

Food and agriculture evolved humans. Where is their future headed?

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Born in 1959 in Oita Prefecture. He joined The Norinchukin Bank in 1983 after graduating from the Faculty of Agriculture, University of Tokyo. He held various positions including Managing Director in 2011 and Senior Managing Director in 2017, before assuming his current position in 2018.

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Born in 1952 in Tokyo. He graduated from the Faculty of Science, Kyoto University, and received a Ph.D. in science from Kyoto University. He served as an assistant at the Primate Research Institute of Kyoto University and as a professor at the Graduate School of Kyoto University before assuming the office of President of Kyoto University in 2014. He has had his current position since 2021.

What separates humans from monkeys and apes is what they eat and how they eat.

Now that food is changing drastically, how will humanity change?

YAMAGIWA Juichi, one of Japan's leading primate researchers and a former President of Kyoto University who continues to provide analyses and proposals on a wide range of topics, and **OKU Kazuto**, President and Chief Executive Officer of The Norinchukin Bank, discussed the history and future of food and agriculture, life on our planet and our living at the Research Institute for Humanity and Nature in Kyoto.

OKU: We, The Norinchukin Bank, are a financial institution based on Japan's agriculture, fishery and forestry (AFF) industries, and our mission is to support them. In addition to being important key industries, the AFF industries are closely related to food, communities, culture and the environment, which largely overlap with Mr. Yamagiwa's research fields. I was very much looking forward to seeing you in Kyoto.

YAMAGIWA: Thank you. Food is an important and indispensable element for maintaining life. On the other hand, as you say, food has a great significance in human culture, and just studying food can lead you to answer the question of what a human being is.

Food is a source of quarrels for monkeys; they never eat with anyone in their herd nor does the herd eat together face to face. But humans eat face to face on purpose. Totally opposite to monkeys, humans put food, which could cause fights, in between them and eat together. The premise is that "you and I are good friends."

Even in humans, children don't understand this and they compete for food at first. However, they are disciplined by adults and become able to eat together without fighting. Food is the first societal norm for children. Food is a material of fighting for monkeys, whereas it is a material of connection and bonding for humans.

OKU: Then, is it a significant problem that the COVID-19 pandemic has made it difficult to sit at a table and eat together from communication perspective?

YAMAGIWA: I think it's a big problem. The first food revolution for humans was to carry food and share it with others. Unlike monkeys, gorillas and chimpanzees distribute food in groups but only when so demanded. Because they do not carry food, they do not bring food to others, asking them to eat it. This is common for all non-human primates.

When humans began to carry food, they realized that food would be a great tool for creating society, then started a life of hunting and gathering. The act of going far to collect food and distributing it among group members became a bond that connects humans. Meals have a special meaning.

OKU: I understand very well. The COVID-19 pandemic revealed that a significant part of communication especially in the field of business can be done

remotely. In the post-pandemic era, meeting people in person, preferably over meals, could have a special meaning.

YAMAGIWA: That's a very important thing.

The shift from hunting and gathering to agricultural and livestock farming has accelerated the evolution of food

OKU: From what you have said, I understand that food has played a major role in the evolution of mankind in various ways. Because the AFF industries support food, "What should food and agriculture be?" is a core theme of the Bank. In fact, we are trying to nurture the food and agriculture business targeted at the value chain of food and agriculture as a pillar of our business. Of course, there are various challenges, and we are working on them through trial and error.

YAMAGIWA: In the field of food and agriculture, we are certainly facing problems. Actually, our bodies are still as they were before the start of agricultural and livestock farming and are not much different from those of monkeys and apes in terms of function. On the other hand, in the field of food, technology has developed rapidly since the transition from hunting and gathering to agricultural and livestock farming began about 12,000 years ago, and now the food industry has become a major industry, and agriculture is becoming industrialized.

