despite India wasting food worth about $14 billion a year, according to government figures.

India, one of the world's largest food producers, is trying to tackle waste during production, processing, retailing and consumption by funding internal initiatives and through partnerships on best practices and technology with overseas investors.

But many of those struggling to get enough to eat are concerned that progress is too slow in India, which ranked 100 among 119 countries in the 2017 Global Hunger Index, with 14.5 percent of the population undernourished.

Bai said her problems getting food came when three years of inadequate rainfall were followed by Prime Minister Narendra Modi's "demonetization" policy, where two of the highest denomination notes were scrapped in November 2016.

"I had my own land where I used to grow rice and wheat alternately but with three years of consecutive drought I mortgaged my land to pay the mounting debt," Bai, 42, said during an interview at her mud-and-brick hut in Pilakhana.

"I decided to give myself a last chance and was planning to pay the mortgage by farming as the forecast suggested good rain in the coming months but then demonetization happened. The little money I had saved to buy seeds became worthless," adding by the time she changed her notes the price of seed had soared.

Bai now works as a daily laborer, earning 120 Indian rupees ($1.87) a day, which is not enough to support her family of eight that includes five children.

The paradox of millions going hungry in India while food goes to waste is receiving increasing amounts of attention as the FAO stresses that one third of food produced globally for human consumption is wasted every year.

As the World Economic Forum has highlighted, food production is clearly not the main issue as India needs 225-230 million tons of food per year to feed its population and farm output in 2015-2016 hit more than 270 million tons.

Sharad Pawar, a former agriculture minister, once told

parliament that nearly 40 percent of the value of annual production was wasted, with crops left to rot in the sun without storage or transportation, or eaten by insects and rats.

Wastage has a knock-on effect on the environment as well, as the efforts made to produce it generates greenhouse gases, uses water, and can lead to deforestation.

But while India's Amul, the world's largest dairy cooperative, has been widely praised for successfully processing huge amounts of milk quickly and safely for years, spurring the "White Revolution" in India, authorities have struggled to stop vast amounts of yearly grain waste.

The Food Corporation of India, the nation's main grain procurement agency set up about 50 years ago, now sits on mounds of rice and wheat and has faced criticism for being too weighed down by process and bureaucracy to solve the problem.

A report by the government's Comptroller and Auditor General published last year involved a detailed analysis on shortcomings of the FCI including wastage, misappropriation, and fraudulent payments.

This file photograph taken on Oct. 19, 2015, shows four-year-old malnourished Indian child Shahadat Hussein as he lies on a bed at the Nutritional Rehabilitation Centre at Darbhanga Medical College and hospital in Darbhanga in the eastern Indian state of Bihar. | AFP-JIJI

An official with the FCI, who wished to remain anonymous, said a key reason for food waste is damage caused by a lack of infrastructure which it is trying to overcome by investing in building new cold storage facilities over the next five years.

But while this food is wasted, millions of people are going hungry, with 38.4 percent of children under five years old suffering from stunted growth, according to the Global Hunger Index.

"This reflects the chronic lack of balanced food," said Ashish Agarwal, a food rights activist with the UDAAN Society, a nonprofit group that focuses on rural development.

"The under-5 mortality rate is 4.8 percent in India, partially because of inadequate nutrition and unhealthy environment."

Critics are concerned that it is not enough to just focus on boosting grain storage, as 350 million of India's 1.3 billion people live in rural locations where electricity is unreliable, limiting the use of cold storage facilities.

They want to see improved transportation to move food supplies quicker, and faster processing so less food is wasted.

Raghav Rajan, a farmer from Chakwas village in India's western Rajasthan state, shies away from government storage, saying traditional storage methods are better to preserve food.

"We store fruits and vegetables with neem leaves (a medicinal herb) which act as a pest resistant agent. We also use dry chillies to kill any insects infecting the grains," said Rajan, talking in a field near his house.

He said he preferred to do this as the 1,900 or so storage facilities built by the government around the country are mostly city-based and using them incurred transport costs. "Moreover, there is no surety that our crops won't rot in these facilities," he added.

The Indian government, however, has said it is trying to stop food losses and address hunger in various ways, including changing distribution strategies and using technology.

The Ministry of Food Processing Industries is working with private sector companies to provide pre-cooling and chilled storage from the farm to the consumer, with about 228 projects under way by August last year.

Shobhana Pattanayak, secretary in the Ministry of Agriculture and Farmers' Welfare, said the government gives out excess grain through a public distribution system.

Under this system, the government buys food grain from farmers and distributes it at subsidized prices to the poor, selling wheat and rice at two and three rupees a kg (3 and 5 cents) compared to the market price of 12 and 13 rupees (19 and 20 cents).

But the system has come under fire from some locals who say the quantity and quality can be erratic, with grain from the distribution system being siphoned off by middlemen who sell it at higher prices than the market rate.

"The superior quality food grains are sold in the black market by the middlemen and the bad quality wheat and rice is given to us at a subsidized rate," said Ali Sher, head of Pilakhana village in Aligarh district of Uttar Pradesh state.

"A small quantity of good quality rice is mixed with a rotten portion to increase the volume and sold to us at subsidy. It is better to starve than to eat rodent-infested food."

Sagheer Ahmed, an agricultural sciences professor at Aligarh Muslim University, said a lack of storage was the main reason for wasted food grain along with no concrete system for processing perishable fruits and vegetables.

"There is also a huge communication gap between farmers and scientists and … they fail to benefit from the technologies developed by us."

Source: Japan Times, January 9, 2018

Students win prize with work on plant perception

By Chen Yan-ting and Jonathan Chin / Staff reporter, with staff writer

A pair of vocational high-school students won a prize in the food and agriculture division of the Taiwan National Science Fair with their experiment on plant extra-sensory perception.

