Hog Lift and Corn from America

How grain trade built U.S.-Japan Ties

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Preface

Sixty-six years have already passed since the end of World War II. If we look back at how the history of Japan has progressed since then, we realize how much we have achieved. Starting all over from the ashes of defeat, Japan experienced spectacular economic growth in the 1960s. Then the oil crisis slowed the growth of Japan's economy, but the bubble economy surged in the 1980s, followed by the lost decade from the early 1990s to the beginning of the 2000s. Finally we have seen the endless dire days surrounding the new global circumstances after 2000. Japan has pulled through lots of ups and downs.

In 1979, Ezra Feivel Vogel wrote his book “Japan as Number One” in which he pointed out that Japan's high educational motivation and the habit of many Japanese people to read avidly were major factors for Japan's rapid economic growth, and these factors are now almost always used as a growth model for developing countries. Vogel's best-selling book drew lots of Japanese readers throughout the 1980s. His point was surely right.

However, we Japanese may have taken his point as a confirmation that the Japanese way of living, thinking and working – and everything else – were the best in the world, and we may have allowed ourselves to become complacent without noticing. We could live that way while Japan's vitality continued, but our country seems to have lost much of that vim today.

Moreover, with the rapidly emerging countries such as China and Brazil, the relative power of Japan has become less important in the international community. Japan was once one of the states that had achieved the highest living standards in the world, until the 1980s, and our country impressed many other countries with its high standards of business, law and order, health and education. What happened to Japan and the Japanese people?

And then in 2011, Japan was hit by the Great East Japan Earthquake, the scale of which was so devastating that it could take 1,000 years for us to see another like it. Now Japan has become more famous for the tsunami that

came after the earthquake, and for the nuclear power plant disasters.

This book discusses the history of Japan and its people from the viewpoint of food, especially livestock products and grains. I have been researching and teaching on this topic at my university. There is a population of 120 million in Japan, and there is a demand for food that can feed this population. It would be ideal if we could provide all our food for ourselves, but unfortunately Japan is in no position to do that. Therefore, Japan has been importing agricultural and livestock products from foreign countries, mainly from the U.S. This has allowed Japan to focus its nation-building efforts over several decades since the end of World War II.

In other words, Japan's continuous prosperity over the past half century and more has been supported by scientific technology, as well as automobiles and electric appliances developed by technology. And more importantly, there has been enough food to feed the population of Japan, and it is the population that constitutes the most important driver of success.

Food has been produced within the country as well as imported from abroad just like a pair of big wheels working together on a cart. It is not a question of whether this is good or bad, but the fact is that our day-to-day life functions only by using both these wheels to their full capacities. If rice is the representative of Japan's domestic production, then the representative of imported food is the livestock fed with imported grains. If livestock doesn't sound familiar to you, just think about beef, pork, poultry, eggs, cheese, milk and yogurt, which are the final products of livestock. It is only possible for Japan to produce such products in great volume domestically thanks to a constant supply of feed grains imported from abroad, mainly from the U.S. Therefore, it is equally important to produce food domestically as well as importing it.

Thus, it is necessary for Japan to excel at the business of international grain trading, achieving substantial trading results and building relationships of mutual trust and interdependence, as Japan has done in its relations with the large agricultural countries in order to secure a stable source of imported food both now and in the future.

This book is written in easy language and explains how the Japanese livestock industry has been supported by corn imported from the U.S. as well how the U.S. and Japan have developed their long and multifaceted relationship through the trading of livestock products and grains.

Japan and the U.S. have developed a very strong relationship in livestock and related industries. If we view this bilateral relationship from the mid- to long-term point of view, it certainly is worthy of being called a bond, even though the day-to-day trading is carried out based on business-like price negotiations. I am sure this book will provide you exactly what you need to know in order to understand the reality of Japan's food circumstances and to think about the future of Japan. It is my pleasure if this book can be your guide.

Sendai, October 2011
Seiji Mitsuishi

Chapter 1

How the Great East Japan Earthquake revealed the reality of Japan's food system

At the moment of the earthquake, through that night, and in the days that followed

How long will we keep on turning a blind eye to reality?

It was in Sendai City, Miyagi Prefecture at 2:46 p.m. on March 11, 2011. When I felt the earthquake, I was sitting at my desk in the research laboratory at my university. Almost all the books fell from their shelves and were scattered over the floor. Water from the detached cooling tube of the air conditioner leaked onto the books and swamped the room. After the very long period of shaking during the earthquake itself, we hurriedly made sure that everyone among our colleagues was fine. Then we tidied the room with the help of the students who happened to be around so that the room could be used for classes the next day. I finally went down the university hill in the early evening and walked home.

Fortunately I bumped into a graduate student of my university who was heading to his home and kindly offered me a ride. As soon as the car started, though, we were stuck in such heavy traffic that it took us almost an hour to go just 50 meters. Meanwhile, I was trying over and over to contact my family by cell phone, but in vain.

There was a shopping mall where fashionable young people at normal times would enjoy hanging around, but after the earthquake, we saw the paved pathways were warped and cracked everywhere, with broken glass scattered, and people were standing listlessly just with a blanket wrapped around them.

Other people were wearing nothing more than the casual clothes they wear at home, and they were just standing there with their mouths open.

Finally when I arrived home, it was already completely dark, but there were lots of people on the roads. My apartment is on the 10th floor of an 11-story building. I climbed the emergency stairs to the 10th floor in complete darkness. When I entered my apartment, I found all the furniture and fixtures had fallen and scattered, and there was no clear space to put my food down.

What was the most surprising to me was that the glass door of a cupboard had flown across the room and landed at the far end of the living room away from the kitchen. I wondered, “Why on earth is this lying here?” and “What if we had been here at the time of the earthquake?” All the various answers I imagined made me horrified once again.

At the moment of the earthquake, my family happened to be out of the house. My wife and daughter were on the second floor of a nearby bookstore. The ceiling of the bookstore fell in – right after they evacuated the building, and they barely escaped disaster. My son, a junior high school student, usually takes the subway and bus for his commute, but he walked the whole way home and arrived late at night.

Neither electricity nor water services were available, so most of my neighbors took shelter at a nearby elementary school, which soon became filled with evacuees. I think quite a number of people were turned away from the crowded school and ended up returning to their damaged homes. Those who had cars snuggled into their cars in a parking lot and tried to keep themselves warm. My wife and daughter were lucky enough to be invited to stay warm in one of our neighbor's cars.

I heard that most of the residents in our apartment building, especially those living on the higher floors, spent that night in their cars. I didn't have a car, so I spent the night in my apartment in pitch darkness. Ironically, the stars shone so brightly in the sky over the darkened Sendai City that their contrast was deeply etched into my memory.

Our apartment building had one almost empty room where my family and I ate some canned food, which we managed to find in the totally messed up kitchen. After the simple meal, we lay there and talked about various things feeling shaken the whole time. That feeling of being shaken remained with us for days.

Don't close your eyes to reality

Since I am a professional researcher of food issues, I have always kept a stock of food at home, but I still felt uneasy and worried about the food supply for the days to come. I was also worried about electricity, gas and water. To be honest, I had no idea about the whole picture of the Great East Japan Earthquake that first night. However, I realized this must be something really bad, just by looking around at the nearly unrecognizable scenery that used be my familiar town neighborhood, and I told my family, "I will go to the shelter first thing in the morning and gather as much information as I can in order to make sense of this chaos." Then the four of us slept together like in the days long ago when my children were very young. There we slept, feeling the continuing after shocks.

Not only had the scenery of the town changed, but people's behavior as well. Several hundred people were lining up in front of the supermarket even before 7 a.m. even though nobody was sure the supermarket would open for business at all. Such a long line of people is never seen except on the rare occasions of pop music concerts or something. But after the earthquake, such a line of people stood patiently hoping for food, and this became a common sight.

My neighborhood was not one of those areas washed away by the tsunami, so my knowledge about the disaster-stricken area was very limited. Perhaps no one who was not there personally could ever really know exactly what happened in those devastated areas. Still, I had seen the behavioral pattern of the people seeking food from very early in the morning, and I was actually one of them, waiting in line for food day after day. This convinced me very strongly that we have to review the problems of Japan's food system from the

ground up, and we must review this food system that we have taken for granted up to now. We shouldn't turn a blind eye to the problems. Our food system might become a disaster if we don't take a serous look at these problems.

We have been taking it for granted

I joined the National Federation of Agricultural Cooperative Associations (Zen-Noh) in 1984 and had worked for this organization for 21 years and 11 months, mostly in overseas operations, including an assignment in the U.S. Ordinary people may think it strange that Zen-Noh is engaged in overseas businesses. You may assume Zen-Noh is an organization exclusively for Japanese farmers, but Zen-Noh actually has been deeply involved with agriculture outside of Japan, and its involvement is one of the supporting factors of our food system, which we have been taking for granted.

The Great East Japan Earthquake gave us an opportunity to realize that there are problems with this food system in Japan. I was deeply convinced and wanted to present these problems visually through my own experiences, including experiences abroad. This was one motivation for me to write this book. In order to recover from the devastation after the earthquake, Japan must be determined to be reborn. And for that, we need to acknowledge and thoroughly investigate the problems in this agricultural system, which we have been taking for granted, and find the best way for a new Japan to thrive.

I think most Japanese have been aware that we rely heavily on foreign countries for our food supply, although we don't think about the detailed facts. We more or less acknowledge that the ratio of food self-sufficiency in Japan is 40 percent, and that 60 percent of our food is imported from overseas.

On the other hand, Japanese people tend to avoid thinking calmly based on reality, such as the possibility of the sudden stoppage of food imports, which are essential and taken for granted. We don't seem to be good at preparing for the possible disruption of food imports by such unexpected factors as the

Great East Japan Earthquake, even though we rely on foreign countries for 60 percent of our food supply. Maybe this is because of our national tendency to avoid ill omens, or perhaps it is due to a lack of training to prepare for the worst. It is true that no one in the world likes thinking about unpleasant things.

If we were planning the future management strategies of a company or organization, and if we avoided facing unpleasant facts, then the plan we would come up with would surely be pretty biased.

No matter how tough and painful the reality is, we need to face up to it in order to see what is proper to aim at, or to set specific strategies and measures for accomplishing our goal.

Perhaps Japanese people have made mistakes over and over in discussing food and agricultural strategies, even before deciding on their most basic goals.

We must feed a population of 120 million

Now let's take a look at some basic facts related directly to food-production. According to data provided by the Ministry of Agriculture, Forestry and Fisheries, Japan's total farm land totaled 4.61 million hectares in 2009. That is divided into 2.51 million hectares of rice paddies and 2.1 million hectares of dry fields.

Can this much farm land feed the entire population of 120 billion people in Japan? We may unconsciously assume that there is enough farm land in Japan to grow enough farm products to feed us all. This question is extremely important and basic in considering the ratio of food self-sufficiency and the future of food and agriculture in Japan.

Nonetheless, not much discussion has taken place to address Japan's agricultural and food problems squarely. We have a long history in agriculture and food studies, so the accumulated research and numerous talented researchers are assets we can be proud of. Yet many have warned

about Japan's food and the future of agriculture for many years. It is also true that such dire writings have been distributed among those who know the subject very well.

On the other hand, our living standards have risen so high that our concerns surrounding food are no longer about a shortage of food, but how we can eat more delicious and tasty food and how we should eat without getting fat. Therefore, many of us had such a decadent mindset before the March 11, 2011 earthquake that it was simply “beyond the scope of our imagination” that all the food might completely disappear from our sight.

Now I take the example of meat, as I have often talked on this topic for my lectures and seminars. Many of us eat meat for many occasions, but do we realize what farm animals, our source of beef, pork and poultry, are fed with? The answer is that the feed grains for our animals are mostly imported from abroad. In other words, Japan's livestock industry has been sustained by huge amounts of imported grains. This is the reality that we need to know. Whether we like it or not, we need to face up to this reality, in the first place, and then consider the issues carefully. If we see various social phenomena from this viewpoint, we will see very different aspects than what we see merely based on our impressions or emotions.

For example, Japan imports about 1 million tons of corn for livestock feed every month. Then in which form and by which route is the corn brought to Japan? (The amount of imported corn per year varies slightly year by year, but it amounts to approximately 16 million tons per year, some 12 million tons of which is used for livestock feed. The remainder of some 4 million tons of corn goes into human food and industrial products. But to make it easier to understand, I only talk about corn for animal feed.) Furthermore, who is supporting the system to facilitate this import traffic of 1 million tons of corn every month, and what benefits are we receiving from that? Or what sort of risks are there?

For most of us, it must be hard to imagine the volume of 100 tons of corn, let alone 1 million tons of corn, because none of us have seen the actual volume of 1 million tons of corn in our daily life. To tell you the truth, we are

surrounded by very many products made from corn in our daily life, but of course their appearance is not like the familiar yellow corn grains. Corn products take many different forms: animal feed of course, but also ingredients of soft drinks, glues for industrial uses, biodegradable plastics, and in recent years automobile fuels. None of these products remind us of the yellow grains. Therefore, we often see them in our daily life without realizing they are made from corn.

You may think that ordinary people living in the cities have very little to do with animal feed grains, but actually there is a very close relationship, and feed grains mean a lot to city dwellers. There are a lot of invisible systems that we generally take for granted, and a detailed description will follow later in this book. The Great East Japan Earthquake directly struck the systems that support these very things that we take for granted.

Invisible infrastructure

These systems that support what we have taken for granted are what I call invisible infrastructure. They are a vital part of our daily life, but totally invisible, so I call them invisible infrastructure. Our usual transportation systems such as roads and railroads are quite visible infrastructure, whereas the transport systems that deliver gigantic amounts of grain and crude oil punctually and without trouble are only possible thanks to invisible infrastructure. Our life is supported by many kinds of such invisible infrastructure.

When I was stationed in the U.S. several years ago, I heard a top executive of a world-leading company say, “The biggest and the last competitive edge that the U.S. has today is its logistical capability to transport huge amounts of grain consistently and reliably.”

I think his comment is very thought-provoking because he meant that the smooth operation of industry and social life in the importer's country depends on the food and grain transport systems of the U.S. On the other hand, we usually don't think deeply about these things.

The question of whether agricultural products are imported or domestically grown often becomes the focus of discussions about food issues, and it is an important point both notionally and substantially. Today, however, many of our industries can only remain viable with the cooperation of their overseas partners, and this is true even of what we regard as traditional domestic industries. If we fail to see this fact, we will also miss out on the essence of it. There are many Japanese traditional foods made of foreign-grown ingredients, and soba is one of the best known examples. Now is the time, I think, that we Japanese must face up to reality and accept the situation fairly and squarely.

In Miyagi Prefecture where I live, there are the very famous traditional Shiraishi Umen noodles, which are simply made of water, salt and flour. These noodles, with some 400 years of history behind them, are among Miyagi's signature traditional local foods. The most suitable flour for this noodle is ASW, Australian Standard White, the flour produced in Australia. This is just one good example among many others where we acknowledge Japan's involvement with foreign producers, in terms of our daily food.

The earthquake blatantly exposed Japan's food system bottleneck

From this viewpoint, I cannot help thinking that the Great East Japan Earthquake gave us an opportunity to face up to the cold-blooded reality that we have various problems not only in our food systems, but also in many other blind spots that we have been refusing to think about or procrastinating in our response to, even after becoming aware of them.

In other words, this Great East Japan Earthquake not only revealed the most basic factors of our social life – including people, goods, money and information – but it also exposed what was “the unspoken precondition with no grounds” in the existing social systems that we have built up over the past decades.

And as for the individual supply chains, such as in the food systems, the earthquake shone the light of day on the most vulnerable parts and revealed the bottlenecks in production, processing, distribution and consumption in

the market.

Let's take a closer look at this matter.

Blind faith in security

The Japanese archipelago is located in a pretty complex spot on the earth from the point of view of the earth's crust. Japan is said to be "located in the collision zone of four plates among the dozen or so that cover the earth's surface, and is the epicenter of 10 percent of the earthquakes greater than magnitude 7.0 that have occurred in the past 90 years, some 900 in total."[1] Furthermore, according to the Japan Meteorological Agency, there are 108 active volcanoes in Japan out of around 800 worldwide, and 18 of them, nearly 20 percent of all the active volcanoes in Japan, are located in the northeastern region.

All of this drives home a simple fact, that despite Japan's affluence, pleasant climate and natural beauty, it is also vulnerable to frequent earthquakes and is situated in a very volcanically active area of the earth.

As we have been experiencing frequent aftershocks of the Great East Japan Earthquake, we all know that there is no place in Japan that is immune to earthquakes. Not only those who are engaged in the food and agriculture industries, but also managers and employees in every industry as well as consumers should acknowledge this reality with a cool head.

Torahiko Terada, Ph.D. was a physicist who lived in the late Meiji era and early Showa era. He clearly referred to this fact in 1934, nearly 80 years ago.[2]

He pointed out, "… since Japan is at the mercy of very special environment in meteorological terms as well as geophysical nature. Therefore, we should never forget even for a moment that we are fated to live under constant

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[1]URL: http://www.zenchiren.or.jp/tikei/index.htm (the website of the national geo survey Association accessed on July 3, 2011)
[2]"Tensai to Kokubo (Natural Disasters and National Defense)" by Torahiko Terada. Chikuma Shobo, the 2010 version, pages 440-441

threat of some special convulsion of nature." In addition, he also said, "It is so obvious that there is no need for me to remind you that we should prepare for the worst while things are going well, and very sadly, only a few facts in the world can be forgotten so utterly as this one." It is worth paying sincere attention to the lessons gained through history and the wisdom of our ancestors.

Bottlenecks in our Food System

One of the biggest problems revealed after the Great East Japan Earthquake was that the scale of interdependency built up between Japanese industries and their partners all over the world, through the progress of globalization, was way beyond our assumption.

It was rather symbolic that the disaster in northern Japan also hit the automobile production plants in the U.S., and the scale of such interdependency was also beyond our assumption, if not beyond the awareness of industry insiders. Let me digress a little bit here. The northern Japan region is not only the final production base for manufacturing Japan's flagship products, such as automobiles, electric appliances, semiconductors and digital cameras, but it is also a concentrated area of leading mid-size manufacturers of essential parts for those major products.

The region also is producing materials used for manufacturing steel surface processors and circuit boards, as well as publishing and printing, so the impact of the devastation in this region spilled over to many fields including plywood panels, newspapers, printed flyers, automobiles, home electric appliances and construction materials. The damage here was again beyond our expectations. According to an article in the Asahi Shimbun on March 29, 2011, the production of zinc, the material for galvanizing steel sheet used for automobiles and roofs, was reduced by 70 percent compared to the pre-earthquake level, since the top three manufacturers stopped their operations, and the production of copper dropped to a level that could fulfill only 60 percent of domestic demand.

In the next section, I will pick three characteristic bottlenecks in Japan's

food system that was exposed after the earthquake. Each of them has a lot in common with many other industries, but these three bottlenecks present typically important components for the food system in Japan.