This industrialization of agriculture changes greatly the way the traditional agriculture has been. Both hunting and gathering and agricultural and livestock farming are points of contact that connect people and nature, but only humans engage in agriculture. Agriculture is the first humane culture started by humans, and I think that the human body and mind remain attached to it, but the industrialization of agriculture via science and technology is rapidly separating agriculture from nature.

No two plants are the same in the natural world. However, when it becomes common to make and sell a large amount of vegetables that meet the stringent output standards, non-standard vegetables are often difficult to be sold and discarded despite the efforts made by farmers. I am the honorary director

Keep working toward unquantifiable targets

of the Kyoto City Zoo, and such discarded vegetables are used in this zoo as feedstuff for the animals, thanks to the support by local farmers.

OKU: Food loss is a really big problem. We offer support for the use of non-standard agricultural and fishery products, but we are only halfway there.

YAMAGIWA: In a broader perspective, let me comment about my visits to Africa which I have made almost every year for more than 40 years.

Looking at the local agriculture there, they had produced originally the traditional varieties in small quantities. Then they switched their agricultural produce to ones that enable efficient and mass production for export. As a result, they run out of food to eat for themselves, causing a chronic state of starvation. They are incorporated into a global system for division of labor to ensure the mass production and mass selling of agricultural products. Meanwhile, a large amount of surplus food is discarded in Japan, and the amount of food waste is about 1.5 times that of the food supply shortage overseas. What should

we do about this situation? Being able to import food might be taken for granted, but there is a risk that the situation could change drastically if something like Russia's aggression against Ukraine occurs.

OKU: In Japan, agricultural crops are produced less because they cannot compete with imported products price-wise, which leads to more abandoned farmland and less employment in the industry. The same thing is happening in the fisheries and forestry industries. An important theme for us in this situation is how we can somehow increase the income of producers and maintain the regions where the people work in the AFF industries; in other words, how we can make the AFF industry sustainable, including aspects such as the environment and food security. To achieve that, what can finance do?

YAMAGIWA: I think there are several prescriptions, one of which is how to create a brand. The Japan archipelago has the groundwork to produce cutting-edge agriculture on a global scale. The diversity of nature is still preserved, and local products grown there are diverse. This is the case not only with agriculture but also with the fishery industry. Japan has as many as 11 sites designated as Globally Important Agricultural Heritage Systems, and is the country of the world's second largest number. This is the result of different types of farming conducted with adaptation to the various regional conditions, which constitutes an advantage for Japan. Rather than the large-scale and uniform agriculture overseas, small-scale and region-specific agriculture might be more amenable to creating a brand.

OKU: That's right. In fact, some regions are producing results from such initiatives, so I would like to help increase these efforts. In so doing, you said that diversity is a key point, which makes sense to me. Having said that, while the necessity of diversity is actively discussed nowadays, I feel it difficult to give an convincing explanation about its benefit.

YAMAGIWA: Then, conversely, why not explain the vulnerability of uniformity? For example, if you plant only cedar in the mountains, the forest will become dark, where no other plants will grow, destroying the ecosystem. The same is true for human society. Diversity has tolerance and receptiveness, and it is diversity that creates new things. That's my theory. In 2001, the "UNESCO Universal Declaration on Cultural Diversity" was adopted by the UNESCO General Conference in Paris, and Article 7 states that



Uniformity is fragile. Diversity is...

“Creation draws on the roots of cultural tradition, but flourishes in contact with other cultures.” There are many cultures, and the future is created where different cultures contact and stimulate each other. In fact, humankind has evolved that way.

OKU: I see. Thank you very much.

YAMAGIWA: Interestingly, the 17 SDG goals do not directly mention culture. There is no mention of culture even though culture is essential to a subject such as diversity, but it is difficult to verbalize culture despite its importance.

OKU: The dilemma of not being able to express value is something that we keenly felt when formulating the Bank’s Purpose. Some of the goals we are trying to achieve are difficult to quantify, such as the revitalization of local communities. However, I feel that it is important to continue such efforts, while facing the difficulty of verbalizing and quantifying them.