National Chiatung Agricultural Vocational Senior High School's Shih Yi-ping and Lin Chin-hua, of the farm management department and commercial electronics department respectively, said they were inspired by Cleve Backster's ideas.

In the 1960s, Backster, a CIA interrogator, claimed that plants are sentient and capable of a form of telepathy.

Polygraph machines connected to trees detected electric impulses that suggested they possessed emotions and an ability to remotely predict human thought, Backster said.

Lin and Shih said they were intrigued by Backster's findings, but replicating his experiments proved difficult as their school does not have polygraph machines.

The two used optical heart-rate monitors found in smartwatches to measure the state of potential energy in water stored in vanilla plants.

The monitors measure heart rate by photoplethysmography, a method that uses light to detect changes in the pressure of blood flow, they said.

The principle could be applied to measure the internal hydraulic pressure in the vascular tissues of clean and uninjured vanilla leaves, they said.

Measurements taken before and after watering the plants showed significant differences, they added.

The two measured the plants at various times, which they then correlated to the contemporaneous readings of the plant cultivator's blood pressure levels.

The experiments confirmed that the potted vanilla plants respond to the moods of their cultivators, Shih and Lin said.

From left, National Chiatung Agricultural Vocational Senior High School teacher Wu Chia-jung, students Shih Yi-ping, Lin Chin-hua and teacher Lin Yu-tse pose in Pingtung County

The plants' extra-sensory perception allowed the students to teach the plants to differentiate colors, cucumbers that were raised organically from those grown with chemical fertilizers, and photographs of healthy livers and livers affected with fibrosis, they said.

Shih and Lin said they were surprised and happy to find out that their experiment supported Backster's ideas, adding that they found plants have the ability to "communicate" fear, happiness, affirmation and negation.

Shih and Lin could have won the top prize in the botanical division at the science fair had they entered the competition, a school official said.

To the school's knowledge, the students' project was the only experiment in the world, other than Backster's original experiments, that supports the theory of plant sentience and perception, the official said.

Source: Taipei Times, May 23, 2017

Japan perks up to serious coffee

By AFP-JIJIstaff writer

Takayuki Ishitani serves coffee for the judges of the country's coffee Barista Championship in Tokyo in September. | AFP-JIJI

Need a pick-me-up? Try a lychee-flavored coffee infused with jasmine, or a "Chardonnay" espresso served in a wine glass — whatever your taste, Japan's swashbuckling baristas are bringing some serious sex appeal to the drink.

In a country famous for its tea, the Japanese are increasingly turning to coffee as a quick fix to help ease the daily grind. Hipster cafes are popping up everywhere, offering exquisitely curated beverages to satisfy even the fussiest of caffeine addicts.

Japan imports over 430,000 tons of coffee a year — behind only the United States and Germany — and boasts some of the world's top baristas.

"The fact that tea culture already existed in Japan has helped cultivate an appreciation for coffee as a luxury item," Miki Suzuki says after recently being crowned Japan's champion

barista.

"Japanese people have an extremely sensitive palate so they can appreciate subtle differences in flavor," says the 32-year-old.

Suzuki impressed judges with a nitrogen-charged beverage — a technique often used by craft beer breweries to get a rich froth — which also had delicate citrus tones. For added serving style she decanted it into champagne flutes.

"Actually I didn't even like coffee at first. Now my goal is to become the first female barista to win the world title," she says.

Japan has a fine pedigree at the World Barista Championship and Suzuki will look to emulate 2014 winner Hidenori Izaki at the competition in Seoul next year, and go one better than Yoshikazu Iwase, the 2016 runner-up.

Along with the likes of Suzuki and three-time national runner-up Takayuki Ishitani, their creativity and panache have made coffee-making cool.

Miki Suzuki, winner of Japan's coffee Barista Championship, brews coffee during the competition in Tokyo in September. | AFP-JIJI

"With a flick of the wrist here and a little bit of flair, baristas are making coffee sexy," says Ishitani. "It's part of a barista's job to enchant the customer and be a bit of a smooth operator, like a bartender. The performance is part of creating an atmosphere to please the customer."

Ishitani whipped up a bubbling potion mixed with dry ice, fragrant herbs and orange honey at the Japan Barista Championship but insists he is on a "never-ending quest" for the perfect cup of coffee.

"It's all about perseverance," he says between pouring frothy cappuccinos at a trendy surf shop in Tokyo's Daikanyama district. "Japanese people pay meticulous attention to detail. You're not competing against other baristas, the battle is against yourself."

The first documented evidence of tea in Japan dates back to the ninth century, when Buddhist monks brought it back from China.

However, coffee only became popular in Japan after World War II, when the country resumed imports.

Starbucks now peddles its wares in more than 1,000 stores in Japan, while bottled and canned coffee sold in vending machines or convenience stores have long been a cheap favorite of the busy salaryman.

Despite the fact serious roasters turn their noses up at Starbucks, Japan has come a long way since the smoke-filled dives of the 1980s bubble era, which served coffee with antiquated percolators — though many still survive.

Coffee sales have long outstripped those of green tea and hip new hangouts with latte artists sprouting up in Tokyo and across Japan could easily be mistaken for New York or London.

"Definitely there is an intense interest in the minutia of coffee-making in Japan," says American Scott Conary, one of the judges at the Japan Barista Championship. "You're seeing more cafes with better skills and better coffee."

While Japan's highly ritualized tea ceremony is increasingly seen as a remnant of a bygone age, Ishitani doesn't take his art too seriously.

"I don't think it's necessary to drink coffee as reverently as we do tea," he says. "Just knock it back — it's really something that's there to help the conversation flow."