Wrong preconditions – business models designed only for normal operations

I dare say this despite a possible misunderstanding – I think those engaged in farming and fishing have been better prepared mentally for the disasters to a certain extent, than others working with other food systems, because farmers and fishermen have long been exposed to various unusual situations such as cyclical heat waves and cold weather damage. It is true of course that the scale of the disastrous March 11 earthquake hugely exceeded the mental preparedness of ordinary people both in size and impact. Nonetheless, those primary agricultural producers have known the cruelty of natural disasters through their real-life experiences much better than people working in general manufacturing or service industries.

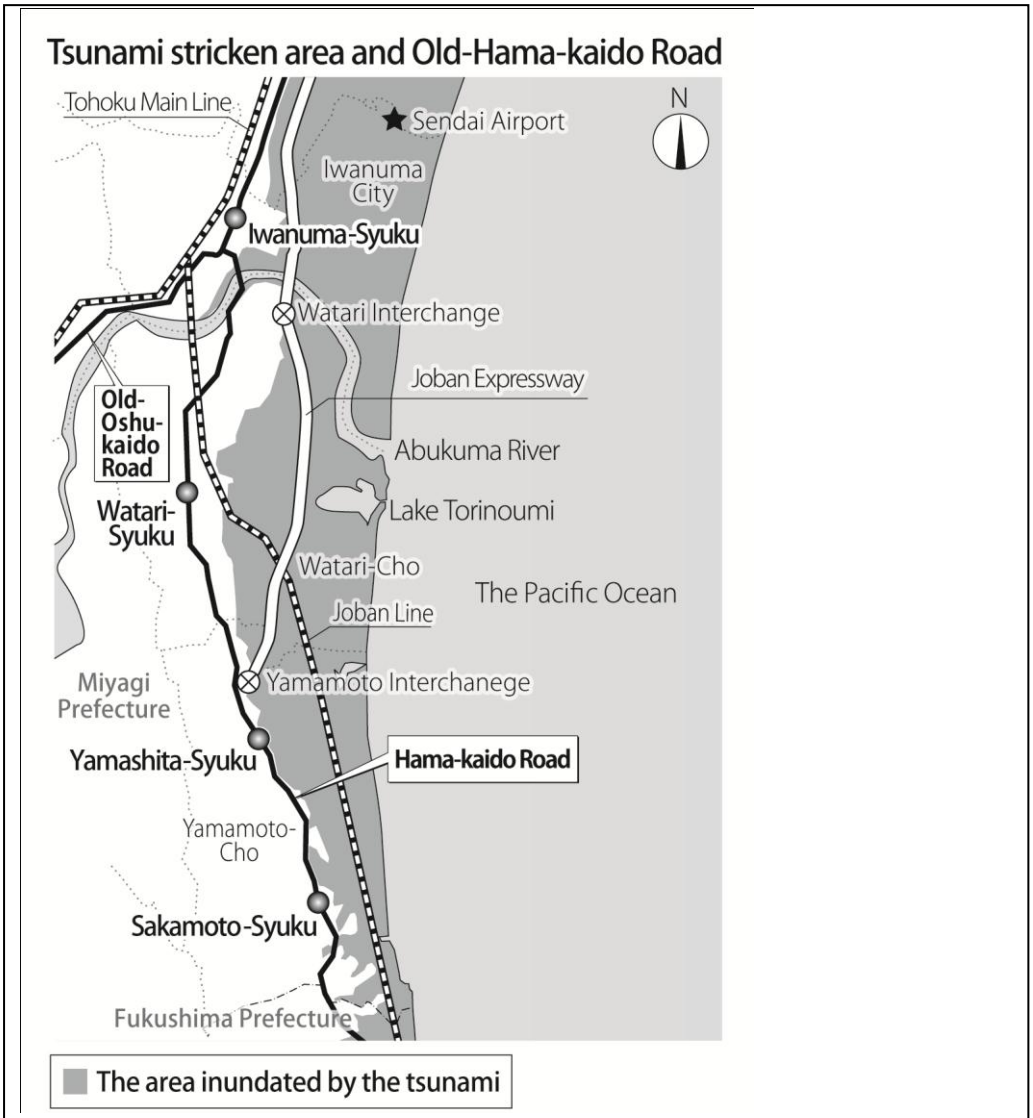
The problem here is that in each later stage of the food system beyond farming, such as production, processing, distribution and retailing of agricultural products, people have given little thought to those possible situations where everything gets wiped out in the blink of an eye.

The fact is that, except for those who have actually experienced a tsunami or great earthquake in the past, or those who have regular contact with such experienced people, everyone in both the public and private sectors has continued to pursue economic development focused only on productivity, streamlining, convenience and investment efficiency. These goals for firms and institutions are only possible on a normal basis. We cannot deny the possibility that this mindset made the damage much worse.

Torahiko Terada, the previously mentioned physicist, also pointed out in his book, "… as civilization advances, this comes with an increased degree of violence in the devastation that natural disaster's tyrannical power brings about," and his point is more worth listening to now than at any other time.

I would like to show you another intriguing example of the excellence of

ancient wisdom.



The Kahoku Shimpo article can be viewed at:
http://www.kahoku.co.jp/spe/spe_sys1062/20110425_17.htm

The map above appeared in the April 25, 2011 issue of the Kahoku Shimpo, the local newspaper distributed mainly around Sendai City, Miyagi Prefecture, and its headline was, “Ancient wisdom prevented inundation; Hama-kaido in Southern Miyagi Prefecture.” The map is based on research by Professor Arata Hirakawa of Tokoku University. As the map shows, the

old Hama-kaido road extends around the Abukuma River just west of the inundated area (dark shadowed part) where the tsunami after the Great East Japan Earthquake struck. This old road was spared not by accident, but by the ancient wisdom gained through our ancestors' experiences. We may have forgotten the valuable lessons of history and built too much on landfill recovered from the sea, in the pursuit of economic growth and enhanced living standards.

Just as the familiar coastal line on the map, the food system that we have built worked quite effectively during normal times, and it was actually working before March 11, but it was suddenly reduced or shut off in our time of emergency.

Right after the earthquake, national restaurant chains, fast food restaurants and convenience stores in the affected areas had to halt their business. These chains have become the symbols of our dietary habits. Thus, if we understand who helps and supports the diets of the victims in the devastated areas, we will take a step forward toward figuring out a new food system.

Supply and demand for food in an emergency

Now I would like to point out some very important facts that we may easily overlook due to the huge number of victims (15,824 deaths, 3,824 missing persons, 5,942 injured as of October 18, 2011, according to Cabinet Office data).

Needless to say, food is something to eat. As long as the beneficiaries of the food are living humans and animals, we must thoroughly examine how the food was provided to the surviving evacuees, and we must clearly remember that.

The Cabinet Office published a report as of May 13 on the amounts of major relief supplies delivered during the 41 days from the day of the Great East Japan Earthquake through April 20. According to that data, the total stable supply, including bread, instant noodles, rice products such as onigiri rice balls, rice cakes and packed cooked rice, polished rice and other canned food,

amounted 26.21 million servings.

Emergency relief supplies (Cabinet Office data May 13, 2011)

Category	Item	Amount
Staple food, water	Bread	9,391,373
	Instant noodles	2,557,730
	Onigiri rice balls, rice cakes, packed cooked rice	3,501,074
	Milled rice	3,357,313
	Other (canned food)	7,401,744
	Sub total (Unit: serving)	26,209,234
	Drinking water (Unit: bottle)	7,937,171
Daily necessities	Toilet paper rolls	379,695
	Blankets	409,672
	Diapers	395,521
	Non-prescription drugs	240,314
	Surgical masks	4,380,442
Fuel	Fuel (liters)	16,031,000

*The results shown above were procured and delivered by the Japanese government, and the relief supplies were continually provided by the prefectural governments.
*These figures are for relief provisions for disaster victims from March 11 through April 20 implemented by the relief team. From April 21, the relief effort was taken over by the prefectural governments.

In addition, 7.94 million bottles of drinking water were provided as relief supplies. (These are the figures for state-provided supplies. Supplies provided by municipal bodies were counted separately.)

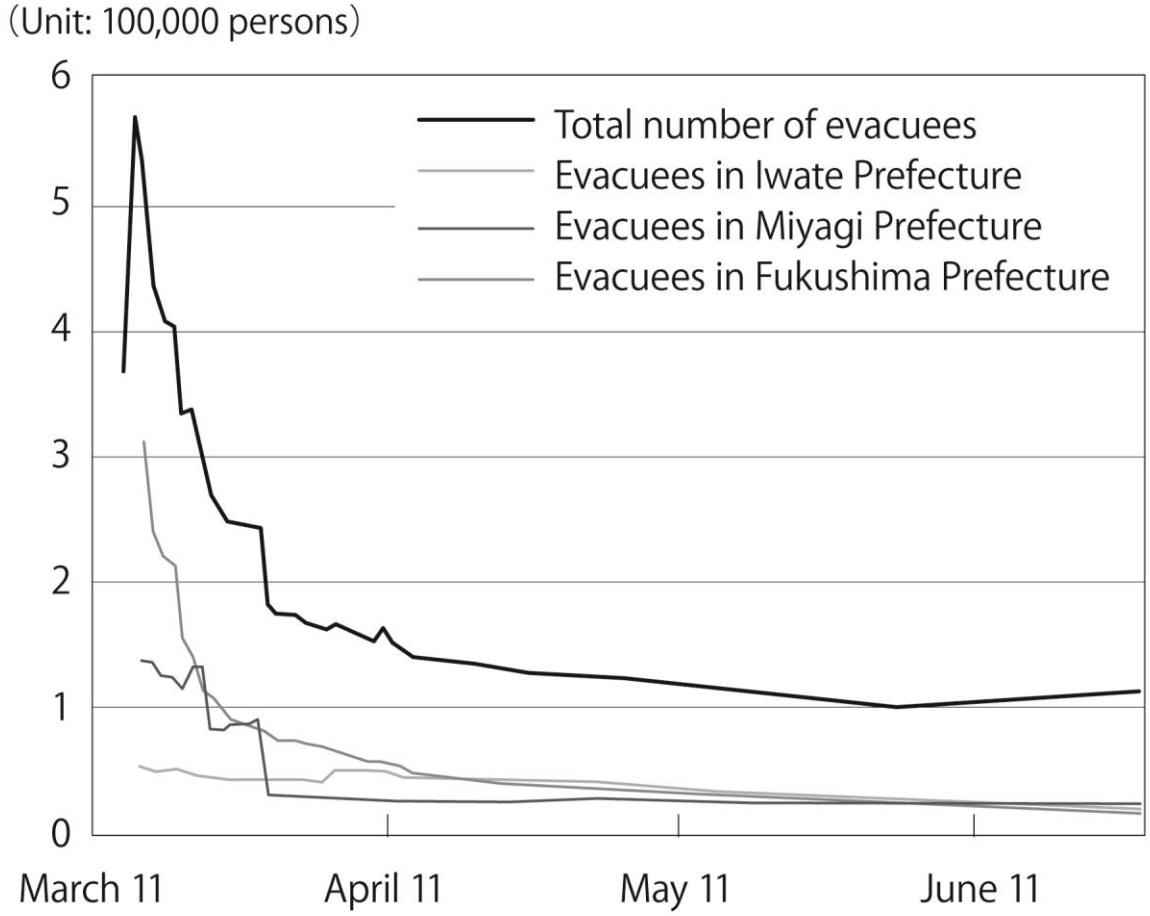
If one person ate three times per day, then 26.21 million servings would feed 8.74 million people for one day. Now let's figure out how many evacuees there were during the above mentioned period.

The line chart below shows the change in the number of evacuees based on

data from the Asahi Shimbun newspaper, but details were omitted due to limited space. It was reported that about 570,000 people in total took shelter in evacuation centers on March 15, soon after the earthquake. That was the peak number, and the number of evacuees gradually decreased, to about 400,000 one week after that, then to some 250,000 after two weeks, to 170,000 by April 1, three weeks after the earthquake, and to some 130,000 by May 2. There were still about 100,000 people in shelters on June 2 and some 110,000 in early July.

As food is a daily necessity, what matters is the cumulative total of evacuees. The total cumulative number of evacuees for the 38 days from March 11 through April 18 is about 8.48 million. Interestingly enough, this number almost matches the previously calculated number of total supplied servings (enough for 8.74 million people).

Number of evacuees after the Great East Japan Earthquake



＊ The figures for March 14 and 15 are only the total numbers. The figures from March 16 through April 18 are numbers announced by the Asahi Shimbun newspaper's morning edition. After that, the graph was created by the author based on numbers from April 23, May 2 and June 2 and 28 provided by the Asahi Shimbun newspaper.

For the 40-day period after the earthquake, it is safe to say that the supply and demand for food was almost balanced as far as the total number is concerned. Again, supplies provided by individual municipalities are counted separately.

Logistics

On the other hand, predicaments at the disaster-hit areas started to spill over through the newspaper headlines, starting right after the earthquake. One headline read,"No water, no milk, no food - why not delivered?" Other headlines declared, "Everything is desperately scarce, disruption from damaged roads" and "Food piles up in front of municipal offices, no manpower to deliver" (The Asahi Shimbun, March 17, 2011). Apparently relief supplies were abundant, but the roads and transport infrastructure were cut into pieces and blocked delivery to the disaster-affected areas.

In fact, it seemed that the demand met supply as a whole in the medium run, but supply shortfalls were extreme in the short term or in particular local areas. Those who were engaged in delivery or transport of relief supplies immediately after the disaster must remember very clearly how messed up things were. Sometimes the demand and supply meet on paper, but in practice there is a huge imbalance in certain areas and times. I hope you will remember that such a situation in the food supply is repeated everywhere in the world almost every year.

The main agencies responding with food assistance and rescue activities in the areas most severely struck by the earthquake, tsunami and nuclear power plant accidents were the Self-Defense Forces (SDF), the Fire and Disaster Management Agency, the Japan Coast Guard, the U.S. Military in Japan as well as other assistance forces from abroad. In particular, the SDF deployed more than 100,000 members at maximum and dedicated themselves selflessly to the relief, rescue and assistance activities literary all day and all night.

To put it more precisely, in the face of national crisis, private corporations and food companies with nationwide supply chains had to devote their

resources to confirming the safety of their facilities and employees, as well as recovery efforts. They could not operate their normal business in the disaster areas. In the areas spared from disaster, these private companies made special efforts to meet increased demand via intensified production to meet both the usual and the additional emergency demand. But the transport infrastructure to the disaster areas was disrupted, so the goods weren't delivered any further than the companies' undamaged major distribution bases. Therefore, the bottleneck I mention here is logistics.

Before the Great East Japan Earthquake, the food industry, including food manufacturers, had been promoting streamlining and rationalization at the maximum level nationwide, even throughout the world, for the sake of a more efficient supply chain, whereas restaurants, takeout food chains, convenience stores and fast food restaurants could offer a uniform menu only because their suppliers provided a certain standard of ingredients from around the country. But the earthquake drastically changed the circumstances of the food industry and forced these retail food companies to review their business model, which was designed in principle only for normal progress and efficient supply chains.

Foodservice Industry Research Institute issued a report in 2005 showing that 43 percent of what we eat is cooked outside of our home. This means the ratio of home-prepared food is getting less, whereas eating out or taking out cooked food is increasing. Thus, if food industries shut down completely for some reason, many of us would certainly suffer.

Reviving mom and pop shops

Right after the earthquake, when a number of leading food companies were completely dysfunctional, was it really true that many disaster victims could eat only the emergency relief food supplies delivered by the SDF and other rescuing agencies? This time, the disaster-affected area extended over a very large space of some 500 km north-south and 200 km east-west. Some places like Minami Sanriku-Cho in Miyagi Prefecture suffered a catastrophic damage, and many other places suffered overwhelming damage even though they were not as severely damaged as Minami Sanriku-Cho. In such

circumstances where supermarkets, restaurants and convenience stores were not open at all, how could those people get their food if they did not get SDF assistance or were not staying at the evacuation center?

It is risky to lump all disaster-struck areas together and call them quake-hit areas in one simplified way, because the impact on the food system depends on the degree of the disaster's severity. Interestingly, systems in general are more apt to expose their problems when halfway destroyed rather than completely destroyed. If a system is completely destroyed or if everything is lost, the system can be rebuilt from scratch, but in the case of halfway destruction, people work most effectively in their efforts to make the best use of the remaining parts of the damaged system and to minimize the loss, as well as the costs. One example that gave us a useful hint was presented by conventional shopping streets in the central zone of Sendai City and in Taihaku-Ku of Sendai City, where I live. These areas were struck by the earthquake but not the tsunami. Nevertheless, most big supermarkets, convenience stores and fast-food restaurants were completely dysfunctional right after the earthquake. Thus, people in these areas had to take actions on their own to secure their food supply.

There were exceptional cases where certain firms with their nationwide networks procured materials and processed them outside of the disaster-hit areas to concentrate products in specific stores in the specific regions of the disaster zone so that the most devastated victims could be served. One firm (Company A) concentrated its product supplies in stores in central Sendai, whereas another (Company B) concentrated its products at stores in the most damaged areas.

However, these results are related to the corporate policy of individual firms, so it is not our subject matter here. Instead, I would like to mention what actually happened in the halfway damaged parts of the existing food system.

With such devastation, many people who didn't rely directly on SDF relief supplies (including myself) were provided by the old-fashioned small shops that tend to be marginalized under ordinary circumstances by leading large-scale operations. The local small firms, so-called mom and pop shops,

had a chance to shine, temporarily.

Re-evaluation of the role of complementary players

As familiar supermarkets and convenience stores were all closed, local small shops with a short supply chain but with a long history of face-to-face customer relationships, attracted long lines of shoppers who were in desperate need for food day after day. Among such small shops, many drinking places that usually don't offer daytime service sold packed snacks at make-shift setups in front of their shops.

Many people who went out in search of food in Sendai City a few days after the earthquake witnessed such flexibly responding services, but this valuable fact was apparently forgotten once the big operations resumed their business.[3] And such phenomena can positively affect the conventional win-or-lose competition between nationwide big-scale chain stores and local small shops in the future. In strategic management theory, there is a concept of "complementary producers that provide complementary goods/services to customers, or sellers who provide complementary resources to suppliers."

It is possible to regard the actions of local small shops as purely humanitarian or altruistic in nature, or it could be the result of opportunistic ambition in the absence of powerful rivals. But I think there is lots of potential in that case, and both major chain stores and local small shops can learn from this experience of disaster in order to rebuild the local food system. If big-name stores don't forget the fact that their customers were supported by local small shops when they were incapable of continuing their business, they can seek a way to coexist rather than continue relentless win-or-lose competition. That must be what is most required now and in the future.

Important viewpoints to include in reconstruction plans

[3]Professor of Miyagi University, Dr. Tamotsu Kawamura, a colleague of the author made a presentation titled, "The role of mom & pop shops in supplying food after the Great East Japan Earthquake in Sendai City," at the Food System Research Association of Japan Convention in 2011.