Maintaining each region’s diversity is the key to the growth of the AFF industries

YAMAGIWA: Another prescription for the AFF industries is to brand rare agricultural and fishery products and, on top of that, to add value. 20 years ago, inbound tourists to Kyoto would have visited shrines and temples within the city. Just before the COVID-19 pandemic, however, many inbound tourists were visiting places along the coast of the Japan Sea, including Maizuru. What do they do there? They eat crabs.

OKU: I knew it. That area is famous for crabs.

YAMAGIWA: Yes. The point is, think about having people visit the locale to eat crabs instead of exporting them, however popular they are. That way you could prevent the depletion of resources due to overfishing and create a source of income for the sightseeing business, in addition to the fishery industry. The idea is to think not only about the AFF industries but also how to collaborate with other industries.

OKU: I quite agree. Like you said, I think Japan’s AFF industries can achieve competitiveness and higher productivity only by having local produce available to which the local culture and flavor are added.

Of course, we are putting tremendous effort into exports, but we also want to boost tourism and other businesses by leveraging those exports. “There are such delicious things in Japan.” We let overseas



consumers taste and know Japanese food through exports and have them think “let’s go to Japan” and visit the production site. As the shift from consumption of goods to experiential consumption occurs, we could have high expectations for inbound tourists to Japan after the COVID-19 pandemic.

In addition to stimulating each region’s business of local specialties and tourism, I think it would be even better if we could also offer tours of multiple regions. I’m from Oita Prefecture, and Oita has various AFF products and sightseeing spots that differ by region. By promoting prefecture-wide initiatives through the sharing of information on the food and tourist attractions within that prefecture, we could create synergies.

YAMAGIWA: I went to Oita the other day for a lecture, and it’s a prefecture that has a great deal of such potential.

What only region-by-region, small-scale agriculture can do

OKU: I think it would be best if an expanded version of Albergo Diffuso* could be realized in Oita by having multiple regions across the prefecture share the provision of hot springs, dining and lodging services.

*Albergo Diffuso means “diffused hotel” in Italian and refers to an initiative to make one entire region function as a hotel by dividing the lodging and dining services among the different accommodations and restaurants within the region. For accommodations, renovated vacant houses can also be used.

Japan’s agricultural business offers excessive service Create new points of contact between producers and consumers

YAMAGIWA: The third prescription is that “the best service is not to provide service.” A good example is a sushi restaurant in Japan. When you walk in and sit at the counter, they ask, “What would you like to have?” They do not say, “Today’s recommendation is this,” or “Please order whatever you want,” but they expect the customer to have gastronomic knowledge about sushi. That’s what makes it fun.

In terms of the AFF industries, production in large quantities, off-season shipments and selling only products that meet the standards have become common sense to producers and consumers today. From my perspective, however, those are excessive services. You should doubt such common sense.

OKU: Excessive service, I see.

YAMAGIWA: Yes. Originally, agricultural and fishery products were bought and sold through negotiations in the market. Consumers would go to the market and negotiate with the producers who sell the products. They would communicate with each other about the size of the products, how they were grown and how to cook them to make them taste better. This is the starting point for consumers and producers to trust each other.

Without that kind of communication, today’s consumers buy items of the same standard lined up in stores at the same price without anyone in front of them to talk to. I don’t think that’s the way agriculture should be. Producers want to sell their products to people who really trust them, think they are tasty and feel happy about them. And producers want consumers to buy their products after explaining how much effort and love they poured into them. I think we need to make the effort to stop offering the excessive service that ensures the purchase of the same quality at any time, and to go back to the start-

ing point. In fact, I make some “investment” every month in farmers and fishermen to have vegetables and fish delivered directly.

OKU: Recently, even in Tokyo, some producers come to sell their crops twice a month on the first floor of condominiums, saying, “Here are the crops I produced.” Caring about the connection between producers and consumers, and from the viewpoint of traceability, more and more supermarkets and other stores are indicating who produced the products they sell.