Source: Japan Times, January 9, 2018

Japan's young farmers pin hopes on technology to revitalize agricultural industry

By Kaori Kaneko / Reuters

A new breed of younger, business- and tech-savvy farmers is transforming Japan's shrinking agriculture sector with cutting-edge techniques and marketing strategies, giving new hope to an industry in slow decline.

Hiroki Iwasa, a 40-year-old IT entrepreneur with an MBA, grows strawberries in seven high-tech greenhouses where computers set the temperature and humidity to optimal growing conditions and ensure the rows of bushes are sprayed with water at precise times.

He markets his Migaki Ichigo-brand strawberries directly to fancy department stores in Tokyo, where they go for as much as ¥1,000 apiece, as well as to customers in Hong Kong, Singapore, Taiwan and Thailand, where Japanese produce has an excellent reputation.

Such changes, while small, come as Prime Minister Shinzo Abe pushes to reform the nation's hidebound farm industry, where small-plot holdings still dominate, the average farmer is over 66 years old and the sector's contribution to the economy has fallen by 25 percent since its peak in 1984.

They should also make Japan more resilient if the United States tries — as Trade Representative Robert Lighthizer has hinted — to pry open Japan's markets for rice and beef, which are protected by tariffs.

Iwasa was running an IT company and working on an

Hiroki Iwasa, a 40 year-old IT entrepreneur with an MBA, checks strawberries at his high-tech greenhouse in Yamamoto, Miyagi Prefecture, in June. | REUTERS

MBA in Tokyo when his coastal hometown of Yamamoto in Miyagi Prefecture, an area famous for strawberries, was hit by the March 2011 tsunami.

He rushed to help with relief efforts and later saw an opportunity to combine his tech skills with the specialized know-how of a local farmer.

He now heads six-year-old GRA Inc, which has 20 full-time employees and 50 part-timers, including four dedicated to managing overseas orders.

"Farmers' intuition and experience may not always result in a good harvest. So it's crucial that we capture that as explicit knowledge in technology and automation, and use that to increase productivity," Iwasa said. "Also nurturing professional farm managers is needed."

By leasing surrounding land, Iwasa expanded his farm to 2 hectares, which is about 10 times the size of an average strawberry farm in Japan.

Such larger-scale agribusinesses, many using new technologies, are the future, said Kazunuki Ohizumi, professor emeritus at Miyagi University who has been studying farming trends in Japan for decades.

"Large-scale farmers are the ones to revitalize Japan's agriculture, which will be changed significantly," he said. "Of course, IT, robots and artificial intelligence are needed. They will generate jobs to handle such technologies."

The shift is already underway toward company-run farms, whose numbers jumped to 20,800 last year from 8,700 in 2005.

The number of younger people working in agriculture is slowly rising. The farm industry added just over 23,000 workers under the age of 49 in 2015, up from less than 18,000 five years ago.

Ohizumi predicts that sales from large farms — those with more than ¥50 million in sales — will rise to about three-quarters of total sales by 2030, up from 41 percent in 2015.

Shuichi Yokota, a 41-year-old rice farmer in Ibaraki Prefecture, said Japan's rice farmers have been protected by government subsidies and tariffs for too long.

Japan imposes a hefty ¥341 per kilogram tariff on imported rice, outside of its World Trade Organization tariff-free obligations, while the government offers subsidies of up to ¥105,000 per 0.1 hectare.

Farmers should aim to become just as globally competitive as the country's famed car brands Toyota and Honda, Yokota said.

"If you fail business management, you have to leave. It is the same in other industries," he said. "If you cannot lower production costs or secure clients, you will go bankrupt."

When Yokota became a farmer after graduating from college 20 years ago, his family had about 16 hectares. As older farmers in the area retired, he started leasing their land.

He now oversees a 140-hectare rice-farming corporation, far bigger than the average 3-hectare farm.

The company grows several different varieties so that planting and harvesting are spread out, and uses electronic sensors to measure water levels and temperature in the paddies as well as the condition of the rice.

"Government subsidies will have to end eventually, as they are not sustainable," Yokota said. "Farmers should produce goods that have a market."

A farmer transplants rice in Ryugasaki, Ibaraki Prefecture, in June. | REUTERS

Surce: Japan Times, January 8, 2018

Can agriculture stem its effects on climate in 2018?

By Thin Lei Win / Thomson Reuters Foundation

After Rene Castro-Salazar attended the first U.N.-led climate talks in Berlin in 1985 as Costa Rica's environment and energy minister, he tried to talk about agriculture and climate change — but few wanted to join the conversation.

"There was always opposition — and we couldn't understand why," said Castro, now assistant director-general at the United Nations' Food and Agriculture Organization.

To him, the need to tackle the topic was clear. Agriculture, forestry and other land uses together account for nearly a quarter of the greenhouse gas emissions heating up the planet, according to the FAO.

Cutting these is essential if the world is to keep global temperature rise to a manageable level, said Castro.
Farms and forests can also store large amounts of carbon, and

simple actions by all countries could result in immediate environmental benefits, he said.

In the early years, the climate negotiations focused on

reducing emissions from the energy sector — the largest emitter — while the relationship between agriculture and climate change was not fully understood.

Later on, poor states feared discussing the linkage would result in obligations for them to curb emissions from farming. Rich nations worried they would have to pay for poor farmers to adapt to a changing climate.

At November's climate talks in Bonn, the stalemate was finally broken, with nations agreeing to move forward on issues related to agriculture and climate change.

"There is now clearly the political will to see this resolved," said Margarita Astralaga, director of environment and climate at the International Fund for Agricultural Development. Many hope it will lead to the development of farming systems that are more resilient to weather extremes and can feed a growing population whose diets are shifting to more meat and dairy, without corresponding increases in emissions.