What food system should we construct now that we have experienced the Great East Japan Earthquake? This issue is closely tied up with Japan's future food system, too.

I summarize my conclusion briefly below.

Now it is getting to the time when we should face up to the reality surrounding food and discuss the issues openly. For that, there are at least three essential points.

First, we should earnestly discuss, based on reliable numbers and tested scientific technologies, whether Japan's 4.61 million hectares of farmland is truly enough to grow agricultural produce to feed the entire population. It is important for all of us as a nation to understand the true situation, not based on hopes and delusions but on the actual facts.

This step is like a health check-up for us so that we can understand the status quo. It may be pointless to discuss the potential of 100 years or even 200 years in the future and to weigh their positive and negative sides without discussing the solid facts based on actual human and corporate behavior.

Second, based on the first step, we have to construct a mid-term to long-term grand design for which policies to implement and how long it should take in order to enhance our domestic agricultural production as well as to sustain essential imports.

In this stage, we should thoroughly review not only what Japan's has experienced, but also foreign examples of disaster recovery in nations that suffered the same type of disaster as Japan. It is also important to ensure that our restoration scheme and its specific implementation measures should be coherent with international trends. I think the Great East Japan Earthquake involved three major disasters: earthquake, tsunami and the nuclear power plant accident. At present we face many issues, but the strongest impact on our life is the probability of the recurrence of earthquakes and the ways of handling nuclear power plant accidents. It

wasn't our choice to get in this bind, but it is true that Japan has to be responsible for cleaning up the damaged nuclear power plants for quite a long time in the years to come.

If a well-designed plan is carried out for the coming decades, it will inevitably be closely intertwined with Japan's food and agricultural development as well as environmental issues. The effects of radioactive substances scattered in the atmosphere and ocean cannot be handled only by the Japanese government domestically. Neighboring countries and the entire world are stakeholders in this issue now.

Given the rise of interdependency, the following things are needed to make arrangements and agreements with multiple stakeholders: Strong scientific knowledge and technologies, as well as procedures and decision-making governed by mutually agreed rules. On top of that, we need negotiation skills developed based on knowledge, technologies and rules. Japan has to make a grand design that will take every element into account.

Urgent action is needed, but thorough investigation of the food system is also needed

Third and last: The lessons are very clear for individual corporate management and government officials. They must thoroughly investigate the precedents both within Japan and overseas, and they must track down which parts of the food system are most fragile, especially the supply chain. They must address these bottlenecks very urgently.

When carrying out their investigations, officials must figure out not only what to do, but also what not to do, by reflecting on the lessons of the past.

It is not wise to restore systems that had evident shortcomings and fragility without fixing them. Therefore, scholars and researchers, including myself, bear social responsibility to clarify the problems that arose from the way food systems developed in the past. We must view these issues as a whole and then come up with viable solutions most urgently. I make this suggestion partly out of my own soul-searching.

Chapter 2

Hog Lift and Corn from America

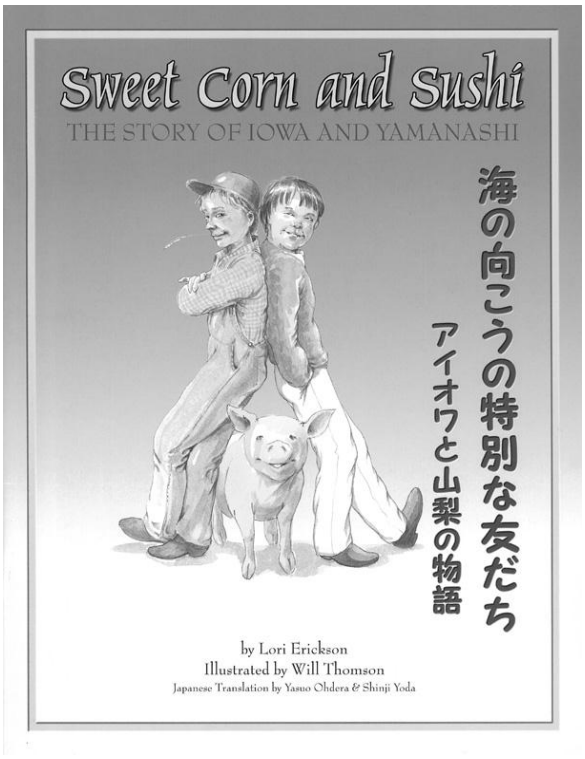
How the U.S.-Japan relationship grew out of Iowa's support for Yamanashi

Hog Lift

"Once there were two beautiful lands and two proud peoples separated by a great distance and many differences. This is the story of how a wonderful friendship has blossomed between them."

These are the opening lines to a beautiful picture book with a unique title: "Sweet Corn and Sushi – The Story of Iowa and Yamanashi" (see picture below). This book, written by Lori Erickson, is less than 30 pages long and can be viewed online, so I would recommend all of my readers to have a look. (http://www.myfood.jp/ebook/top.html)

A picture book depicting the friendship between Iowa and Yamanashi

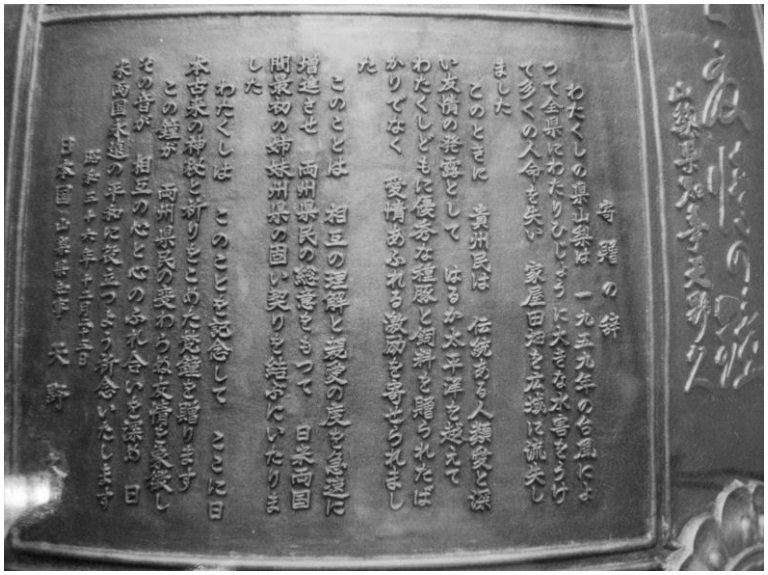


To be honest, before reading this book, I myself had completely forgotten that the first prefecture to form a sister-state bond with the U.S. was Yamanashi. When I visited Iowa, I saw the famous “Bell of Friendship” (which is also featured in Erickson’s picture book) and I fully understood the special connection that exists between Yamanashi and Iowa. However, consumed by the hustle and bustle of everyday life, I must have tucked away this important piece of memory somewhere in the back of my mind. The fault is my own.

And now, faced with the task of giving those food issues we take for granted a more concrete form, the history of U.S.-Japan feed grain trade cooperation is a crucial topic of discussion. The story of the “Iowa Hog Lift” in particular is one we must not omit. Why? Because when people talk about U.S.-Japan relations today, the history of such down-to-earth grassroots cooperation tends to be overlooked, resulting in discussions that focus only on observable, short-term phenomena and jumping to black-and-white conclusions.

You may think it strange for me to bring up China in a discussion about the U.S. and Japan, but I would like to take this opportunity to introduce an old Chinese saying that goes, “When drinking water, do not forget the one who dug the well.” This saying is not talking about obligations, but rather about voluntary, mutual help when one’s counterpart is faced with a difficult situation – such pure goodwill and action, I believe, are the keys to a long-lasting positive relationship. Now, let us take a look at this history in conjunction with Erickson’s story.

Yamanashi Prefecture gave this Bell of Friendship to Iowa as a token of gratitude in return for the support provided through the Hog Lift



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What Kind of Relief Aid Can We Provide? – Yamanashi's Typhoon Damage and the Hog Lift

The western part of Japan suffered extensive damage from typhoons during the summer and fall of 2011. About half a century earlier in 1959, great storms such as Typhoon Vera (The Ise Bay Typhoon in Japanese) ravaged many regions of Japan. The war between the U.S. and Japan had just ended in 1945, and for almost 15 years since then, both countries had worked hard to rebuild the people's livelihoods, but the typhoons of 1959 caused considerable damage to many parts of Japan.

At the time, a man by the name of Master Sergeant Richard Thomas was working for the U.S. Air Force in Japan. When Master Sergeant Thomas heard that Yamanashi had suffered immense damage, he thought about what he could do to assist in the relief effort. Thomas was from Iowa, which was famous for its large hog industry. He thus came up with the idea to send hogs from Iowa to help the typhoon-stricken livestock farmers of Yamanashi.

There are many words in English that describe pigs; grown-up pigs are referred to as hogs, while "pig" is used specifically for the younglings. Swine is a more general term that describes all aspects of pigs.

To be precise, the animals that were sent were breeding hogs, and there are specific names that describe male and female breeding hogs, but we will not go into further detail here, since it is too technical. Some readers may think of the word pork when talking about pigs, but pork only refers to pig meat.

Now, back to sending Iowan hogs by airplane to Japan – today, we may dismiss this with a shrug and say, "What's the big deal?" However, 50 years ago this was a major project. Even today, this project of airlifting hogs is something of a legend, remembered as the famous Hog Lift – the Flying Pigs Project, as one could say.

The 36 Pigs Arrive in Japan on a U.S. Air Force Plane

Because Master Sergeant Thomas was working for the U.S. Air Force, he

could contact the agricultural attaché at the U.S. Embassy in Japan and get approval from him, which then led to the U.S. Air Force agreeing to provide military aircraft for the hogs – an unbelievable turn of events considering today's way of doing things. This certainly was a major decision.

The U.S. Military Aircraft that made the Hog Lift possible

On a side note, there is currently an organization called the U.S. Grains Council, which has a branch office in Japan. This organization works with the United States Department of Agriculture (USDA) Foreign Agriculture Service to promote the overseas export of grains produced in the U.S. There is no doubt that the Hog Lift served as an important foundational experience for this organization. I will talk about this in greater detail later.

Now, back to the pigs – back then, commercial cargo jets did not yet exist, so the pigs had to be transported using a cargo aircraft owned by the U.S. Air Force, and the aircraft had to make many painstaking stops along the way. Those 36 hogs sent by Iowa as a token of goodwill were placed in specially designed wooden boxes, and they were also treated like VIPs, with a specialist escorting them and giving them frequent sprays of water so that

they did not die of heat. These hogs were sent from Iowa's capital, Des Moines, to Japan on a three-day journey.

The 500,000 Descendants of the Original "Flying Pigs"

Erickson's picture book talks about how the American farmers were very considerate, sending along 1,500 tons of corn so that the hogs, who used to freely eat corn and soybeans in a spacious field back in the U.S. would not be disturbed by any sudden change in their diet. The book also talks about how, in a period of history when ordinary civilians had little freedom of overseas travel, these pigs came all the way to Japan, and how the hogs, upon first arriving in Japan, had a taste of Japanese radishes and carrots. Erickson's book depicts all of these things with a gentle and warm touch.

Unfortunately, one of the original 36 hogs died on its way to Japan, but the remaining 35 lived out their full life spans. The last one died nine years after arriving in Japan, in the midst of the post-war economic boom in Japan. By that time, it is said, the 35 hogs had contributed to the livestock and hog industry of Yamanashi Prefecture and already had about 500,000 descendants.

This was an incredible example of concrete and effective relief measures following a natural disaster. Today, many of the hogs that are bred in Japan are said to share some genes with the hogs of Iowa.

In this way, one can see that the Hog Lift was an embodiment of everyone's good will –not only that of Master Sergeant Thomas, the U.S. Embassy and the U.S. Air Force, which immediately understood Thomas' intention and sprang into action, but also that of the farmers who actually donated the hogs that were sent, as well as all the people who took part in transporting the hogs.

A descendant of the original 36 hogs who came to Japan on the Hog Lift, in good care at the Yamanashi Prefectural Livestock Experiment Station

From “Hog Exchange” to “People Exchange”

A year after the Hog Lift, in 1960, Iowa and Yamanashi became sister-states. As I mentioned earlier, this was the first sister-state bond between the United States and a Japanese prefecture. The Bell of Friendship that Yamanashi sent Iowa in 1962 is a testament to this bond.

Incidentally, I myself was born in 1960. Thinking of the people’s effort that has existed since the time I was born and how, in the half-century since, Iowa and Yamanashi have been enriching and deepening their interaction in various fields, I am reminded of the importance in life of taking immediate action with whatever we are capable of doing.

One of my favorite expressions is “now or never.” Master Sergeant Thomas is a great example of someone who jumped at a one-in-a-million opportunity and has since gone down in history for this reason. I know nothing of his

military career, but it is truly admirable that he accomplished such a great feat during his lifetime.

In addition, one must not overlook the fact that Master Sergeant Thomas' initiative was not only innovative and new at the time, but it also contributed to the long-term development of U.S.-Japan trade and cooperation across various fields as well as overall expandability.

In the case of the Hog Lift, Master Sergeant Thomas, who originally came up with the idea, was probably just trying his best to do something to help. In that respect, those people and organizations that supported Thomas' cause and provided assistance, despite miscellaneous difficulties, were also acting out of pure goodwill to do what they could to help.

Oftentimes, once things start moving forward, they progress in all sorts of unexpected directions. In the case of Iowa and Yamanashi, the 35 hogs led to full-fledged interaction between our two countries.

Since then, every governor of Yamanashi Prefecture has visited Iowa. School teachers, artists, entrepreneurs and children have also taken part in this exchange, contributing to an on-going interaction at the civilian level as well as governmental level. It is widely known that many natives of Yamanashi participate in the annual week-long bicycle race across Iowa called RAGBRAI, while many Iowans have climbed Mount Fuji. As the title of Erickson's picture book "Sweet Corn and Sushi" suggests, vastly different elements from each culture are now freely interacting at all levels.

Young readers may be familiar with a Japanese Manga series by the name of "One Piece." The creator of this series, Eiichiro Oda, once said, "The characters in the Manga leave the artist's hands and start moving about independently." Similarly, one could say that the Hog Lift left the hands of its "creator," Master Sergeant Thomas, and the friendship between Iowa and Yamanashi has since blossomed "independently."

I will return to the topic of hogs once again. Yamanashi's hog industry recovered and prospered by building upon the foundation provided by the

hogs sent from Iowa, and subsequently, an increase in the number of hogs led to a greater need for feed grains. This was the next step, whether or not designed by a strategy, but it naturally led to the exporting of U.S. grains. This is an example of one form of development with expandability, as mentioned earlier.

Japan in need of feed grain, the U.S. with surplus grain to export

We have looked at how, thanks to the hard work of Master Sergeant Thomas and others, hogs were delivered to Yamanashi. In the meanwhile, how was the Japanese livestock industry as a whole doing? We will discuss the specific circumstances on the Japanese side in a later chapter, but for now, suffice it to say that, aside from the natural disasters, the Japanese livestock industry during this time was also suffering from a serious shortage of feed grain. This was not a short-term problem, since it was becoming more and more apparent that economic growth and subsequent improvement in people's standards of living would result in a long-term increase in the demand for meat, and that in order to meet such demand, large quantities of feed grain would be necessary for the breeding livestock.

The U.S. at the time was experiencing a boom in the supply of feed grains, and there was a surplus. This meant that the U.S. had the resources and the ability to fulfill Japan's demand quite easily. Even so, one must not forget the wide range of long-term cooperation that had been taking place at the top levels as well as grassroots levels in bridging the psychological and geographical distance between Japan and the U.S. In 1993 when the state of Iowa was devastated by floods, the people of Yamanashi sent $300,000 to help the Iowans, demonstrating the strong unity between these two lands. The people of Yamanashi no doubt remembered who had helped them out when they were suffering the most.

The previously mentioned U.S. Grains Council was established under these circumstances, in 1960, and its first overseas office was set up in Japan the following year. These are the concluding words in Erickson's picture book:

"Whether you live in Iowa or Yamanashi, know that there are many friends

waiting for you half a world away."

This picture book has very strong emotional appeal, but it also conveys a strong message about how something we take for granted first began, as well as how we should think about the future.

Next, we will take a look at how the U.S. reacted to the previously mentioned increase in demand for meat in Japan. As this is one of the major developments that have supported the increase in feed grain imports, as well as Japan's livestock and formula grains industry, it is an important topic to discuss. There are many topics to talk about concerning various products, but here we will focus on eggs and chicken.

Surging Demand for Protein in Postwar Japan

In any given country, the first thing on the minds of agricultural producers is, "How can I sell my produce at the highest price possible?" This is basically what it boils down to, and it is no surprise since people involved in agriculture must make a living somehow. Academics and various organizations may think up additional reasons, but at the end of the day, regardless of whether we are talking about developed or developing countries, I think this is the agricultural producer's primary concern. If the livelihood of the farmers and their families is at stake, lofty talk is not going to push people into action. The larger the scale of management becomes and the more industrialized farming becomes, the more seriously this problem presents itself.

I mentioned earlier that back in the 1960s the U.S. grain supply exceeded demand. This situation is trouble for the producers – the price goes down, and the farmers need to look for new buyers, but this difficult situation continued in the U.S. for a while. Thus, it was welcome news when standards of living rose in the populous Asian countries and Asian people's eating habits diversified, because that meant a whole new market was opening up.

Japan at the time was finally finished with its physical recovery after World War II and had begun the process of rapid economic growth. Japan was also

expecting a rise in meat demand. For all these reasons, Japan was an attractive potential market for the U.S. grain industry. With a more prosperous Japan, the demand for eggs, pork, beef, poultry and milk was also rising rapidly.

The U.S. wanted to export its agricultural produce, especially livestock products and grains, while Japan, due to changes in dietary habits, needed increasing amounts of livestock products. During this period, fueled by large-scale economic growth, many aspects of Japanese life saw dynamic changes. I would like to talk about eggs here as an example of the clear, dramatic effects of advertising, even though eggs were perhaps not as large-scale as pork or beef.

It had always been known through experience that eggs are a good source of nutrients. Many Japanese homes in the 1960s still did not have refrigerators, but eggs can be kept for several days without the use of refrigeration, so if accurate knowledge about how to handle eggs could be spread, one could expect to see a rise in egg demand in Japan. Thus, the American authorities at the time went ahead and conducted campaigns, hosted seminars and made advertisements together with Japanese officials interested in promoting eggs.