YAMAGIWA: The delivery of fresh produce, a service I “invest” in, is not exactly an “excessive service,” even without information on what to be delivered. However, it sometimes gives me a happy surprise, such as finding a surprisingly nice sea bream or a letter introducing recipes in the box delivered.

OKU: This relates to what you said we should question regarding common sense, but I understand that you think human evolution was a strategy to turn weaknesses into strengths. Could you elaborate on this?

YAMAGIWA: Yes. It was true until recently. However, in the last 100 years, it has been changing in a way to expand strengths, which I think is a mistake. If we keep strengthening our strengths, we will only have to continue an expansion path and eventually get stuck. It is a misunderstanding that human beings have kept strengthening their strengths since long ago. Rather, turning their weaknesses into strengths, trying to build a sustainable world, was the history of evolution and civilization of human beings.

OKU: For Japan’s AFF industries, too, you think that turning weaknesses into strengths could lead to the realization of sustainable AFF industries. In this connection, you also mention the possibility of successful branding of Japan’s small-scale, region-by-region, agriculture.

YAMAGIWA: The same can be said for forestry. Trees planted across Japan immediately after the war have already reached 70 or 80 years old with larger diameters. Logging of these trees has not progressed because it is difficult to sell in terms of price and other factors. However, now that it has become clear that many concrete buildings do not last even 100 years in Japan, wooden buildings are gaining increased attention with large-scale wooden buildings becoming possible with technological progress. If we could coordinate these moves successfully, a new mar-

Declining population could be an opportunity

ket could be created advancing the logging of the old trees. And if you plant young trees there, the amount of carbon dioxide absorbed by the forest will increase, leading to the preservation of the global environment. By changing our way of thinking, weaknesses can turn into strengths.

OKU: The trend toward preserving the global environment has finally arrived in the forestry industry as well.

Evolving from expanding strengths to turning weaknesses into strengths

YAMAGIWA: I think the idea of cooperative organizations has also been reviewed. In contrary to the trend of bank consolidations, some of the *shinkin* banks and credit unions, which are regulated to operate within a certain region and therefore find it difficult to merge beyond those regions, are using their accessibility to local areas to their advantage. On the other hand, banks that have gone through a “huge merger” are revealing a weakness due to the largeness of the organization.

OKU: JA, JF, JForest and The Norinchukin Bank are all cooperatives rooted in local communities. Some regions in Japan have suffered exhaustion due to a decreasing population, a declining birthrate and an aging population, but we see great significance in our community-based operations and are focused on regional revitalization.

YAMAGIWA: I think a declining population is an opportunity. I even think the life in a depopulated society is actually easier. If the declining birthrate and aging population lead to depopulated communities consisting only of the elderly, the elderly become able to live to their own rhythm of life. You don't get avoided even if you move slowly on the train, and you can live in your own rhythm by being yourself in the course of nature. There's nothing richer than this.

OKU: I see. Now that technological support is advancing, depopulation is different than it used to be.

YAMAGIWA: Yes. For example, if drones deliver medicines or 5G enables remote healthcare, you don't have to go out to the hospital in a crowded city.

It is not at all a weakness for the elderly to farm in a depopulated area. In the first place, the reason why humans shifted from hunting and gathering to agriculture and pastoralism is that experts such

as master archers had power in hunting, whereas agriculture can be done by anyone, young or old, men and women, as long as they know the technique. Agriculture is something that everyone can participate in, and it has become established because everyone can work together. Even when you get older, you can still do agriculture. I think it would be good to promote the use of IT to help the elderly do agriculture.

OKU: Yes. Through the AgVenture Lab initiative, we are promoting investment in venture companies that aim to solve social issues facing the AFF industries and local regions by using the power of technology. A lot of interesting technologies are coming together.

Thank you very much for your energetic and encouraging talk today.

YAMAGIWA: Thank you, too. It's a pleasure to be here.