Andy Jarvis, research director at the Colombia-based International Center for Tropical Agriculture, describes the relationship between climate and agriculture as an "unhappy marriage."

"(They) are absolutely intertwined and completely connected to each other but actually pretty antagonistic," he said, pointing to how crops are battered by climate extremes while farming emissions exacerbate global warming.

Off the rails

Scientists have warned that world temperatures are likely to rise by 2 to 4.9 degrees Celsius this century compared with pre-industrial times.

This could lead to dangerous weather patterns — including more frequent and powerful droughts, floods and storms — upping the pressure on agriculture. Curbing climate change will require overhauling the world's food production and distribution system, which is "off the rails," said Olav Kjoerven, chief strategy officer at the Oslo-based EAT Foundation.

Hunger is on the rise, biodiversity is being lost and poor diets now pose a bigger threat to human health than alcohol and tobacco, said Kjoerven, a former senior U.N. official.
Educating consumers will be key to changing that, especially in developed economies where there is high consumption of red meat, responsible for more emissions than other types of food, he said.

"People vote three times a day for a food system they want, in terms of the food they buy. There is enormous power there," he said.

EAT has commissioned scientists to produce a report next spring about what constitutes a healthy diet in a sustainable food system.

FAO's Castro said making water usage more efficient — 70 percent of the world's freshwater goes into agriculture — and rehabilitating 2 billion hectares of degraded land could deliver quick wins.

Livestock, meanwhile, account for nearly two-thirds of agricultural greenhouse gas emissions, but combining trees, crops and animals in "silvopastoral" systems can offset some of those emissions and boost the quality of pasture, he added.

In Brazil, a major beef exporter, state agricultural research agency Embrapa, is testing this practice, he added.

Another challenge is to boost food production without damaging forests, said IFAD's Astralaga.
Agriculture is responsible for more than three-quarters of global deforestation, and if the trend continues, about 10 million square km of land will likely be cleared by 2050, she noted.

A 2016 report from the FAO said it will be possible to increase food security while maintaining or increasing forest cover, identifying 22 countries — including Gambia, Chile, Tunisia and Vietnam — that have managed to do so.

In the know?

To duplicate such practices, especially in the developing world, will require sharing of knowledge, experts say.
Yet many nations still lack meteorological information that can improve crop and livestock production, said FAO's Castro.

"They don't know if the rain is coming … if a drought is coming. They're blind in terms of agricultural planning," he said.

Much of the information they need is available, said Jarvis. CIAT and the International Food Policy Research Institute are leading a push to use big data in agriculture, and get it into the hands of poor farmers in places like Colombia and Honduras.

"As a result of that information, (you can) make much

more strategic decisions in terms of when to plant, how to plant, what variety to plant," he said.

Another pilot run by Microsoft and the International Crop Research Institute for the Semi-Arid Tropics sends text messages and automated calls to tell Indian farmers when to sow their seeds or warn them of a pest attack.

But more investment and political will are needed to expand such projects, Jarvis said.

EAT Foundation's Kjoerven said the world has "barely started to fight this battle" to make agriculture greener — and the coming few years will be decisive.

"The real test is whether we start to see countries passing different legislation, businesses and industries coming up with different ways of doing business in the food sector, and changes in consumer preferences and choices," he said.

Source: Japan Times, January 2, 2018

Japan NGO Carabao Family helps sustain small Philippine farms, one water buffalo at a time

By Keiji Hirano

For the past three decades, a Japanese nongovernmental organization has been supporting farmers in the Philippines by providing them with the workhorse of Southeast Asia: the water buffalo.

To date, Carabao Family has donated around 100 of the animals to farmers on Leyte Island, where they use them to plow the earth. The carabao is a water buffalo native to the Philippines.

"Providing tractors may be one option, but if they break down then technology for making repairs and parts become necessary," said freelance journalist Chieko Takemi, who organizes the program. "In contrast, water buffaloes help the farmers with feed and water, and they reproduce themselves."

Takemi, 77, started the NGO in 1987 after visiting Leyte with a friend and seeing how farmers suffered in poverty, due in part to the legacy of colonial rule that still affected the agrarian system there.

"They didn't have their own houses or land," Takemi said. "They cultivated landowners' farms, and depended on the landowners' seeds, tools and water buffaloes.

"If the farmers had their own buffaloes — a mainstay of traditional agriculture — they would be able to cut back on what they paid landowners in rent, if only a little," she said.

Soon after its founding, the NGO urged the Japanese public to donate ¥200 a month toward the water buffaloes. "In those days, coffee shops usually charged around ¥200 a cup, and we hoped to get as many people as possible to join us by having them give up a cup of coffee a month," Takemi explained.

With the ¥2,400 ($21) annual membership fee left unchanged over the past 30 years, Carabao Family currently has about 60 donors. As it costs around ¥60,000 to purchase a water buffalo, there were years when the NGO could donate only one animal.

"Despite the annual ups and downs in the size of the donations we receive, our staff and I have visited Leyte regularly to hand over the money directly and to make sure the buffaloes go to the local farmers," Takemi said.

"We also keep talking with the farmers to see if they face fresh challenges," she added.

In November 2013, Leyte was badly damaged by supertyphoon Haiyan, locally known as Yolanda, which caused massive loss of life and devastated properties and infrastructure.

To mark the 30th anniversary of its founding, Carabao Family is planning to build a community center on Leyte that can also be used as a shelter in case of emergencies.

Designed by a Japanese architect, the building will consist of a semi-basement made from reinforced concrete and an upper structure made from local natural materials, such as bamboo, abaca and rattan.