Eggs were Sold Singly in the 1960s

"The History of U.S. Exports of Feed Grains to Japan" in the GAIN Report (JA8521, USDA Foreign Agricultural Service, 11/5/2008) cites the following quote by Hubert Dyke, who was directly involved in sales campaigns for eggs in Japan. This illustrates differences in the standard of living and lifestyle between the U.S. and Japan at the time:

> In 1964, egg cartons were unknown in Japan. Eggs were sold in bulk, by the egg or by the kilo, and the Japanese housewife had to carry the eggs purchased in her hand. Occasionally, she might put them into her silk scarf folded at the four corners used to carry groceries, books, or any other articles requiring a bag. But the chances of breakage were great, so she often carried them in her

hand, which meant that she could only buy two eggs at one time.

The Council contracted with a plastic toy manufacturer to make a plastic egg carton which held six eggs and could be brought back to the store on future shopping trips. In cooperation with 16 associations in Japan, we held an Egg Festival Day. The local associations paid for the TV and billboard advertising and the retail merchants sold eggs at a discount on that day.

Any housewife who purchased six whole eggs at one time received, absolutely free, a plastic egg carton. We distributed 1.5 million of the cartons in Tokyo alone that day, and they were gone by 10 a.m. The theory of this promotional test was that if the housewife had the eggs in the kitchen, she would use them more freely. Eight years later (1972), egg cartons are common in the supermarkets.

Reading these comments brings back some of my own memories. While writing this book, I contacted my parents, who were born in 1926 and 1929, to ask them about how they used to buy eggs in the early 1960s, especially around the time when I was 4 or 5 years old, because my memory from that time is not clear.

After talking with my mother, I was reminded that there was an egg shop near my house just outside of Tokyo. There, the eggs would be laid out on a mat of chaff, and the customers would say how many they wanted to buy. When I was young, I used to go buy eggs with my mother, and as I waited for her, I would draw letters or pictures in the chaff mat, or I would pick out and ask for those few brown eggs that were mixed in with the white ones. These are some of the memories that came back to me as I was talking to my mother.

American Feed Grains Supported the High-Flying Japanese Poultry Industry

My mother remembered that after specifying how many eggs she wanted to buy, the shop person would wrap the eggs in newspaper. Now I also

remember how I used to carry home the eggs wrapped in newspaper and how I had to be careful not to break them. Eggs were also placed in paper bags at one point, and my mother recalled that later on, eggs were placed in plastic cases, which could be kept and brought back to the store for reuse on future shopping trips.

From both my parents I was able to verify that this definitely was the case around 1964 and 1965. Back then, I was living in a commercial district outside of Tokyo. Just looking at the example of eggs, the rapid transition from the time of eggs laid out on a chaff mat and wrapped in newspaper to the time of reusable plastic cartons, and finally to all eggs being sold in plastic cartons symbolizes the rapid transformations in distribution, sale and purchase behavior that were taking place at the time.

The plastic egg case has become a most commonly accepted convenience now, but my perspective on eggs has surely changed after learning about the background of its debut. This is an effect of knowing what we take for granted and how it has been brought about through many people's involvement and efforts.

In the early 1960s, the per capita annual consumption of eggs in the U.S. was estimated at 290, while in Japan it was only about 80. By the early 1980s, Japan had reached the same level as the U.S., so one can appreciate the extent of the rapid transition that took place between these years.

Even when I had grown a little older and all the eggs at the store were already placed in plastic cases, I remember childishly wanting to get the carton that contained a brown egg.

Looking back, it is evident that this was a period of rapid growth in the Japanese poultry industry, accompanied by an explosive rise in the demand for feed grains. This meant that the feed industry, which provided formula grains by processing imported grains, was also expanding rapidly. As you can see, the relationship between Japan and the U.S. has had a pervasive impact in all areas of our lives.

Next, I would like to talk about a case in which something we now take for granted originally came into being through a sort of innovation: The ways in which poultry is marketed in Japan.

Bone-in Chicken – A Novelty for Japanese People

Some of the work that the USDA Foreign Agriculture Service (FAS) does relate directly to technology, trade and national trade policies. Most of the FAS's budget is used for supporting developing countries, but there is also a program for promoting export. It was this conventional overseas market development program, rather than the more recent market-access programs that were established in the mid-1980s, that fostered the plastic egg case initiative mentioned in the previous section, as well as the poultry example that we will now discuss.

These programs are a means of developing, sustaining and expanding export markets for U.S. agricultural produce in the long term, as well as a means of providing private trade organizations with funding to support their activities. It is said that "necessity is the mother of invention." Just as plastic cases were introduced in order to expand the demand for eggs, there is an interesting episode concerning chickens. The following quote is taken from the U.S. Agricultural Export Development Council's "Partners in Developing Farm Markets Overseas" by James Howard and others, describing how poultry was handled in Japan during the 1960s:

> Historically, it had retailed mostly as boneless meat, in narrow strips, sold by the gram to be used by housewives in combination with other foods, especially in soups. Whole or cut up birds with bones were a rarity to Japanese consumers until Daimaru and later, the FAS market development program promoted bone-in poultry.

This information is very interesting for us. At the time, the Institute of American Poultry Industries was doing various activities to promote the sale of the U.S.-produced poultry, and after researching the state of the Japanese poultry industry and how chicken was being consumed, as well as seeking a potential buyer, they chose the Daimaru Department Store in Osaka as their

vehicle.

After negotiating with Daimaru's food section manager, they were able to get Daimaru to agree to promote the sale of American chicken in all of their stores and to continue purchasing chicken produced in the U.S.

By today's standards, this may seem like an ordinary business agreement. However, as previously mentioned, the vast majority of general Japanese consumers at the time were unfamiliar with bone-in poultry products. In the same document, Howard also writes:

"This small beginning was the start of fundamental change in the way poultry was merchandised in Japan."

Broiler Production by Mass Breeding has started in Japan

This project of introducing bone-in poultry to Japan was started in 1960. Since then, Japan has gone through major transformations, not only in the way people eat chicken, but also in terms of how poultry is produced. In particular, this period marked the transition from traditional backyard chicken breeding to broiler production based on mass breeding. In recent years, broiler production has become the object of much criticism because of its ever-expanding scale and increasingly mechanical method of breeding, but representatives from the Japanese poultry industry who visited the U.S. at the time noted "the efficiency of integrated broiler production and processing; wholesale marketing costs at very low levels, and mass presentation of a large variety of fresh and frozen poultry products in retail stores." They learned much from their visit, and when they returned to Japan, they made use of their newly gained knowledge and integrated those ideas into the rapidly growing Japanese poultry industry.

Bone-in chicken legs were also a personal favorite of mine during my early elementary school years (late 1960s). Perhaps that was because as a child, I was deeply impressed by that round, fleshy meat with the bone sticking out from both sides that cartoon characters ate so vigorously. Bone-in meat made me feel like I was enjoying a luxury. I am sure many children like me were

dreaming that one day they would be able to eat meat like that to their heart's delight.

Ironically, even though it was the U.S. that first introduced Japan to bone-in chicken, nowadays, due to international competition, not much American chicken is imported into Japan. Chicken produced in Thailand gained attention for a while, but Thai chicken, too is now only imported in very small quantities. Looking at the 2010 figures for import quantities, poultry from Brazil made up 92% of all the poultry that Japan imported, while only 6% (34,000 tons) were imported from the U.S. Poultry imported from Brazil added up to a staggering 380,000 tons.

It comes as a surprise that, in spite of the costly shipping that is required to bring the poultry all the way over to Japan from Brazil, Brazilian chicken still has a competitive edge over the American poultry. The figures fluctuate from year to year, but in recent years, the poultry that Japan imports has been overwhelmingly produced in Brazil.

For reference, in terms of import value, among the top 20 agricultural and marine products that Japan imported in 2010, the U.S. was ranked as the top exporter of corn, soybean, wheat and pork. As for beef, the U.S. was second to Australia, and as previously mentioned, the U.S. ranked as the number two exporter of chicken after Brazil.

The Half-Century U.S.-Japan Partnership through Real Businesses

Japan and the U.S. have built a very strong relationship over the past half century. It is true that our diets have been immensely influenced by the U.S. in both positive and negative ways. Japan has been the biggest importer of the U.S. agricultural produce for a long time, and our life has greatly benefited by that as well.

It is a matter of life or death for us to secure a stable source of grain, since Japan doesn't produce much grain, let alone enough to fulfill the domestic demand, except for rice. Based on my own experiences of importing grain from producers other than those in the U.S., it is undeniable that the U.S.

has responded to Japan's demand at least for the past half century. I will talk about that more in the next chapter, but the simple fact is that there are no other countries that can supply the huge quantity of feed grains stably in the mid-term to long term, not just for short-term measurements.

Please remember the comment of that U.S. firm's top executive; "The biggest and the last competitive edge that the U.S. has today is its logistical capability to transport huge amounts of grain consistently and reliably."

This comment seems to represent today's international trading situation. In addition to that, the unrivaled abilities of the U.S. in state-of-the-art science and technologies, as well as their applications, are simply too apparent. What we need to do now is to create a new partnership in food that can endure in the years to come, on the basis of the trust that we have nurtured over the past half century.

In the next chapter, I would like to talk about the situation surrounding today's grain production in the U.S. and how Japan, on the customer side, has dealt with the rapidly increasing meat demand and the related grain demand.

Chapter 3

Today's Agriculture in the U.S. and Japan: Feed Grains

Definition of a farm

I would like to talk about the U.S. farm, but this topic sounds too broad and vague, so let's look at the aspects of farming and grain demand as a way of looking at the whole picture surrounding the reality of the U.S. feed grain production.

It would help our better understanding of farm production in the U.S. if we knew what the production system actually is, the thing we call a farm. One definition of a farm by the United States Department of Agriculture (USDA) is "any operation that sells at least $1,000 worth of agricultural commodities or that would have sold that amount of produce under normal circumstances." In Japan, on the other hand, the term "farm household" refers to a household that operates a farm with at least 0.1 hectares or a household whose agricultural product sales amount to 150,000 yen. This is the Ministry of Agriculture, Forestry and Fishery's (MAFF) definition.

According to data by the USDA, there were about 2.2 million farms in the U.S. as of 2010. Interestingly, there were in 2010 only two states whose numbers of farms exceed 100,000 – Texas (about 250,000) and Missouri (about 110,000). Corn is the major feed grain, and the major producers of corn include Iowa, Illinois, Nebraska, Minnesota and Indiana. The numbers of farm in these states are 92,400, 76,000, 81,000, 47,200 and 62,000, respectively.

Which state has the fewest farms? The answer may come as no surprise. Yes,

it is Alaska, with only 680 farms. However, the average size of an Alaskan farm is 1,294 acres, which is three times larger than the average in the rest of the U.S. Thus, Alaska has fewer but larger farms. Aside from Alaska, the state with the fewest farms is Rhode Island on the East Coast, with a total of 1,220 farms.

In the U.S. as a whole, farmland totaled 920 million acres, about 10 times the entire land area of Japan. It does not mean much to compare the average sizes of farms in terms of agricultural statistics between Japan and the U.S., but just to satisfy your curiosity, the average farm in the U.S. is about 169 hectares (418 acres). Japan's average farm was about 2 hectares in 2011. That means the average U.S. farm is about 85 times larger than a farm in Japan. The average U.S. farm is 36 times bigger than the Tokyo Dome stadium.

Those 2.2 million farms in the U.S. vary widely in terms of their sales. In 2007, farms with annual sales between $5,000 and $10,000 accounted for 10 percent; those earning $2,500 to $5,000 accounted for 9 percent, and farms earning less than $2,500 were 41 percent of the total. Among those 2.2 million farms, therefore, 60 percent had sales of less than $10,000 per year.

On the other hand, farms with annual sales over $1 million accounted for 2.5 percent, and another 2.8 percent of farms had sales of between $500,000 and $1 million per year. That means just 5.3 percent of U.S. farms – only 117,000 – produce 74 percent of the entire agricultural production in the U.S. Those big farms have a strong influence over the whole industry.

U.S. farms as a whole consist of a few large-scale corporatized farms and numerous middle-size and small farms. I summarize the facts about U.S. farms in the following section.

Food grains and feed grains

In the chart below, you can see 2.2 million as the total number of farms, with 372.6 million hectares of farmland. And how much of this farmland is used for producing grain? According to USDA data in 2007, 136 million hectares, a

little less than 40 percent of the U.S. total, were for producing grain.

Grains are divided into two categories, food grains and feed grains. The typical food grain is wheat, of course, and the major feed grain is corn. In Japan, corn reminds us of the grilled Hokkaido-produced sweet corn on the cob served with savory soy sauce. In the U.S., however, the word corn generally reminds people of the dent corn fed to livestock. For Japanese, rice means the quintessential staple food, but the notion of growing rice as a feed grain is attracting more attention recently, as part of the rice acreage reduction policy. Japanese farmers consistently hope to "grow crops for food," however, and they have not gotten used to the idea of food grains and feed grains. So what kind of approach should we make to grains such rice, barley, rye and soybeans?

The U.S. farm profile

Number of farm households	2.2 million
Farmland area	372.6 million hectares
Average farmland area per household	169 hectares (85 times of that of Japan)
Annual sales	1.32 million farms (60% of the total) earn less than $10,000. 120,000 farms (5.3% of the total) earn more than $500,000 (these farms account for 74% of total sales)

We can see how the USDA classifies such grains by using certain clearly defined rules in their monthly statistical reports. Their classification rules are quite different from the traditional Japanese method and also from the strict taxonomical classification system for plants, but they are practical enough and worthy of a few words of explanation, in order that we may better understand the U.S. farm basics.

According to the USDA classification, grains are divided into food grains and coarse grains. The coarse grains include much of the feed grains such as corn, barley, sorghum, oat, rye, millet, and mixed grains, but exclude trade in barley malt, millet and mixed grains.

The food grains include rice and wheat. The representative food of the Western world is bread, and rice is its counterpart in Asia.

The following describes how different the U.S. method is from our way; the coarse grains include corn, of course, and barley, rye and oats, which are categorized in the wheat family, as well as sorghum (which is called Korean, Morokoshi and Takakibi in Japanese, and as Milo in the feed grains market, which is actually the name of the most common variety). All of these crops are included in the category of grains.

Soybeans are oilseed for food oil and animal feed

The crops from which oil is extracted are called oilseed, and the best known oilseed is soybean. Other oilseeds include canola and sunflower. First, oilseeds are crushed and the oils are extracted from them. The remaining material is used for feeding livestock. After oil extraction from soybeans, the remaining material, called soybean meal, is very rich in protein and is an important livestock feed. Other oilseeds are used just like soybeans.

Whenever Japanese people hear about soybeans, it reminds them of tofu (soybean curd), miso (soybean paste) and natto (fermented soybeans), but in other parts of the world, soybeans are widely known for their oil as well as soybean meal, which is an important protein source for livestock. Now Japanese foods are getting popular around the world and many people know about miso and tofu, but the impressions that Japanese and Westerners get from the same crop differ very much.

Fish meal is classified as oilseed in the USDA statistics

In the USDA statistics, oilseeds are considered to include vegetable oil as well as protein meals. Soybean is used for oil extracting and also as soybean meal, whereas olive is mostly just for oil extraction. As protein feed, it may sound strange that fish meal is also considered an important component among oilseeds, as far as the U.S. statistics are concerned.

It is a great help to acknowledge the numbers and sizes of farms in the U.S. and the characteristics of each product, when we try to understand U.S. grain production. The statistics provided by the USDA via the Internet on the 10th or so of every month are basically sorted by the aforementioned classification system.

For your information, the monthly report of Global Agricultural Supply and Demand, mentioned previously in this writing, has been publicized by the World Agricultural Outlook Board of the USDA. The data is available since September 1973. URL: http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1194

Classification of major U.S. agricultural products

Grain	Major grains for food	Wheat, rice
	Coarse grains	Corn, sorghum, barley, rye, oat
Oilseed	Vegetable oil	Soybeans, canola, sunflowerseed, peanuts, olives, cottonseed, coconuts, palm seed
	Protein material	Soybeans, canola, sunflowerseed, peanuts, cottonseed, copra, fishmeal

＊ All coarse grains are used for food in various ways, but wheat and rice are two major grains for food.

Bushel and ton – units for measuring grain volume

The metric ton (MT) is a unit used for measuring large quantities of production and trading goods, whereas the bushel is generally used for measuring grain, and it presents a volume weight. In Japan we use the weight unit "hyo," although one hyo of rice differs in weight from a hyo of wheat. Originally one bushel represented a certain volume of grains that would fill a uniform volume in a cylindrical container.

Today, this uniform volume is stipulated as 2150.42 cubic inches. In the case of corn, one bushel is supposed to weigh 56 pounds (the pound is a unit of weight, and one pound is about 453 grams). I often asked how many

kilograms are in one bushel of corn, and the answer is that a bushel is about 25 kg. The chart at the bottom of this page shows the conversion factor for each grain.

Strictly speaking, not just corn but all grains are ranked according to their qualities, and the benchmark for this ranking is the U.S. Grain Standards, such as the U.S. Standards for Corn and the U.S. Standards for Wheat. These standards are set not only for grain but also for various other agricultural products.

Conversion factor

1 hectare = 2.4710 acres, 1 kilogram = 2.20462 pounds

Metric ton conversion	U.S. unit	Conversion factor
Wheat, soybeans	Bushel	0.027216
Rice	CWT（=100 pound）	0.045359
Corn, sorghum, rye	Bushel	0.025401
Barley	Bushel	0.021772
Oats	Bushel	0.014515
Sugar	Short ton	0.907185
Cotton	Bale（=480 pounds）	0.217720

U.S. corn is ranked in five grades from the No. 1 top quality corn through No. 5 lesser quality. There are also some grades（sample grades）that do not qualify to be in the ranking.

The U.S. corn imported to Japan has the No. 3 ranking and is called 3YC, and its volume weight is not 56 pounds but at least 52 pounds. Therefore, one bushel of 3YC is about 23.6 kg. An easier way is to remember that one bushel is 24-25 kg.

The ton is not easy to use as a unit of measure, because there are various tons such as the long ton (LT), short ton (ST) and metric ton (MT) that we usually encounter in our daily life. Nevertheless, we should be aware that

both metric tons and long tons are used in shipping grains.

The supply and demand balance of the U.S. corn is announced by the bushel, so you will be able to figure out the volume when you get used to the numbers, but it may be easier to convert bushels to metric tons if you are not too familiar with bushels.

Now I would like to show you an easy way to convert units that is used by businesspeople. If you divide 1 million bushels of corn by 40, then you get 25,000 long tons. Then multiply this number by 1.016, and you have 25,400 metric tons.

You now know that the magic number here is 40. If you divide a large number of bushels by 40, the number is shown as long tons, and this figure is almost the same as that shown by the metric ton. To get the exact number by the metric ton, you need to multiply this number by 1.016. If there are 12.4 billion bushels of corn, you should divide 124 by 40 and get 3.1, a little over 300 million tons. If one acre of farmland produces 150 bushels of corn, that is 3.75 tons of corn. One acre equals 0.405 hectares, so 3.75 is divided by 0.405, and that makes 9.26, which means one hectare of farmland produces 9.26 tons of corn. (You can get a rough number by dividing by 40, then multiplying by 2.5.) If you come upon a number indicated by the bushel, you can get an approximate number by dividing by 40 to get the number of tons, which is more familiar to us.