The basement section will be used to store food but can serve as an evacuation shelter in case of natural disasters, while the upper part will be a place where people can meet and work.

The center will be built at what is being called the Carabao Family farm — a 6-hectare plot purchased by the NGO in the municipality of Kananga.

Carabao Family is seeking donations for the project, while calling on corporations to provide cement, iron frames, rope, timber and canvas.

In addition to donating buffaloes, the NGO organizes study tours to the Philippines so that participants can learn how the country suffered during World War II and how past tragedies continued to burden communities well after the war ended.

"We have heard what war survivors have to say, so we can share an understanding of history beyond borders," Takemi said.

On her numerous visits to the Philippines, Takemi has encountered former "comfort women" forced into Japanese wartime brothels there.

To keep their voices alive, she directed a documentary

A farmer works with a water buffalo, donated by a Japanese non-governmental organization, at Carabao Family farm in Kananga on Leyte Island, Philippines, on Jan. 29, 2016. | COURTESY OF CHIE-KO TAKEMI / VIA KYODO

film called "Katarugan! Justice for Lolas!" in 2011, in which former comfort women testified about their experiences and the hardships they suffered as a result. "Katarugan" means justice and "lola" means grandmother in Tagalog.

An English-version of the film has been screened in several parts of the world.

Looking back on Carabao Family's 30-year ties with Leyte, Takemi said, "A 10-year-old boy we met at the start of the campaign has become a 40-year-old farm manager there. I believe now we can pass the torch to such people."

The manager lives on the farm with his family where he operates the NGO's facility.

"It is great that we have spent these years together, and we will continue making efforts to jointly overcome the poverty caused by social and historical structures," Takemi said ahead of her next visit to Leyte for a reunion with farmers in August.

Source: Japan Times, July 21, 2017

Reviving Japan's Dairy Industry, One Milking Robot at a Time

By Aya Takada

Jin Kawaguchiya gave up a career in finance to help revive Japan's ailing dairy industry -- one robot at a time.

In a country that relies increasingly on imported foods like cheese and butter, Japan's milk output tumbled over two decades, touching a 30-year low in 2014. Costs rose faster than prices as the economy stagnated, eroding profit, and aging farmers quit the business because they couldn't find enough young people willing to take on the hard labor of tending to cows every day.

But technology is altering that dynamic. On the northern island of Hokkaido, Japan's top dairy-producing region, Kawaguchiya transformed the 20-cow farm he inherited from his father-in-law 16 years ago into Asia's largest automated milking factory. Robots extract the white fluid from 360 cows three times a day and make sure the animals are fed and healthy. The machines even gather up poop and deposit it in a furnace that generates electricity.

The number of dairies in Japan continues to drop, but the ones that remain are getting bigger and productivity per cow is increasing, according to Agriculture Ministry data. Photographer: Tomohiro Ohsumi/Bloomberg

"Without robots, I would have to hire as many as 15 part-time workers to take care of cows," Kawaguchiya, 44, said during an interview at the dairy in Kakuyama. "I can save 15 million yen ($146,000) a year thanks to them."

Kawaguchiya had no experience in farming before taking over the farm from his father-in-law, whose three daughters weren't interested in running a dairy that required them to manually attach milking tubes to the teats of each cows. Kawaguchiya says he quit a job as a manager in Tokyo for Shoko Fund & Co., a business lender, because he saw an opportunity to make a better living in agriculture, provided he could change the economics.

To add scale, he merged the farm with four nearby dairies to create Kalm Kakuyama, a stock company that now has 610 animals, including 380 cows purchased last year. About 250 are calves or pregnant females who aren't producing milk for the dairy.

Automation has transformed the business. After investing 1.5 billion yen to install the robots and the 150 kilowatt per hour generator about 14 months ago, Kawaguchiya says his raw-milk production will quadruple this year from 2015 to 4,500 metric tons, and reach 5,600 tons next year, almost 10 times the output of the average dairy farm in Japan. He's now the largest producer in western Hokkaido. With less time spent on manual labor, he can analyze data on milk output, quality and animal health to be more efficient.

Kawaguchiya isn't alone. The island has more than 100 milking robots, according to Shinichi Otsuka, the head of the agricultural technology department at the Hokkaido prefecture government.

With bigger and more efficient dairies emerging in Hokkaido, raw-milk output is recovering. In the first half of

Cows wait for their turn to be milked at a dairy farm operated by Kalm Kakuyama in Hokkaido. Photographer: Tomohiro Ohsumi/Bloomberg

Jin Kawaguchiya / Photographer: Tomohiro Ohsumi/Bloomberg

2016, production in Japan rose 1.1 percent from a year earlier to 3.78 million metric tons, heading for a second annual gain since touching 7.33 million tons in 2014, the lowest since 1984, according to the Agriculture Ministry. While the number of dairies continues to drop, the ones that remain are getting bigger and productivity per cow is increasing, the data show.

Mega Farms

"So-called mega farms are emerging in Hokkaido, increasing their presence in the Japanese dairy industry," said Koichiro Omoto, head of the information planning department of Japan Finance Corp., a government-affiliated lender that boosted loans to dairies by 17 percent in the year through March.

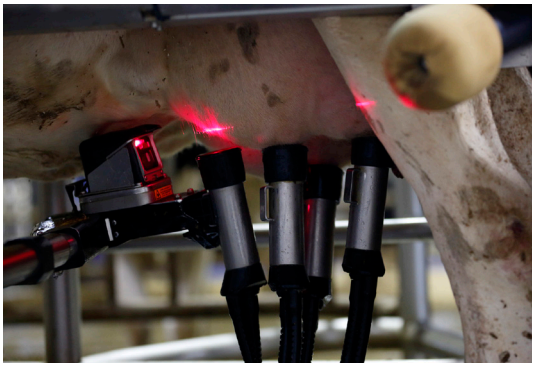
Use of robots may spread faster in Japan than other countries because the industry -- populated mostly with small family farms and aging owners -- is faced with a labor shortage and needs to get more efficient, said Yoko Takeda, chief economist at Mitsubishi Research Institute in Tokyo.

The number of dairies has plunged 28 percent in the past eight years to about 18,000, Agriculture Ministry data show. Farmers in Japan are also getting older, with the average age last year at 67, compared with 63.2 in 2005.

"Young people are reluctant to take over their parents' farms as they cannot see a bright future," Kawaguchiya said. "Their earnings are very small compared with other jobs."

Technology Investments

More investment in information technology is a key to enhancing productivity in agriculture, according to Yuji Yamamoto, selected by Prime Minister Shinzo Abe as agriculture minister when he reshuffled his cabinet on Aug. 3. Japan can sometimes face shortages of dairy products, with the country needing to import an additional 4,000 tons of butter to meet demand.



Sensors and measuring devices continuously monitor the milking process.
Photographer: Tomohiro Ohsumi/Bloomberg

The government began subsidies for milking robots last year after signing the Trans-Pacific Partnership trade deal, which will mean cheaper dairy imports and more competition for domestic producers. The financial support expanded 12 percent this fiscal year to 68.5 billion yen, according to the Agriculture Ministry. Kalm Kakuyama took advantage of borrowing costs near zero percent to buy its robots. Money is cheap because the Bank of Japan is seeking to revive the stagnant economy with record monetary stimulus.

More investment is good news for makers of milking robots, including DeLaval of Sweden, Lely Industries NV of the Netherlands and GEA Farm Technologies of Germany. Sales of milking robots in Japan will jump 67 percent this year from last year, after doubling in 2015, said Satoshi Shinya, director at the Tokyo office of DeLaval, which provides robots and related service to Kawaguchiya's farm. The use of robotic systems may reach 30 percent of all dairy farms in Japan, compared with 2 percent now, he said.

"Sales are expanding as the government shoulders half of costs to introduce robots, and farms have difficulty finding cheap labor," Shinya said. "As local dairy farms are under pressure from TPP, the government is boosting subsidy payments for them, which is positive for us."

One robot can handle as many as 60 cows and produce 3 tons of milk a day. The traffic is managed by the machine, which uses cameras to identify each cow, find the nipples and disinfect them before milking, a process that can take less than 10 minutes.

The operations at Kalm Kakuyama is attracting visitors from as far away as Indonesia looking for tips on how to revive farms struggling with low profitability and high costs. Kawaguchiya says the business has been so successful that it has brightened his outlook for the future. He hopes to expand into cattle breeding, feed sales and tourism, and he may acquire or manage operations of retiring farmers.

"We want our company to be a core of economic activities in this community," Kawaguchiya said. "Then we can find successors, either from our family members or outside."

Source: Bloomberg, October 4, 2016

Strong community grows out of high-tech, low-effort shared farm in Kyoto

By Ayano Shimizu

Yasutaka Kitagawa (right), an official responsible for the shared agriculture experiment at Toray Construction Co., works with a 'supporter' at a farm in Seika, Kyoto Prefecture, in mid- December, 2017. | KYODO

A Japanese company has developed an easy way for people in communities to participate in agriculture through the internet, with its demonstration farm becoming a gathering place for local residents in Kyoto.

Toray Construction Co., a real estate and construction company, came up with a "sharing" agriculture model, which allows participants to sign up online to do simple tasks in the greenhouse.

The Osaka-based company joined forces with several institutions to start the six-month demonstration experiment in September after receiving government funding.

"Agriculture is difficult. It's hard to start farming just because you want to do it," said Yasutaka Kitagawa, who is in charge of the project at Toray Construction, in a recent interview. "So we thought, what if we come up with a system where people can share the workload and be able to decide when to come to the farm?

"If there is a system like that, more people who are interested in agriculture will have the chance to do what they want to do," Kitagawa said.

The system is easy. Interested people sign up online by entering their basic information, such as their age and gender, and select a date and a two-hour task they are willing to do. There are nearly 100 "supporters" registered online, and around four participants gather every day to do simple jobs such as planting seeds and harvesting. They are not paid to work, but they can bring home the crops harvested at the farm.

The greenhouse, called Torefarm, is located on the property of the Advanced Telecommunications Research Institute International in Seika, Kyoto Prefecture, and is full of innovative twists. It makes farming easier for women and the elderly by minimizing the physical workload in the field.

Vegetables such as Japanese mustard spinach and cilantro leaves grow on sand spread on table-like platforms lined up in the greenhouse. Participants can work standing and do not have to bend down.

Sensors and tubes in the sand allow operators to gather information about conditions at the farm through an internet cloud service. Toray Construction officials can provide water and liquid fertilizers by using their smartphones and computers any time, any where.

"There's a Japanese teaching that says 'eat until you're 80 percent full,' " Kitagawa said. "I think it applies to working too, especially for elders. It will become a burden if you work too hard, so this system allows people to enjoy farming without the need to push themselves too hard."

The demonstration is gaining steam and about 30 percent of the participants are aged 60 or over. As word has spread, it has also become a place for local residents to meet new people. Mai Otani, 43, a local housewife, said her involvement has given her something to look forward to during her free time.

"It's held every day so I'm really thankful that I can just stop by and work for two hours during my spare time," said Otani, who took part in the experiment in December for the third time. "And we can come whenever we want to and are allowed to make last-minute cancellations too, so I always feel welcomed and it's easy to come."