U.S. corn production and export

According to the most recent data announced by the USDA on October 12, 2011, the production of the U.S. corn in this season (2011-2012) amounted to 12.4 billion bushels, whereas the total demand was 12.7 billion bushels including 4.7 billion bushels for domestic livestock feed and 6.4 billion bushels for food, seed and industrial use such as 5 billion bushels for ethanol production. Another 1.6 billion bushels of corn were for export.

The largest part of U.S. corn demand is for domestic livestock feed, and exports have long been the second-biggest part of demand. Japan was the

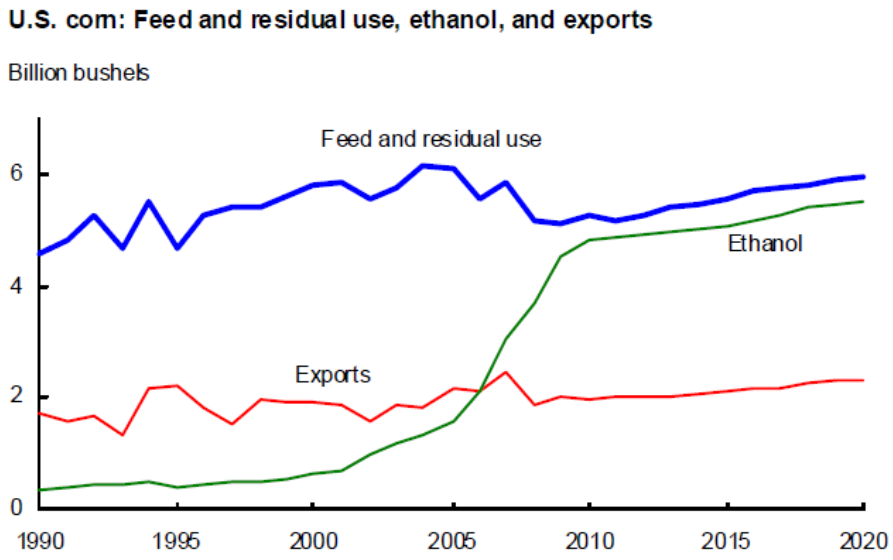
biggest corn importer from the U.S.

This situation has been changing lately due to the rapid growth of domestic demand for industrial use, which used to be rather small, especially for ethanol production. In light of this change, there is a need to lessen energy dependency on unstable oil-producing states in the Middle East, as well as a necessity to support farmers in the Midwest part of the U.S. Most urgently, the U.S. policy supports a global shift from dependence on fossil fuels to biofuel in response to environmental challenges.

In the midst of this trend, Japan has remained the biggest corn-trading partner of the U.S., but the export demand has been getting smaller in comparison with the rapidly growing domestic demand for corn. This is the key fact that we should be aware of. The upper chart on the next page shows the outlook for corn uses by 2020 published by the USDA in February 2011. It shows clearly how rapid the growth of demand for ethanol has been and how the trend is expected to continue for years to come, although at a slower pace.

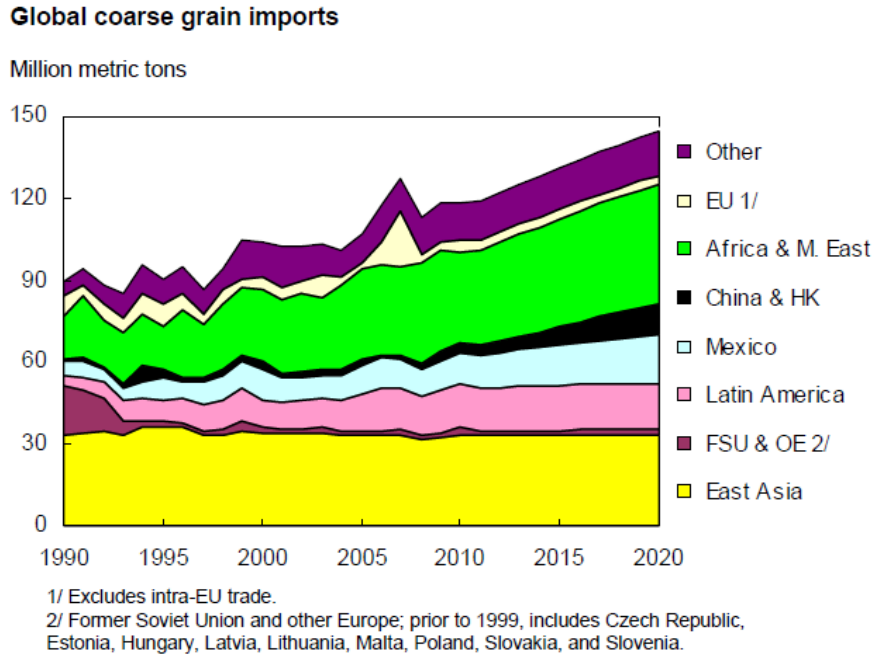
This is a serious matter for Japan, because we have been building up our livestock business while relying on the stable supply of the U.S. corn to feed the livestock. In other words, Japan and the U.S. have built a firm mechanism to consume the corn produced in the U.S. Midwest over the past half-century. This mechanism has become part of the status quo that we have simply taken for granted. Thanks to this current status quo, our livestock industry, beverage businesses and other industries are thriving. Perhaps the U.S.-Japan relationship built through the corn trade can be sustained continuously, but the increasing demand from new industries in the U.S. may also have a significant impact, and from a broader perspective, world population expansion as well as rising living standards all over the world will also be important factors.

Changes in U.S. corn usage



Source: The USDA data

The quantities of imported coarse grains in the world



Source: The USDA data

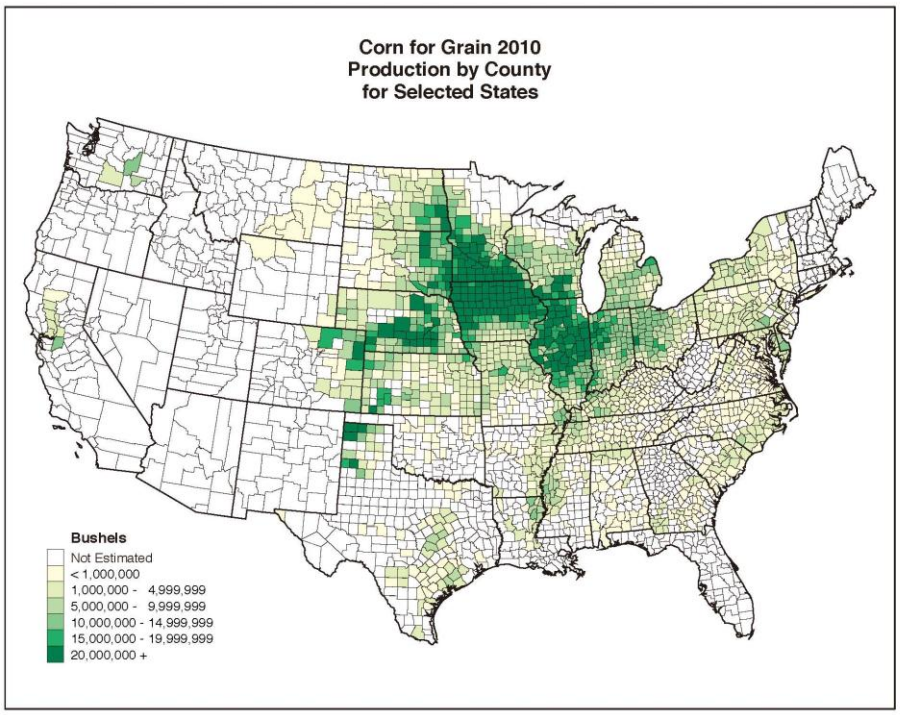
The lower chart described above was published at the same time as the upper chart, and it shows the world trend of imported coarse grains. The bottom part, indicating exports to East Asian countries including Japan, has not changed much, but the increasing demand is obvious in Africa, the Middle East and China. In 1990, the demand for coarse grains (mostly corn) from East Asian countries accounted for one-third, but by 2020, the ratio is predicted to have fallen to one-fourth. Now that such a big social-environmental shift has been predicted, we have an urgent need to build a new, stronger relationship than we have done over the past five decades. However, this cannot be achieved unilaterally; it requires bilateral efforts. It will require semi-permanent efforts from both sides, such as listening to the producers and addressing their concerns, in addition to listening to the consumers and responding to them.

The U.S. National Corn Growers Association

There are about 2.2 million farms in the U.S. Now let me explain about the National Corn Growers Association (NCGA) which is organized by the corn growers in the U.S.

This association is organized by the corn growers and was founded by Walt Goeppinger in 1957 in Iowa. The NCGA headquarters was moved to St. Louis, Missouri in 1984. Aside from the headquarters in St. Louis, there is now a Washington, D.C. office carrying out various activities including lobbying the government to reflect their agenda and directly influence the nation's agricultural policies.

U.S. Corn Production in 2010



Source: The USDA data

The Midwest Corn Belt is a well-known corn-producing area in the U.S., but corn is actually grown all over the country. The graphic above provided by the USDA shows the volume of corn production in each county in 2010.

This graphic shows clearly where the Corn Belt is. In the center of the map, the darkest area is Iowa, the biggest corn-producing state, and to the east of Iowa, just south of Lake Michigan, is another dark area which is Illinois.

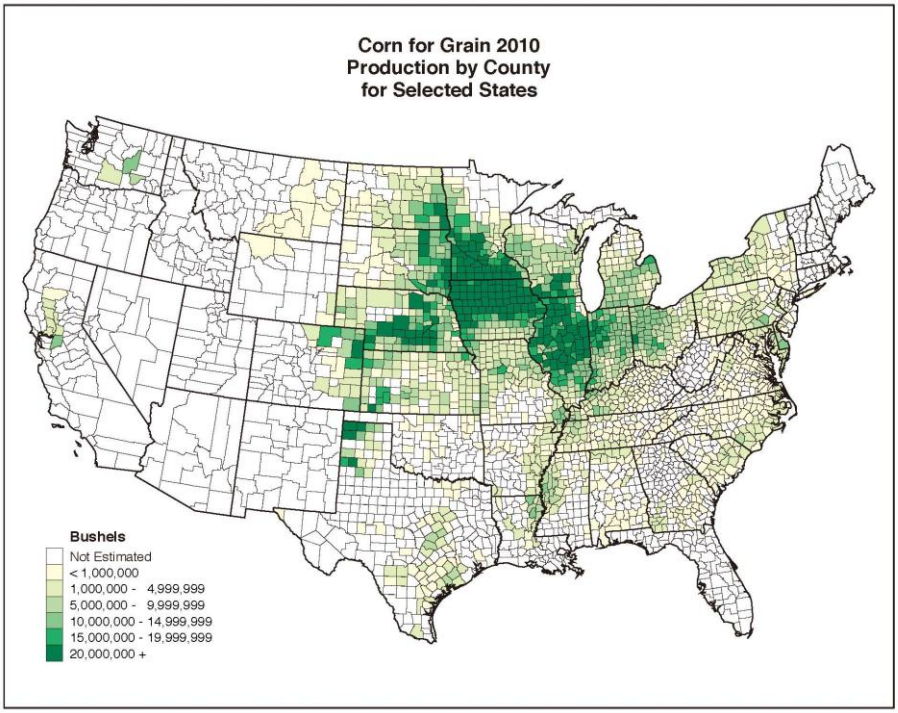
Imagine a line in the middle of the map from top to bottom. To the east of that line, nearly all the 25 states have NCGA branches, the only exceptions being the New England states, Florida, New Jersey, West Virginia and Delaware. In the states where there is no NCGA presence, individual corn growers can still become members of the NCGA. Today the membership totals over 35,000.

U.S. geographical characteristics for producing grains

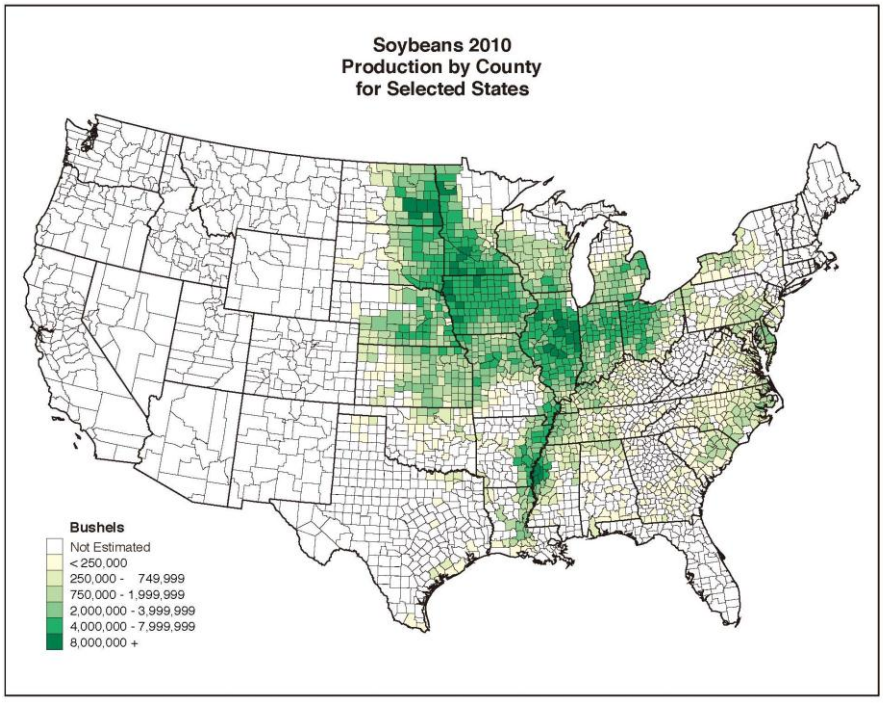
Let's take a look at where the U.S. grain is mostly produced. The charts below show corn at the top, soybeans in the middle and sorghum at the bottom, and you can see how widely grain is produced around the U.S. The charts on the page after next show spring wheat at the top, winter wheat in the middle and rice at the bottom. The areas of corn and soybean production overlap quite a lot but are separated from the wheat-producing areas.

That can be easily explained by the precipitation. Today, irrigation systems have been established, so rainfall doesn't matter as much as it used to. The appropriate annual amount of precipitation is 20-35 inches. Our imaginary center line, which divides the continent into two parts, also represents the geographical limit of 20 inches of annual precipitation. The east area of the line has more precipitation than that to the west.