Otani sees the benefits in her meals at home as well. "Sometimes I get to take home vegetables that I usually don't eat at home, like Chinese water spinach. So we have more dishes on the table, and it's exciting to come up with recipes too — even though it is fresh and tastes good by itself."

Tsutomu Okuno, 64, said the best part of his experience is that he gets to interact with people. "Working here is obviously really easy and not physically demanding," said Okuno. "But it's more than that — it's really fun because we get to talk all the time."

Earlier this year, a consortium led by Toray Construction received about ¥38 million ($335,000) from the Ministry of Internal Affairs and Communications as part of the "Project for IoT services creation."

The government project requires participants to identify issues that can be solved through the use of the "internet of things" (IoT) while encouraging adoption of the technologies, to create advanced reference models, according to the ministry's website.

With the funding, Toray Construction is staging another demonstration experiment in Chiba Prefecture. However, Kitagawa said there is still room for improvement if the "sharing" system is to take root.

Kitagawa wants to create a revenue-generating model and make the farms an employment opportunity for seniors as Japan looks to deal with its aging population.

"As aging progresses in our society, I think it will be necessary for senior citizens to work too," said Kitagawa. "But it's difficult for them to work like they used to, so they need to

start working differently — with less physical requirements. And I want agriculture to play a part in that."

For that, Kitagawa emphasizes the importance of producing vegetables with higher market value than the Japanese mustard spinach and Chinese cabbage that are currently farmed. "If we produce something with a higher value, we can earn money even if the supporters work slowly," Kitagawa said. "At the same time, we want to lower the costs at Torefarm so many people can start operating it."

Kitagawa hopes the "sharing" model breaks new ground in agriculture through community cooperation.

"I think the 'sharing' model doesn't work for people who want to make money through agriculture," said Kitagawa. "It's for those who want to cooperate and borrow the hands of residents in the community."

Source: Japan Times, December 29, 2017

TPP sows fear in Japan's agriculture industry

By Nicole Freiner

Consumer groups and farmers in Japan fear the repercussions of the Trans-Pacific Partnership trade agreement, which is quickly moving forward on the heels of Prime Minister Shinzo Abe's conference of the other 10 nations (including Australia, Canada, Malaysia, New Zealand, Singapore and Vietnam) now involved in talks.

Japan is calling for a possible signing in March after working diligently to lead the agreement forward even after President Donald Trump withdrew the United States, sending the trade pact negotiations into chaos. Japanese citizens' groups and farmers, though, are concerned that the agreement may weaken some of Japan's existing laws regarding genetically modified organisms (GMOs), as well as open Japan's domestic agriculture sector to competition from large multinational firms.

Citizen campaigns against GMOS

The story of GMOs in Japan is one that has been largely advanced through citizens and consumer campaigns. Topping the list of groups working on the issue is the Consumers Union of Japan (CUJ), which has been actively advocating for GMO labeling since the early 1990s, after the Japanese government approved the domestic sale of imported genetically modified soybeans, corn and other grains.

CUJ started the campaign to demand mandatory labeling, and members of CUJ created an organization committed solely to the GMO issue, called the No! GMO Campaign.

Along with the CUJ, the No! GMO Campaign has the goal of a GMO-free Japan and like the CUJ opposes Japan's move to advance the TPP. Public aversion to GMOs around the world, along with the high percentage of imported foods in Japan's domestic market, reached a water mark in 1998 when rainbow papaya became available in Japan. When Japanese consumers became aware that the papaya was genetically altered, citizens' groups protested and the public and media led an outcry against the genetically modified fruit.

The Japanese government responded to these concerns by creating its own regime that controls and monitors Japan's imported food. The system works; in September 2000, for example, Japan's inspectors detected StarLink corn in a U.S. shipment bound for use as food. The detection of the GMO corn, which was not even approved as animal feed in Japan (although it was authorized for such use in the U.S.), caused a nationwide recall of more than 300 corn-based foods.

It is this very set of laws that consumer groups feel are in jeopardy, as Japan scrapped its 1952 Seed Law, which was the legal foundation for Japan's agricultural experiment stations, in advance of TPP negotiations last fall. These stations create budget requests for prefectural governments' seed expenses.

The experiment stations name seeds that are recommended to local farmers and make budget requests to assist with production costs of the seeds, which are then sold to farmers at a cheaper cost. The seeds have all been grown domestically until now, but the abolishment of the law means that private companies may produce and sell seeds that come from outside of Japan.

Moreover, some commentators argue that seeds are likely to become more expensive as the abolishment of the Seed Law undermines the budget requests that experiment stations create on behalf of prefectural governments.

Corporate seeds may threaten food security

The abolition of the Seed Law paves for the way for large multinational agricultural corporations to produce and sell seeds to Japanese farmers, thereby potentially undercutting the domestic seed market. It is likely that if Japan follows this path, Japanese farmers may experience the problems documented widely by other farmers in countries like India.

Once multinational businesses began selling their seeds there, farmers were forced to rely on them more and more, because private sector seed technologies are nongerminating. That means farmers must purchase seeds every year instead of collecting next year's seeds from this year's planting.

The potential for corporate inroads into Japan's seed market is problematic for many consumers and farmers who are worried about the protection of genetic resources and technology of Japan's domestic seed production. One farmer that I spoke with this past summer told me, when asked about the TPP:

"Its very worrying. I'm not sure small Japanese farmers can stand up to this foreign influence." His concerns may be justified, especially given Japan's protected agriculture industry and low food security. Japan's heavily regulated food supply may not be ready for this opening to competition from foreign business.