U.S. Corn Production in 2010

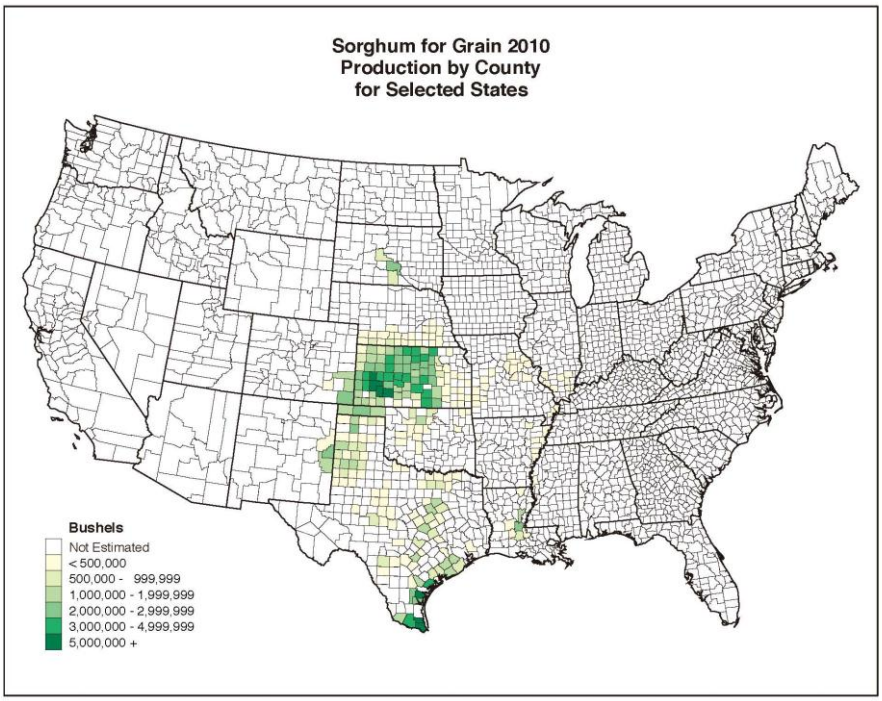


U.S. Soybean Production in 2010



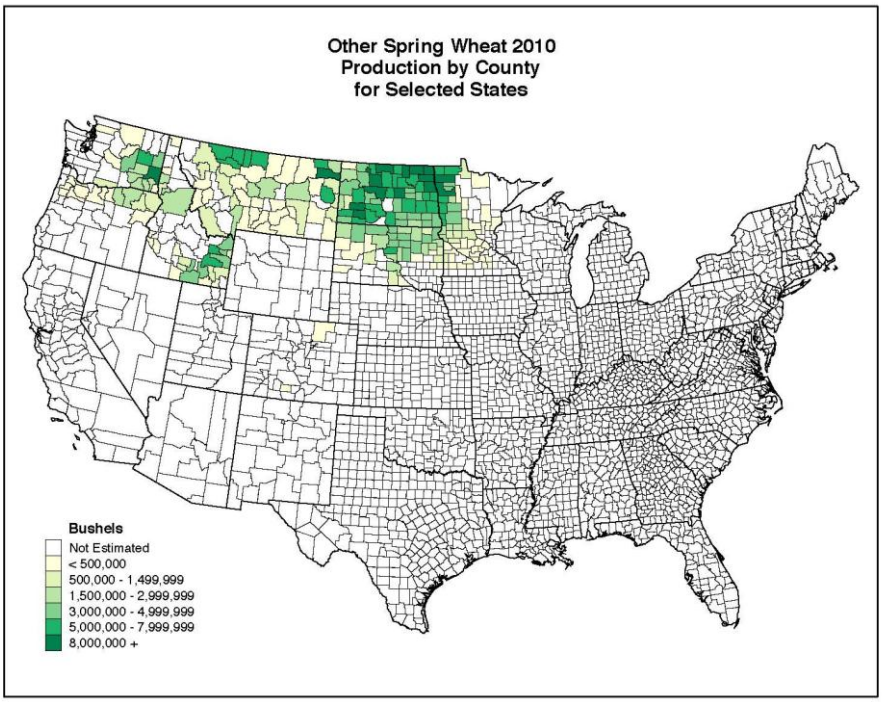
Source: The USDA data

U.S. Sorghum Production in 2010

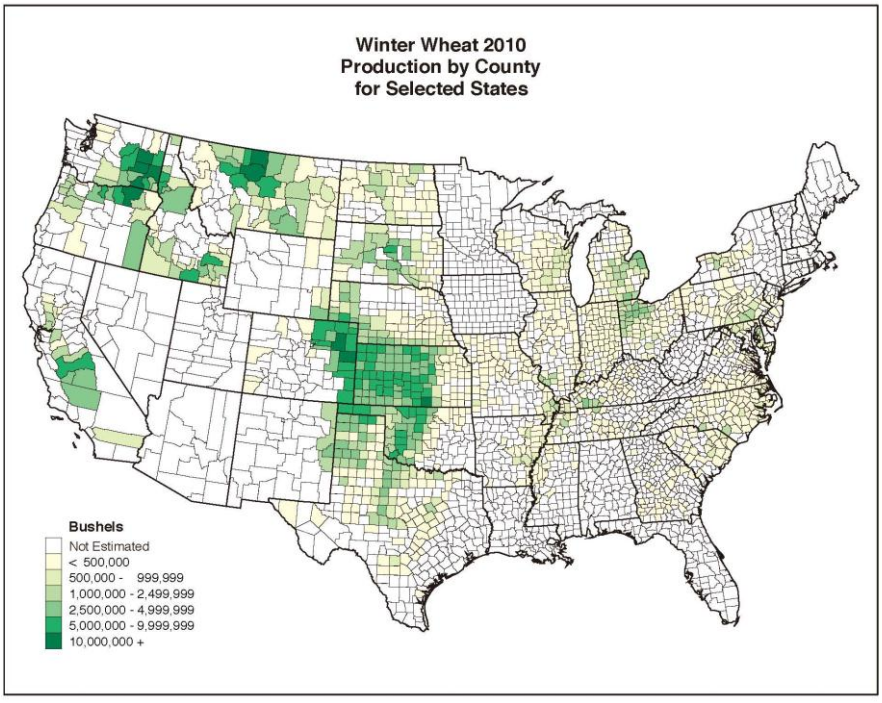


Source: The USDA data

U.S. Spring Wheat Production in 2010

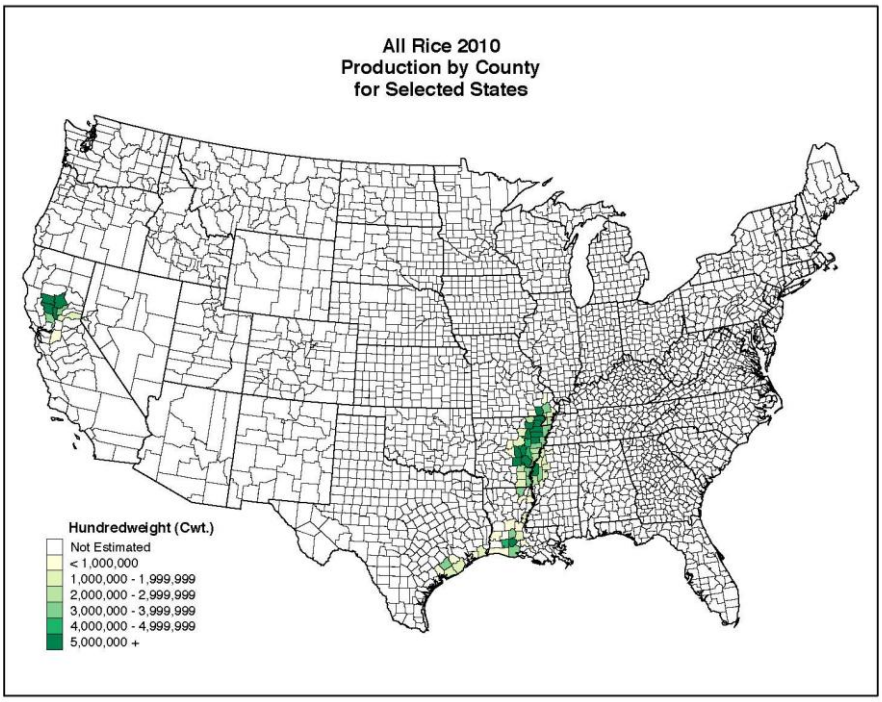


U.S. Winter Wheat Production in 2010



Source: The USDA data

U.S. Rice Production in 2010



Source: The USDA data

Wheat and sorghum can be grown in relatively dry conditions, so agricultural products have naturally spread to where the climate conditions, such as precipitation and temperature, are most suitable for them.

In the first half of this chapter, the topic was the U.S. grain production, but in the later half, we will take a look at the Japanese side, which has its own dynamism in response to the U.S. grain production.

Again, Japan's food self-sufficiency is under 40%

On August 11, 2011, Japan's MAFF announced that Japan's food efficiency was 39 percent, one point lower than in 2009 (2010 calorie base).[4] This is another record low, and the first time it dipped under 40 percent since it was

[4]Data on food sufficiency in 2010 publicized by MAFF in 2011, URL: http://www.maff.go.jp/j/press/kanbo/anpo/pdf/110811-01.pdf

39 percent in 2006. Japan's grain self-efficiency in general, including feed grains, is 27 percent, and that self-sufficiency in livestock feed is 25 percent. Aside from arguments about the legitimacy of food self-efficiency, it is most vital to maintain a balanced interdependency with other countries in order to maintain our living standards in the globalizing world, as I also mentioned in Chapter 1.

This is the most important food issue since Japan today depends on other countries for its vital foods such as wheat, livestock products, oil and fat. It is also a very important matter to maintain or even expand Japan's agricultural and livestock production, although we have argued about this for years now. But we must face the reality that Japan cannot maintain its food supply without importing agricultural and livestock products from around the world. Only if we face up today's reality with cool heads we will be able to come up with specific strategies that will lead us in the direction of future agricultural success.

The discussion is long overdue about whether we should eat domestically produced or foreign-origin food, if we hope for Japan to maintain its independence and prosperity in the future. We must set down a vision to establish a fundamental structure for food and agriculture in the future from a broader perspective, looking ahead several decades. Not only Japan is in such a predicament, but also Korea, another country that must import much of its food and livestock.

The MAFF announced its "Future Vision for Food" on December 21, 2010 to set the course that the Japanese government as a whole would take for implementing policies to infuse rural areas with vitality, as specified in the 10 Projects.[5] However, the focus of these projects is on domestic measures, and the only international issue is export promotion of agricultural and marine products.

Despite the fact that Japan's food self-sufficiency ratio dropped below 40 percent, the government did not mention anything specific in order to secure imports of foreign products at all. Only in Project 10, entitled "Securing

[5]Refer to http://www.maff.go.jp/j/study/syoku_vision/pdf/vision/pdf

General Food Security" is there this sentence: "Ongoing measures will be taken in 2010 to review the analysis and evaluation of various key factors including … international issues that could have a negative impact on the stable supply of food in Japan."

By the way, do you have any idea how grain imports to Japan have been carried out? This is quite an interesting subject for me as a university faculty member, because if I ask this question to students who have no idea about it, there can be a wide variety of answers. For example, students may suggest the imported products are carried in by airplane, or that they are shipped by several hundred thousand-ton vessels. Students' guesses about import quantities vary widely, often by two or three digits.

Maybe we should be worried about these facts, but I think we should instead take steady steps to deal with the reality.

How does the U.S. grain come to Japan?

First of all, let's think about who the importers are. Naturally we may think they are trading companies, especially trading conglomerates, and that is correct. But are all the grain imports conducted solely by trading conglomerates? This question often troubles students. Someone with an interest in this area may refer to National Federation of Agricultural Co-operative Associations (Zen-Noh), my former company, but those who are not familiar with the agricultural cooperative system may have a hard time to picture how it works.

The ratio of Japan market share in formula feed could indicate the answer. Two-thirds of imported feed grains are purchased by trading conglomerates, and the remaining third by Zen-Noh. Competition and sometimes cooperation between companies, or between a company and Zen-Noh, takes place all the time.

In Japan, it has long been essential to import a certain quantity of feed grains, so every player at every level acts in their own interests. Other than trading conglomerates and Zen-Noh, other firms take a direct role in grain

imports, including food trading companies, Japan subsidiaries of agribusiness giants, individual private companies as well as manufacturers that actually need the grains as raw materials.

In recent years, some trading conglomerates have acted proactively by acquiring farmland abroad and investing in local facilities to export grain. Such proactive tactics are worthy of attention considering the current trend where farmland acquisition is getting more attention as a way of securing a stable food supply both now and in the future.

On the other hand, it may not be well-known that Zen-Noh, which is commonly thought of as a Japanese domestic agricultural cooperative organization, has built its own grain transport system, which we call the grain pipeline, right in the middle of the world's most important grain region, the U.S. Midwest Corn Belt, with the Mississippi River down to New Orleans. I guess Zen-Noh has not made any particular effort to let people know about this fact.

Japanese consumers should know how strictly yet generously the U.S. has acted when the Japanese have tried to procure grain and import it from the U.S. I met hundreds of visitors from Japan when I was in the U.S. as a Zen-Noh resident official, and I found that most of them knew nothing about that and were quite surprised once they understood. I realized through my days in the U.S. that most Japanese remain unaware of the close relationship that Japan and the U.S. have built.

The grain pipeline has been solidly functioning as one of the invisible infrastructures that I mentioned in Chapter 1, and is also one of the main arteries supporting Japan's livestock industry. I have no intention to argue that every overseas strategy Japan has practiced so far was correct, but I believe there are at least some things we can learn from the history of ties between these two sovereign countries, how Japan has kept on importing grain from the U.S. and how the U.S. has responded to that.

It seems safe to say that Japanese trading conglomerates and agricultural cooperative organizations have done enough to meet the demand, in terms of

stable procurement of a supplying of feed grains over the past 30 years. But it is still uncertain how they will maintain their role in the next 30 years. I dare say that this is the biggest challenge that we must address, including all who are now engaged in this operation as well as those who are involved in importing feed grains.

I repeat that Japan's diet today has been supported by stable supplies of feed grains, and that no viable future strategy can be built without facing up to this reality. I hope that Japanese people will understand this.

Aging is an inevitable problem of Japanese agriculture

One important point I would like to mention about Japan's agriculture today is that the population of farmers is decreasing and aging fast.

The MAFF conducted its Census of Agriculture and Forestry in 2010, and on March 24, 2011 it announced the results as of February 1, 2010. According to the MAFF report, the population in commercial farm households was 2,606,000, which is a decrease of 747,000 (22.3%). Among these farming families, the number of core persons engaged mainly in farming was 2,051,000, which also represented a decrease of 189,000 (8.4%). Declining population not only affects the farming population, of course, but the overall Japanese demographic is aging throughout society.

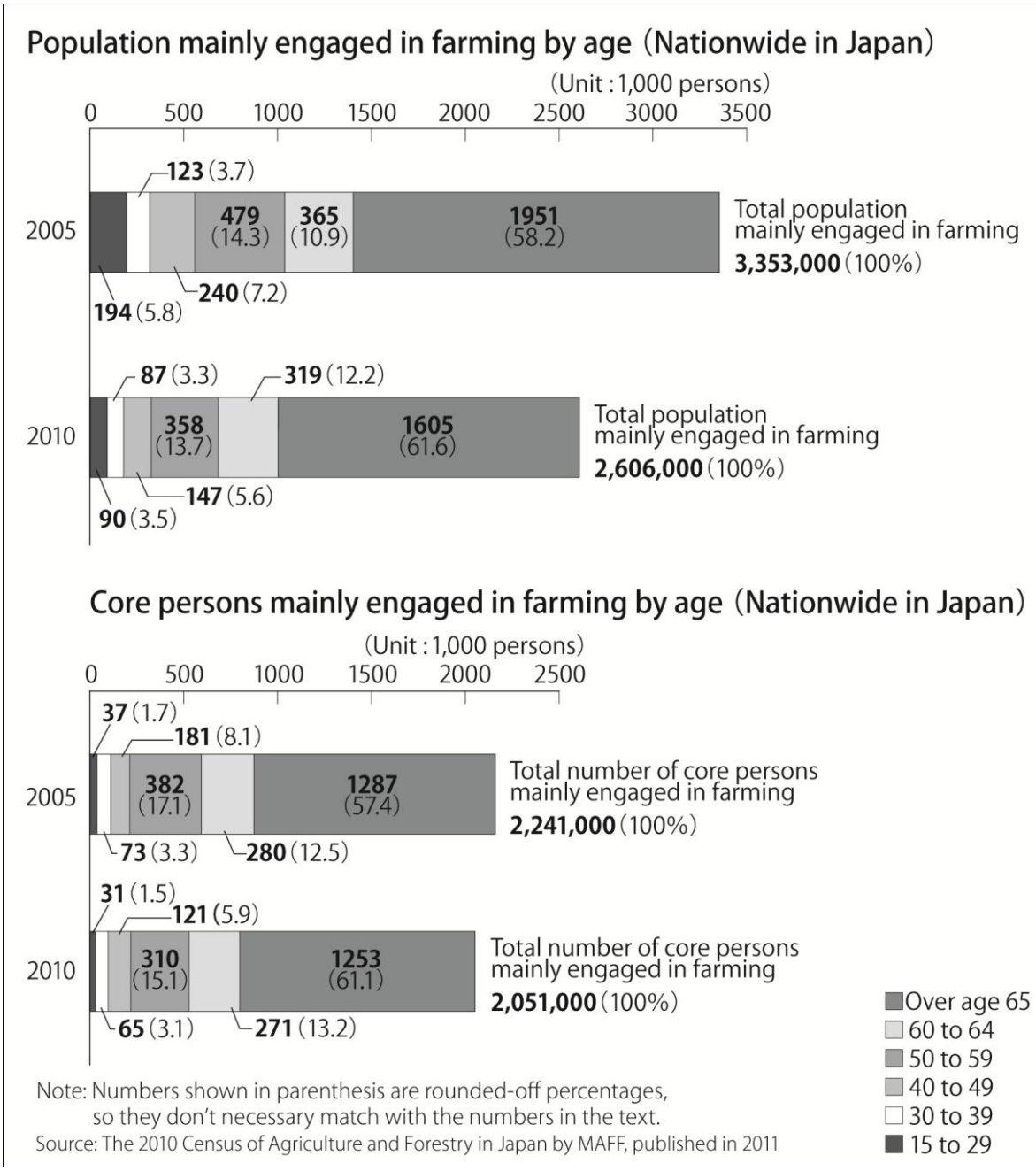
What is striking about the farm population in Japan is its age composition, with 61.6 percent of core farming persons older than 65. (See the chart below.) If you add the population of those of older than 60 in the same category, then another 271,000 (13.2%) would be included in this group, which means 74.3 percent of core farmers.

If you compare these figures with those in 2005, it is obvious that the demographic has been steadily aging, and the group of age 30-50, the premium workforce declined greatly from 254,000 (11.4%) in 2005 to 186,000 (9.0%) in 2010.

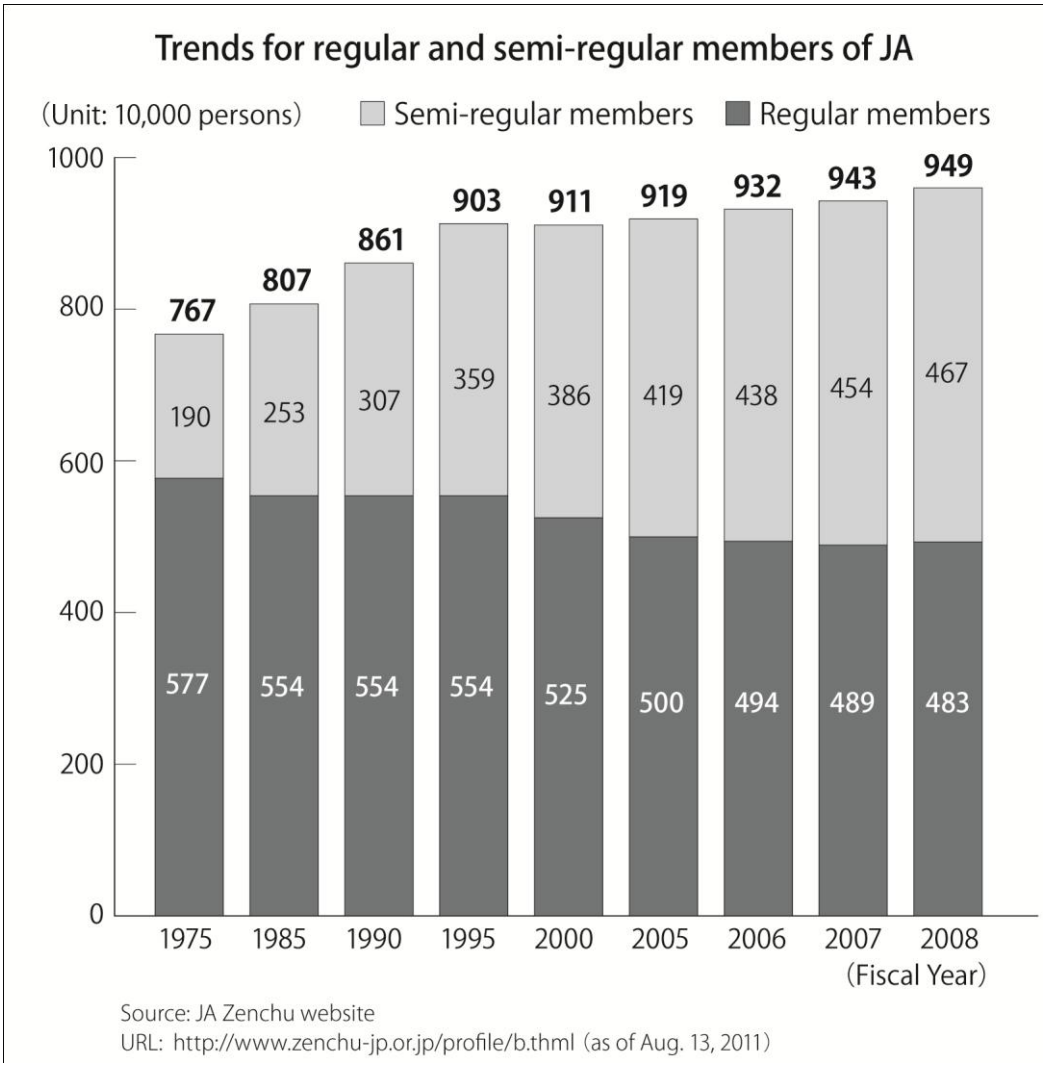
As a result, the average age of those mainly engaged in farming in 2005 was

63.2 years old, and this increased to 65.8 years old in 2010. Now, most of those who mainly engage in farming are older than retired salary workers. This is a very serious fact indeed.

Bar chart of farm population



Change in membership of JA



Source: JA Zenchu website
URL: http://www.zenchu-jp.or.jp/profile/b.thml (as of Aug. 13, 2011)

The number of farmers to drop to just one-third in 10 years!

This situation will certainly affect Japan's farming a great deal in the future. Let us take a look at how severe Japan's agriculture has been affected in the mid to long-term and the ways that Zen-Noh and the Japan Agriculture Cooperatives (JA) have been managing this situation.