Consumer groups, meanwhile, fear the impact on the ability of Japanese "to purchase food that they can trust and not be at the mercy of corporations who care more about profit than health and that control GMOs by patenting their technology," a representative from the CUJ told me.

GMOs in the TPP

Japan, like many other countries, has used the Cartegena Protocol as a basis for its national legal framework regarding GMOs. The TPP does this as well; unfortunately, however, the TPP does not detail how the protocol will be implemented, nor does it apply GMO regulations for food, feed or laboratory research as the Cartegena Protocol does. The TPP does not restrict the trade of GMOs and establishes that countries are not required to modify or adopt laws, regulations or policies to control products of biotechnology.

Rather than putting consumer concerns at the forefront, the agreement puts a burden on countries that have enacted these laws, requiring them to provide a risk and safety assessment that rationalizes their usage. Along with the risk and safety assessments, countries that limit GMOs must provide documents to potential importers and a list of previously authorized GMOs. A working group on products of biotechnology is also established by the agreement.

These measure underscore that risks with regard to GMOs are borne by the member countries, which must link policies that limit the import of GMOs with scientifically backed risk and safety assessments. Currently, Japan's policies regarding GMOs are fairly strong; they are more heavily regulated than they are in the U.S. but not as strongly as European regulations.

The TPP establishes a framework for negotiation that rests on consultation with scientific experts called "cooperative technical consultation" when member countries disagree. Unlike the Codex Alimantarius, the international legal document that the TPP refers to and is based upon, Chapter 7 of the TPP, which deals with Sanitary and Phytosanitary Standards has the primary goal of protecting "human, animal or plant life or health in the territories of the Parties while facilitating and expanding trade by utilizing a variety of means to address and seek to resolve sanitary and phytosanitary issues."

This language puts measures to protect human, plant and animal life in the context of trade rather than promoting consumer health singularly. Thus the TPP SPS agreement potentially puts health standards below trade liberalization, making them subordinate to concerns related to trade.

The TPP: High stakes for Japan

In December, after the November meeting of TPP negotiators in Danang, Vietnam, Canada raised concerns about its cultural goods and services that must be worked out before there is a deal. Canada is the second-largest economy in the TPP after Japan and without it there is a likelihood that countries currently working with Japan on the TPP will seek out other trade partnerships in the region and look to China for leadership. There are a number of items which must be worked out in order for the deal to move forward.

For Japan, this is a high-stakes negotiation as the country seeks to solidify a trade and investment regime for the region that would serve as a touchstone for other future deals. Japan is especially concerned about its upcoming bilateral trade negotiation with the U.S., which is set to start in 2018, and China's ambitions to move forward with the Belt and Road Initiative as well as the ASEAN-led Regional Cooperative Economic Partnership, which includes China and Japan among the 16 negotiating nations.

Many Japanese farmers are concerned about the impact the TPP will have on their livelihoods, and consumer groups fear the impact that the trade pact will have on the content and quality of food sold in Japan. | BLOOMBERG

If the TPP fails to move forward and the other agreements proceed, Japan will lose the opportunity to build strong rules and norms in the region that reflect the values that Tokyo considers important. Consumer groups and farmers opposing the deal are facing an uphill battle.

Source: Japan Times, January 8, 2018

New UN agency projects to boost farming practices, improve farm animal health

People around the world, especially poor farmers in developing Asian countries, will benefit through the use of nuclear techniques in combatting diseases affecting farm animals and improve water management practices, the United Nations atomic energy agency has said.

"Improved farming practices, healthier animals and – ultimately – increased food security will be the outcomes," the International Atomic Energy Agency (IAEA) said on December 28, 2017.

Supported by a $600,000 grant by the Organization of Petroleum Exporting Countries (OPEC) Fund for International Development (OFID), the IAEA initiative aims to contribute to strengthen the implementation of Sustainable Development Goal 2 on ending hunger, achieving food security and improving nutrition, and promoting sustainable agriculture.

Producing more rice

About two-thirds of the grant will be used to help rice farmers better cope with the effects of climate change in Bangla-

desh, Cambodia, Lao People's Democratic Republic, and Nepal.

Countries in Asia – which produce 90 per cent of the world's rice – have seen fluctuating yields in recent years due to rising temperatures that bring new plant diseases and insect pests, extreme floods and droughts as well as a rise in sea levels leading to increased soil salinity and lower soil fertility in coastal areas.

"By using nuclear and isotopic techniques, scientists can help farmers improve water management practices and optimize the use of fertilizer for best yields at the lowest cost," said the UN agency.

The increased productivity from these improved practices is expected to lead to higher volumes of high-quality, affordable rice, increasing the food security of the rural population in target countries. The improved technologies will also help reduce greenhouse gas emissions from rice production.

Fighting animal diseases

The other part of the funds will go towards the application of nuclear-related techniques for the diagnosis of foot-and-mouth disease and other fast-spreading highly contagious diseases impacting cattle in Cambodia, Lao People's Democratic Republic, Myanmar and Viet Nam.

"Early and rapid detection of animal pathogen is key to halting the spread of the diseases," said IAEA, adding that while conventional methods can detect the viruses, they take a long time and cannot determine their behaviour or genetic character – which is required for a rapid response.

Under the grant, the IAEA, in cooperation with the UN Food and Agriculture Organization (FAO), will train veterinarians from the four countries in the diagnosis and control of the diseases.

Source:
United Nations News Centre, December 29, 2017

A farmer and his wife use a pair of oxen to plough their field in Surkhet district, western Nepal. Photo: IFAD/Sanjit Das

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It cuts across national boundaries to link businessmen and promote economic growth throughout the Asia-Pacific region. CACCI is a non-governmental organization (NGO) granted consultative status, Roster category, under the United Nations.

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