The components of JA's membership are greatly changing. (See chart above.) Most members had regular status before, but now the number of semi-regular members account for nearly 50 percent. These semi-regular members are not engaged in farming but instead use JA as consumers. From now on, agricultural and rural communities including JA organizations will surely need to reorganize their business model to adapt to the aging society as a whole in Japan. I actually heard one JA executive say, "We have to make our business plans based on the perspective in which the number of regular members will be just one-third of the current figure in 10 years." The situation is so dire that this executive could not help expressing that.

However, not only those engaged in farming, but JA itself, like many other groups, must employ management strategies suitable to local conditions in order to survive.

Local administrative bodies, consumers, trading companies, the private sector and NPOs need to cooperate in ways previously unknown, and such new ways should be applied not only to save individual organizations, but also the entire region. Whether this is possible will determine the future strategies of Japan's food and agriculture.

The formula feed industry, its birth and growth in Japan

It is one thing to understand the necessity of importing grains for feeding livestock, but it is completely different to import them in large quantities and process them, because this activity needs an extended social system. The imported grains need to be crushed and mixed properly from the standpoint of feed science and livestock nutrition, and then the feed must be given to the livestock most appropriately, depending on animal types and their stage of

growth. Therefore, this process requires special machinery that can process huge amounts of grain and mix them thoroughly and evenly, as well as engineering knowledge to run the machinery without causing trouble. Then there also needs to be a system to supply the feed to livestock farms.

And then, in each phase of the process – such as raw material procurement, material stock, processing, product stock and product delivery – there needs to be quality control, order taking and delivery. With this integrated mechanism for feed production and supply, the purchasing and mixing of grains can be done not by individual farms but by the feed grain industry, now called the formula feed industry.

The formula feed industry in Japan was born some 60 years ago. The Public Corporation of Formula Feed was disbanded in 1950 and turned to the free market, after which the industry really took root in Japan. While the post-war free market progressed, the Feed Supply-and-Demand Stabilization Act was enacted in 1952, which saw the government take a role in purchasing, stocking and distributing imported feeds in order to promote livestock production and stabilize supply-and-demand of feed and its price.[6]

In 1953, the Law Concerning Safety Assurance and Quality Improvement of Feeds was enacted to contribute to public safety and stable production of livestock products by regulating the production of feed and feed additives, setting official specifications for feed and conducting tests of feed in conformity with the official specifications so as to assure safety and improved quality of feed.[7] The basic structure of the formula feed industry regulation launched in these years has paved the way for the present industry.

The government introduced policies one after the other in the early 1950s including the First Five Year Plan of Livestock Industry Promotion in 1947, the Ten Year Plan for Livestock Industry Promotion in 1952, the Five Year Plan for the Increase of Food Production in 1953 and then the Act Concerning Dairy and Beef Cattle Production Promotion in 1954. The backdrop of these laws was certainly a major national goal for reviving the

[6]The Feed Demand-and-Supply Stabilization Act, Article 1
[7]The Law Concerning Safety Assurance and Quality Improvement of Feeds, Article 1

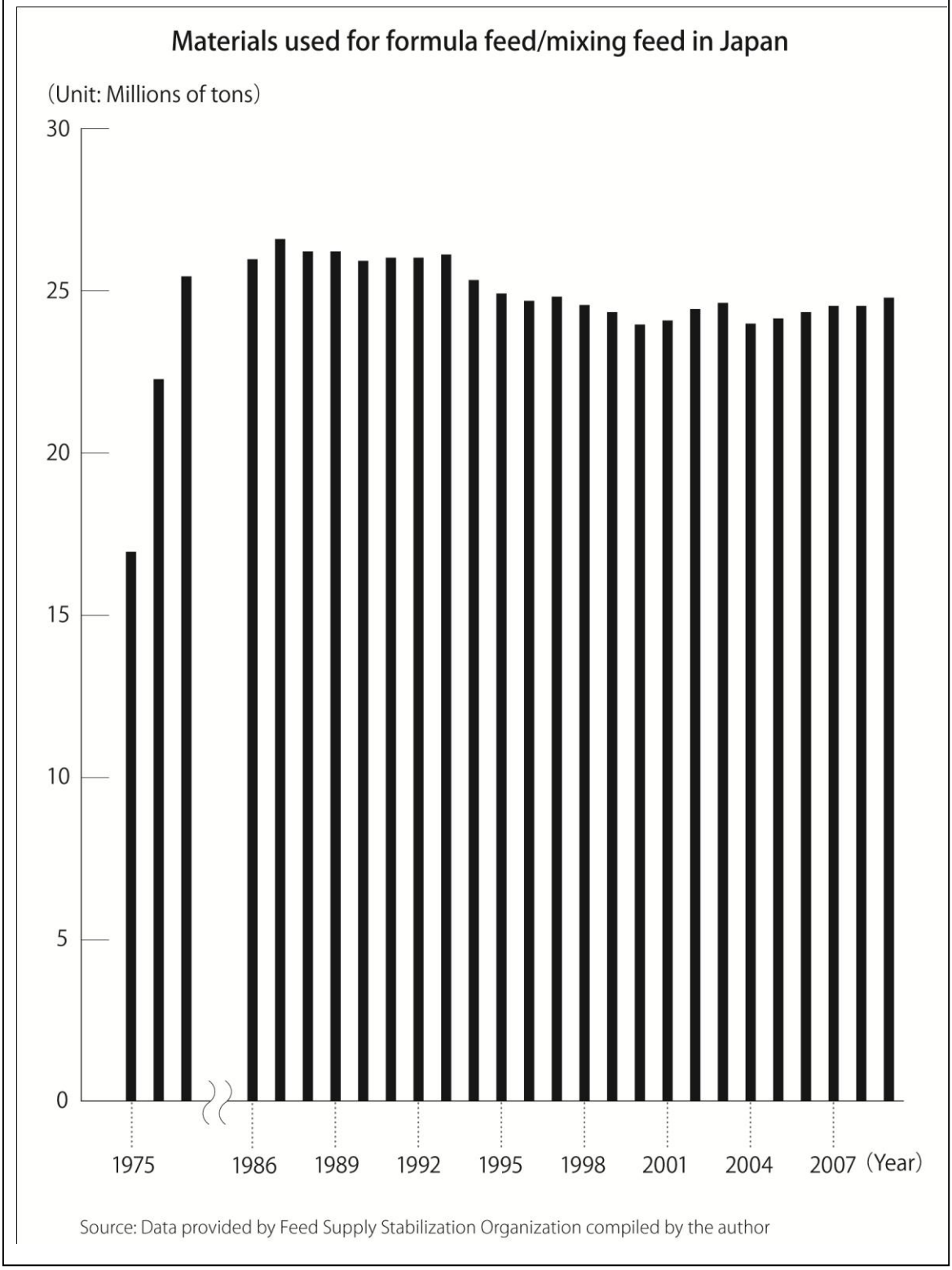
country's livestock production, which was devastated by World War II, in order to secure the food supply for the population.

It was under these circumstances that in 1950 the National Purchasing Federation of Agricultural Co-operative Associations (Zen-Koren, forerunner of Zen-Noh) started distribution of domestically produced feeds through the department of organic fertilizers[8]. The demand for feed at that time was growing so rapidly that a new section for dealing with feeds was launched in just five years. Then in 1957 an independent department was established just for feed.

The quantity of formula feeds produced annually also increased greatly. At Zen-Koren's own plants as well as allied factories, production was 13,000 tons in 1952, but 66,000 tons in 1955, when the new feed-distribution section was established. Then production hit an amazing 224,000 tons in 1957, the year that the new feed department was launched. In 1961, it even expanded further to 1,025,000 tons, finally surpassing the million-ton mark[9].

[8]Zen-Noh Grains Corp. History of 20 years
[9]Zen-Noh Grains Corp. History of 20 years

Chart of Change in Japan's formula and mixing feed materials



While all this feed demand was growing, the Hog Lift event mentioned in the previous chapter took place. After this, Japan's feed industry grew fast, and in the middle of the 1970s, Japan's total production reached 18 million tons per year. It exceeded 20 million tons in the 1980s and peaked at a little over 26 million tons from the late 1980s through the early 1990s. It has generally maintained a level of 24-25 million tons since then. (See the chart above.)

The biggest drive for this growth in feed demand was the change in Japanese diets that resulted from higher living standards, specifically the increased meat consumption along with consumption of a wider variety of food. Back then, Japan was in desperate need to foster its livestock industry and function in order to respond the ever increasing demand for meat. It seemed inevitable to depend on imported feed to fulfill the rapidly increasing demand even though that firmly set a course for Japan to depend heavily on imported feeds.

Back then the percentage of imported concentrated feed in Japan increased year by year. In 1955, imports were only 9.9 percent of the total, but imports accounted for 30.7 percent in 1960, 53.7 percent in 1965 and then 66.3 percent in 1970[10].

During the decade of rapid economic growth from 1960 to 1970, the basis of livestock production had been established, I believe, with livestock industry relying on imported feed.

From the first stage of Japan's feed industry to the time of rapid economic growth, I think most companies in the feed business mainly used a strategy corresponding to demand. The feed industry, just like other industries in the time of rapidly expanding market size, had to focus on procuring the necessary quantities of feed grains and building plants for mixing grains to produce formula feeds as effectively as possible. Such corporate measures had become their business strategy, to respond to the fast growing demand itself, and this trend has not changed much over the course of time.

However, as the importance of securing the feed grain supply has been

[10]Zen-Noh Grains Corp. History of 20 years

growing, a number of actual business issues have emerged. It is fair to say that Japan has built a base to support its livestock industry by responding to each issue on a case-by-case basis. Let's take a look at these in the next chapter.

Chapter 4

The U.S.-Japan partnership in grains over half a century

From the boom in grain demand to biotech food

Increasing demand for grain and meat

Japanese trading companies have been doing their best to respond to the ever increasing grain demand in Japan. As Japanese living standards have been rising, so has the demand for meat. Corporate Japan has been making every effort not only to secure procurement, but also to promote the domestic livestock industry. This was outlined in chapter 3.

There are many episodes of the U.S.-Japan partnership to tell along the way as Japan's demand increased for grain and meat. I myself took part in this development as a member of Zen-Noh, so I would like to look back over the history of the U.S. and Japan's business partnership, including my own experiences.

In this chapter, I have used a few technical terms from the trading business, but I have written this book so it is not too difficult for readers to follow.

Risk control for a stable supply of feed grain

Everyone knows that there are some risks that cannot be prevented even with the best prepared prevention measures, not only in grain trading but also in every area of trade in the world. In the case of agricultural produce, the typical risks come from the climate.

What matters is how to sort out calculated risks that can be anticipated and to deal with them through preparatory measures. We must distinguish predictable risks from those that are totally unpredictable. In actual business negotiations, the most crucial point is to agree on whom, whether a seller or a buyer, will carry the responsibility for such unpredictable risks.

Risks are inevitable when importing agricultural produce from foreign countries, so it is very important for buyers to agree on the contract terms specifying who will take responsibility for the risks, not leaving the matter to the sellers. It is very important for buyers to manage their risks by taking control of the arrangements in a deal that would otherwise be controlled by the seller. This makes the negotiation favorable to the buyer, although this is an eternal issue for Japan in negotiating with foreign trade partners.

However, when importing grains, management of uncontrollable risk is necessary, not only because the risks are easier to anticipate, but also because there are uncontrollable risks where buyers have no other choice than to accept the offered prices, due to the urgent need to secure raw materials for consumers back in Japan. That could be one reason why Japan is particularly sensitive about agricultural imports.

On the one hand, a trader's basic stance for dealing with volatile commodities such as grains is to balance the risk on both ends of the supply chain, sharing the risk as much as possible between producers in the U.S. and end users in Japan. It may sound very cold-hearted, but that's the reality in the trading business.

Nonetheless, traders will seek profits as middlemen, but they never take on risk. Middlemen are always immune to the ups and downs of prices. The function of a middleman is to connect buyers and sellers, so whenever selling and buying are conducted, the middleman will be paid a service charge.

But whoever tries to manufacture formula feed and supply it themselves in Japan will inevitably be involved in grain trading and be pushed into a

position of taking on risk.[11] In addition, it is no longer their choice to buy grain in the global markets and resell it freely.

The reality is far from ideal because buyers, who directly need the commodity, can hardly take control of their risk, and because the established trading rules have quite a few flaws even though they have long been used as international standards.

Trading between co-ops and decentralization of grain centers

From the late 1950s through the 1960s, aside from regular international trading, co-ops such as agricultural cooperative organizations in various countries embarked on trading and became very active players. Japanese agricultural cooperatives were no exception in this trend and have been interacting with their counterparts around the world. The "Hog Lift" mentioned in chapter 2 played a certain role in the modernization of the Japanese livestock industry and caused a rapid increase in grain demand that brought about opportunities for Japan's co-ops to reach out to cooperative organizations in various grain producing countries and form alliances with them.

During this period, grain prices rose steeply due to increased demand in Japan as well as European countries, but grain production actually decreased due to abnormal weather in the main producing areas. The higher prices of imported grain meant expensive formula feed in Japan, and Zen-Noh and trading conglomerates, Japan's feed manufacturers and grain importers, had to desperately gear up to procure imported grains, the main materials of formula feed.

From the international perspective of grain demand, this was finally the time for Japan's livestock and formula feed industries to embark on international grain trading as full-fledged trading players. Until then, they could have accessed the accumulated surplus of the U.S. grain, as they had since the end of World War II.

[11]Zen-Noh is a hedger, not a speculator, in the futures market.

Various measures had been taken to facilitate grain imports, such as assigning multiple producers, developing alternative sources of grain, directly purchasing from producers via trading among co-ops, if annual or long-term contracts could suit the conditions of the parties involved.

As for assigning multiple producers, they sought not just the agricultural cooperative associations for grain marketers in the U.S., but also producers in other countries. It is surely easy to buy commodities from one source, but there has always been a risk of disruption of procurement in case of an unexpected contingency.

Also, it is not easy to take swift action if you have a sole trading partner, when a better deal is offered from another trader or producer. It is safest to purchase grain directly from producers or organizations of producers. To achieve that goal, buyers must make a significant effort to find trustworthy producers.

As a consequence, Zen-Noh, for example, made a long-term agreement with the agricultural cooperative association for grain marketers mainly located in Texas, as well as with similar organizations in the Mid-West. Other than in the U.S., Zen-Noh has also been trading with agricultural co-ops in Thailand and has launched trading agreements with agricultural co-ops and joint market organizations of producers in Argentina[12] and Australia[13], not only for corn but also sorghum and oats.

The trading conglomerates, for their part, have accumulated know-how about agricultural produce trading during their very long career of international trading in a very wide range of other commodities. Such actions both from Zen-Noh and trading companies contributed to diversify their source of grain.

[12]Association de Cooperatives Argentina (ACA) and Federcion Argentina de Cooperativas Argentinas (FACA). Currently only the ACA, however.
[13]Australian trade partners include the Queensland Grain Growers Association (QGGA), Victorian Oat Growers Pool and Marketing Co., Ltd. (VOP) and the Grain Pool of Western Australia (GPWA).

From CIF to FOB

From the 1960s through 1970s, the common method for grain trading was mediated by trading conglomerates, and imported grain was delivered to Japanese buyers at Japanese ports. This trading method was conducted by "franco terms." Even when using the less common trading method of "loco terms," in which the commodity is delivered just to the shipping port, the price included not only the grain cost, but also insurance and freight (CIF). During this period, however, grain trading started to shift to loco terms with the free on board system (FOB). This shipping method specifies that ownership of goods passes to the buyer when the goods are loaded on the ship, even though the ship is hired by the buyer at the shipping port.

Simply put, the difference between CIF and FOB is that when using CIF, every expense including the cost for goods, insurance and freight is covered by the seller, whereas a buyer takes care of insurance and freight in the case of FOB.

Actually the shift from CIF to FOB means a lot in terms of risk control. These two contract terms are explained in the trading business textbooks as making a great difference in the rights and duties for sellers and buyers in their business operations.

What does it mean specifically? There are many uncertain factors in importing feed grains from foreign countries. First of all, there is a question of who will be responsible for risks such as bad weather in producing countries that are far away from Japan, or the growth of grain, transport to shipping ports, loading at the shipping ports, ocean transport and possible risks in the entire process including payment, as well as how much responsibility should be carried by whom. In addition to these risks, agricultural and trading policies of both exporting and importing countries cannot be overlooked.

Given all these uncertain risks, in order to supply necessary feed to livestock farmers, it is vital to minimize such risks that may happen before the imported feed grain arrives at the ports and the end-users in Japan. Perhaps

the easiest way is to purchase the grain from grain carriers that have just arrived in harbor in Japan.

Today, this method is common not just for grains but also for many different commodities. Trading companies transport goods from around the world and deliver them to buyers at the point where the carrier lands at port. This is the trading method by franco terms and is called ex-ship at port of arrival. The payment to be made by a buyer for this form of trade includes all the costs mentioned previously. In other words, it includes every risk that occurs on the way[14].

Franco terms and loco terms

Other than franco terms, there is also a trading method called loco terms. The CIF and FOB are conditions for loco terms. The total payment in a grain deal includes the cost of the grain, insurance premiums and the cost of transportation. In the case of CIF, a seller and buyer negotiate the price including all these factors, whereas in the case of FOB, a seller receives the cost of grain and a buyer has to arrange insurance and transportation at his own cost[15].

Suppose you buy 50,000 tons of corn at a certain price per ton in August. In the case of franco terms, the corn will be delivered in August, and that means the seller is required to deliver the corn between Aug. 1 and Aug. 31 to the buyer. On the other hand, in the case of loco terms with CIF, the loading of corn onto the carrier should be completed between Aug. 1 and Aug. 31 at the shipping port.

If a buyer made a contract to buy grain that will be shipped in August, the loading will be completed within August. Therefore, a buyer must adjust the

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[14]Strictly speaking, in the contract of franco terms, there are ex ship terms and landed terms.

[15]The regulations for CIF and FOB are, “Rules for C.I.F. Contracts-Warsaw-Oxford Rules, 1932,” “Revised American Foreign Trade Definitions, 1941,” “Intercoms 1953” and The Uniform Customs and Practice for Documentary Credits. But only a few important aspects about CIF and FOB are explained in this book.

stock of grain in Japan in accordance with the calculated delivery date, based on the transportation period from the shipping port to the landing port in Japan. It takes 30-35 days on average from New Orleans, the major grain shipping port in the U.S., to Japan or about two weeks from the U.S. west coast to Japan.

There is a problem in the case of a CIF contract. If a buyer needs 50,000 tons monthly and if the shipment is sure to be loaded on the first day of the month every time, then a buyer only needs to consider the transportation period. But a seller bound by CIF terms only needs to complete loading the shipment within an agreed period of time, which is between Aug. 1 and Aug. 31. And the seller is not obligated to consider the buyer's grains stock at all.

Suppose a buyer buys two shipments of 50,000 tons with a contract that states one of the shipments will be loaded in August and the other in September. In this case, there is a possibility that loading of the first shipment will be completed on Aug. 1 and the second on Sept. 30. Alternatively, the first might even be loaded on Aug. 31 and the second on Sept. 1. In addition, the seller is not obligated to inform the buyer of the detailed information about the shipment until the loading is accomplished.

The buyer will be informed of the progress now and then, especially about the estimated time for loading to be completed, but the seller's duty is just to complete loading of the shipment by the agreed time. This is the basis of the CIF contract terms.

European countries as well as the U.S. are said to be contract societies, and the business world in particular functions strictly through complying with contracts. Since ships were always the main carriers many years ago when airplanes were not available, various rules have become long established for the international transportation by ship. The rules for grain transport are no exception.

Given that the storage fee is 300 yen per ton of goods for 10 days, the buyer has to pay 15 million yen extra if the 50,000 tons of goods arrive 10 days earlier than expected, or even 30 million yen extra when the goods arrive 20

days early.

In the case where a seller possesses multiple ships, he can use the ship that is most convenient for loading by the end of the month in the most financially efficient manner. The date of shipment loading, whether Aug. 1 or Aug. 31, will only be subject to market conditions. Buyers, for their part, will be constantly worried about the date of loading every month. When I was a neophyte buyer in the grain trade business, I was continually troubled by the terms of CIF contracts.

Therefore, the conditions of the contract not only affect stock management, but they also greatly affect the procurement costs. If a buyer ends up paying large additional costs for the grain purchased at a low price, the end-user livestock farmers will still have to pay a lot for the product.

From FOB to building grain elevators for exports

In the previous section, I explained about the shift from CIF to FOB in trading contracts. However, the shift to FOB posed a new challenge for grain traders of how to handle further risks. Under an FOB contract, a buyer has to make a charter party with a ship owner or a maritime company to deploy a ship to transport the grain.

A typical contract for shipping grains produced in the U.S. stipulates the detailed duties of the cargo's owner (buyer) under the FOB terms. It states that a cargo's owner has to arrange a carrier at a port designated by the seller by a fixed date. Please remember the example of a CIF contract for August loading. Under CIF terms, a seller is bound to complete loading the vessel between Aug. 1 and Aug. 31.

Meanwhile, under FOB terms, the owner of the cargo (buyer) is bound to arrange the carrier at a designated port some time between Aug. 1 and Aug. 31, and the seller must get the commodity ready by the time the ship is ready at the port. A seller of grains is given a choice of which grain elevator to use for loading a shipment, and that is stated in the contract, which is one aspect of long established grain trading tradition.

Grain elevator in Ohio.

A grain elevator may sound unfamiliar for Japanese, but it is a facility for loading grain onto a ship and depositing grain into a large storage facility called grain bin. A grain elevator has a function to store grain and manage storage conditions for grain, and such elevators have silos.

A grain elevator may be called something different depending on its location or function. Those in the places of production are called country elevators, and those at railroad terminals are called terminal elevators. A river elevator is located along a river to load grain onto barges, and there are also export elevators for loading grain onto a ship for export to foreign countries. From the logistical point of view, the corn produced in the U.S. Mid-West travels from the producing areas to a country elevator, then to a river elevator, to an exporting elevator and onto a ship bound for Japan.

You may notice that there is a problem with the FOB terms, too, because a seller must arrange for a ship at port by the designated date, but there is no fixed date for the seller to complete loading the grain onto the ship, and there is no knowing when the ship will be able to set sail. This usually doesn't cause trouble, but in the case of a transport emergency due to bad weather conditions, for example, it could become a huge problem.

A ship waiting for a load of grain at the port will never be filled until the grain arrives at the port. If the Mississippi River gets frozen and causes barges to get stranded up-river, then the ship at the port has to wait for the barges to arrive.

Corn is gathered and stored in country elevators and then sent to river elevators on the Mississippi River, where it is loaded onto barges for transport to New Orleans, at the mouth of the Mississippi.

The capacity of export facilities may vary, so if a designated export elevator does not have enough capability for loading, then it would take longer to finish loading. This could be yet another risk.

The total payment is the focus of negotiations in the case of just receiving the commodity at the port in Japan. But in the case of receiving the commodity right at the port of export and using a chartered ship to carry it all the way to Japan, it is of course the buyer's duty to manage the risk.

The overseas production regions are foreign territories to the Japanese but home turf for the Americans. When we Japanese embark on international trade or go to the U.S. seeking business opportunities, we must deal with foreign rules that have been established by our foreign partners.

Japanese trading conglomerates and Zen-Noh have been accumulating experience purchasing grain from foreign producers and building an understanding of international rules and ways of negotiating with foreign business partners, and this has gradually cleared away the barriers. The

U.S., for its part, has respected Japan as its long-term trading partner and has abided by its contracts, so the U.S. and Japan have built a long-lasting relationship. This is what we should not forget, because a contract only works if two parties trust each other.

However, it is well known that the 1970s were a time of upheaval in grain trading. In 1972, the former Soviet Union bought a gigantic amount of grain from the U.S. Also, in 1973, President Nixon issued a ban on soybean exports and demanded restrictions on other grains due to a poor soybean harvest in the U.S. These measures taken by the U.S. shook up many Japanese and forced us to become aware of a potential crisis of food and feed grains. In the late 1970s, the former Soviet Union continued to import huge quantities of grain, and river transport was also disturbed when the Mississippi River froze. That caused large-scale backups of ships at the port of New Orleans, the major grain exporting port in the U.S.

Along with these disturbing mishaps, it was true that the quantity of grain exported to the Soviet Union and European countries simply exceeded the loading capabilities of the export facilities. In 1977, river transport was disturbed due to the frozen Mississippi River, and several explosions occurred at export grain elevators, which forced Continental Grain Co. to halt operations temporarily. The grain that was supposed to be handled by Continental Grain and Farmers Export Company (FEC) organized by local co-ops from 7 states such as Iowa and Illinois were sent to other already overloaded grain elevators. That slowed their loading and consequently made the backups even worse. At that time, Japan realized the need to seek a better way of securing a stable supply in order to avoid the future risk of transport jams. Zen-Noh, for its part, decided to build its own grain elevator after exploring the possibility of purchasing an existing one.

Agricultural recession in the 1980s drove agricultural co-ops out of distribution business

The U.S. export grains drew lots of attention around the world from the late 1970s through the early 1980s. This period coincided with the launch of the

Zen-Noh Grain Project[16] which saw Zen-Noh build its own grain elevator in the U.S. Through this project, Zen-Noh gradually acquired land for building its grain elevator at 163 miles upstream of the mouth of Mississippi River from 1979 through 1981. Zen-Noh visited the local administrative offices and agencies and exchanged opinions in order to gain approval and support from the local people as well as municipal bodies. After holding a number of public hearings, Zen-Noh was granted construction authorization and then held the ground-breaking ceremony in the fall of 1979 at the construction site, which is called the Rapidan Plantation[17].

Let us take a look at the grain situation in the U.S. throughout the 1980s. In January 1980, the U.S. stopped the export of grain to the Soviet Union in response to its invasion to Afghanistan. Grain prices soared, however, due to the searing heat wave that same year. These factors contributed to a new trend of talking about "food as a weapon." However, in the fall of 1980, grain prices suddenly dropped due to a stronger dollar versus other currencies, as well as high interest rates and the effects of the U.S. presidential election. In the midst of this price crash of agricultural produce, most of the local agricultural co-ops that Zen-Noh had relied on for grain suffered significant damage and ended up going bankrupt or quitting the grain distribution business, selling their stocks and facilities to such agribusiness giants as ADM or Cargil.

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[16]Zen-Noh Grain Project is one of the four major Zen-Noh projects including "Florida Phosphorite Development," "Market Milk and Dairy Business," and "LP-Gas Import Base Building Project."

[17]The site of the grain elevator was developed by French immigrants and called Rapidan Plantation that the former land owner wanted to keep, so the grain elevator has been called Rapidan Elevator.

Trading conglomerates eye the west coast route

Meanwhile, Japanese trading conglomerates actively embarked on international grain trading from the 1970s to the 1980s. Mitsui & Co., Ltd, a veteran in the field of grain trading, invested in export grain elevators, bought elevators in West Coast areas such as Tacoma, Washington and Vancouver in 1969, and has been engaged in exporting wheat.

In 1978, Mitsui bought facilities owned by Cook Industries Limited, one of the major agribusiness giants, after that company went bankrupt, launched the Gulf Coast Grain Co. and actively engaged in the grain business as a big Japanese grain dealer. But in 1984, Mitsui sold part of its facilities to Louis Dreyfus, another major agribusiness giant, and downsized its operations due to the agricultural recession of the 1980s.

Mitsubishi Corporation also bought an export elevator on the West Coast along with a terminal elevator in Kansas in 1975, and it built a grain gathering facility in Nebraska in 1979. Mitsubishi has been focused on the West Coast route and has been active in the region with its base in the Mid-West. Marubeni Corporation, for its part, bought a grain elevator that was once leased to Cook Industries and established Columbia Grain, Inc. in 1978. The company has also kept an eye on the West Coast route and has been active to date.

There are several reasons why major Japanese trading conglomerates invested in the West Coast route rather than in Louisiana on the Gulf of Mexico like Zen-Noh.

For one thing, Louisiana was the stronghold of the major agribusiness giants. Thus, entering that area meant all-out confrontation with them. Therefore, it was more realistic for Japanese trading companies as well as Japan as a whole to maintain good and long-term relationships with the major agribusiness firms as their clients, rather than challenging them directly.

Second, a different grain transportation route was emerging apart from the traditional Midwest-Mississippi River-New Orleans shipping route. The

special unit trains and the soaring prices of oil and ocean freight made the grain transport via a route from the Mid-West to the West Coast and from the West Coast to Japan relatively cheaper than before. Therefore, the total cost of grain transport from the Mid-West through the West Coast to Japan had become much more competitive and often cheaper than the conventional route.

Third and the biggest reason of all was that the demand for both food and feed grain had been increasing, not only from Japan but also from Taiwan, Korea, China and Southeast Asia, which made grain export from the West Coast expand rapidly.

Noticing these trends, Japanese trading conglomerates began approaching the West Coast route with the aim at establishing a base for trilateral trading, and this started drawing attention at that time. Due to the agricultural recession in the 1980s, however, such moves had to be cut back all of a sudden.

As previously mentioned, Japan's trading conglomerates and Zen-Noh had different perspectives and strategies toward the grain business in the U.S. The trading conglomerates put priority on establishing their bases on the West Coast in order to respond to the growing demand from Japan as well as other Asian countries and to avoid confrontation with the agribusiness giants that had long settled in the Mississippi River basin and Louisiana. Zen-Noh put top priority on a stable grain supply to Japanese livestock farmers and picked the best location for that.

Luckily, construction on the Zen-Noh grain elevator was completed, and that facility started grain export operations. The first shipment completed loading at the Zen-Noh Grain Elevator in October 1982. Once the grain elevator was built, the next step was, of course, to secure stable grain supplies with effective grain gathering measures. However, the agricultural recession in the 1980s had made grain gathering operations extremely difficult.

Further inland – acquisition of CGB and the grain pipeline

Due to the agricultural recession of the mid 1980s, local members of the agricultural co-ops federation had quit or downsized their operations in the U.S. Mid-West, and the agribusiness giants bought and took over their assets. As a result, Japanese grain traders had to buy grain from such big names, even though they had their own export elevators. In the midst of this major realignment of grain gathering organizations in the Mid-West, some independent companies, aside from the major agribusiness giants, could be alternative grain sources, but they were mostly located inland and didn't have their own export facilities.

In December 1987, one such independent firm, the Consolidated Grain & Barge Company (CGB) in St. Louis, contacted Zen-Noh and informed it of CGB's intention to sell their company. At the height of this consolidation trend, CGB also had to face up to incredibly difficult management conditions, but fortunately it managed to turn things around, and the company owner started to seek a way of selling the company while it was still afloat.

Teaming up with ITOCHU Corporation., Zen-Noh embarked on acquisition of CGB. There are many impressive episodes along the way of the acquisition of CGB, but let me introduce the most impressive one here. Under the U.S. contingency laws[18], the barges serving companies along the rivers within the U.S. territory must be the U.S. firms in principle. Since CGB was a barge company, the acquisition had to meet various conditions set forth for such an exceptional procedure.

The regulations for exceptional procedure included:

More than half of the members of the board and executive officers must be the U.S. citizens.
More than 90 percent of employees must be the U.S. citizens.
The said company must belong to the U.S. manufacturing or mining

[18]41 stat. 999. Section 27 of the Merchant Marine Act, 1920: No merchandise shall be transported by water … between points in the United States … in any other vessel than a vessel built in and documented under the laws of the United States and owned by persons who are citizens of the United States.

industries.

The book value of the fleet must be less than 10 percent of the total assets of the said company.

More than 75 percent of the raw materials the said company uses or sells in their business must be bought or produced within the U.S.

Zen-Noh jacked up its existing Zen-Noh Grain firm to meet the above regulatory requirements and proceeded to the actual acquisition of CGB. This purchase was completed in 1988. But later, a fellow barge service company, Ingram Barge Company, filed a lawsuit against Zen-Noh Grain contesting its eligibility under the above regulations. The trials of this lawsuit concluded in 1989, since Zen-Noh Grain had sold its barge service department, which used to be one of the main pillars of CGB. Before this selling of the barge service department, CGB in 1986 had a transport capacity of 4.7 million tons of grain per year, and it possessed 17 country elevators, 13 river elevators, and 700 barges, with nearly 500 employees. By the mid 1990s, the total quantity of grain that the company handled had increased to 7.5 million tons. Now the number of distribution centers for grain and fertilizer increased to a little over 70 in the Midwest and along the Mississippi River, and the number of employees had increased to about 1,200.

Addressing biotech crop issues

In the U.S., commercial cultivation of biotech crops was officially launched in 1996. Cultivation of biotech soybeans, corn and cotton spread faster than other crops. But the U.S. had treated soybeans and corn a little differently from the standpoint of securing the crops that Japan particularly required.

In Japan, soybeans are regarded as crops for extracting oil as well as an important ingredient for fermented soybean paste (miso), soy sauce (shoyu) and soybean curd (tofu). In Japan, corn is mainly used for manufacturing livestock feed as well as industrial material, and the percentage of corn used as food ingredients is very small. For quite a long time, Japan has imported approximately 16 million tons of corn every year, of which 12 million tons goes for feed. The remainder of 4 million tons of corn is for other industrial

use, as mentioned in chapter 1.

Again, today Japan's livestock industry has been sustained only because it can import 1 million tons of corn every month. Japan imports more than 30 million tons of grains including wheat, rice, coarse grains and oil seed every year. Among these commodities, corn, soybeans and canola are likely to be biotech crops at present.

The total amount of imported biotech crops including corn, soybeans and canola in Japan amounts 17 million tons[19], and this figure is calculated based on the most recent data of imported quantities of these crops, along with the ratios of seeded acreage of biotech corn, soybeans and cotton in the producing areas.

In the U.S. in 2011, biotech corn made up 88 percent of the total crop. For soybeans, the figure was 94 percent, and 90 percent of cotton was biotech[20], so it is undeniable that most feed grains that Japan has imported from the U.S. are biotech crops. This is the reality that we have to face up to if we want to plan and execute viable measures for the future.

The U.S. government takes the position that biotech soybeans and corn are substantially equivalent to conventionally cultivated soybeans and corn. Thus, the U.S. regulations do not require biotech crops to be handled separately in grain trading. However, the wide use of biotech crops has caused various problems for importers. The outcry among Japanese consumer groups and co-ops demanding non-biotech crops has been surging.

[19]"Science Technologies and Society: Reviewing Biotech Crops as Materials," written by Seiji Mitsuishi, pp 24-32 in the monthly magazine "Gakujutsu no Doko," published by Japan Science Support Foundation in February 2011

[20]Source: USDA "Acreage," June 30, 2011, pp 25-26, http://usda.mannlib.cornell.edu/usda/current/Acre/Acre-06-30-2011.pdf

A huge biotech corn field. Harvested corn is transported to a country elevator.

The safety of biotech crops is approved both by the U.S. and the Japanese governments based on extended scientific analysis and strict examinations. But I think few Japanese consumers know this fact, let alone the quantity of corn imported and consumed in Japan. Now, let us take a look at the figures.

The total quantity of corn imported in 2010 was 16 million tons, and 14.4 million tons of corn (89%) was imported from the U.S. The remainder was from South America. The ratio of the biotech crop cultivation in the U.S. was 86 percent that year, so at least 12 million tons of imported corn was likely the biotech corn. Most of that was feed material, but some 4 million tons of corn was used for industrial products and as food ingredients. About 3 million tons of corns were used for manufacturing cornstarch, which is an ingredient of soft drinks, and half of that is believed to be from biotech corn, although it may vary depending on the way of calculating. After all, combined with corn for feed, we consume some 13 million tons of biotech corn in Japan every year. Again, it is important to understand that such biotech corn is in the market in Japan with the official sanction and safety checks by both the U.S. and Japanese governments.

One reason why it is difficult to tell from food labels whether biotech crops are used in a product is due to the complicated labeling method in Japan. It is regulated by the Japanese Agricultural Standards (JAS), whereby some processed food such as soybean curd (tofu) and fermented soybeans (natto) must have labels informing customers if biotech crops were used. It is mandatory because some protein produced during the making process of the biotech crops, is supposed to remain in those processed foods.

On the other hand, when biotech crops are used as an ingredient for soft drinks, vegetable oils and soy sauce, it is not mandatory for such products to be labeled as biotech. That is because the protein produced by the biotechnology in the plants is supposed to be dissolved or removed through the processes of enzymatic degradation, heating or refining.

As far as labeling is concerned, a consumer would not know if the pork that he or she bought was fed with biotech feed, or whether the soft drink, vegetable oil and soy sauce he or she bought were produced with biotech

crops as ingredients.

We often see tofu and natto with such labeling that reads, “This product is not made of biotech materials.” It is mandatory for foods made of biotech crops to state the fact on the label. But the common phrase “not made of biotech crops” on the labeling (this is voluntary, not mandatory) may give consumers the wrong impression that non-biotech ingredients are good while biotech ingredients are bad. This could mislead consumers.

Most consumers think biotech crops are not used in Japan

According to regulations, snacks such as corn chips made of biotech ingredients should have labels acknowledging the usage of biotech grain. It seems that many consumers are wrongly convinced that Japan doesn’t import biotech crops, so we don’t eat biotech crops. In addition, most Japanese consumers don’t understand that biotech crops have been proven safe, and consequently they may suspect that foods made of biotech crops are somewhat dangerous.

Whether it is a lack of correct information or due to our problematic labeling methods, it is important for importers and those in the food industry to address consumers’ need for clarity to alleviate uneasiness toward biotech crops.

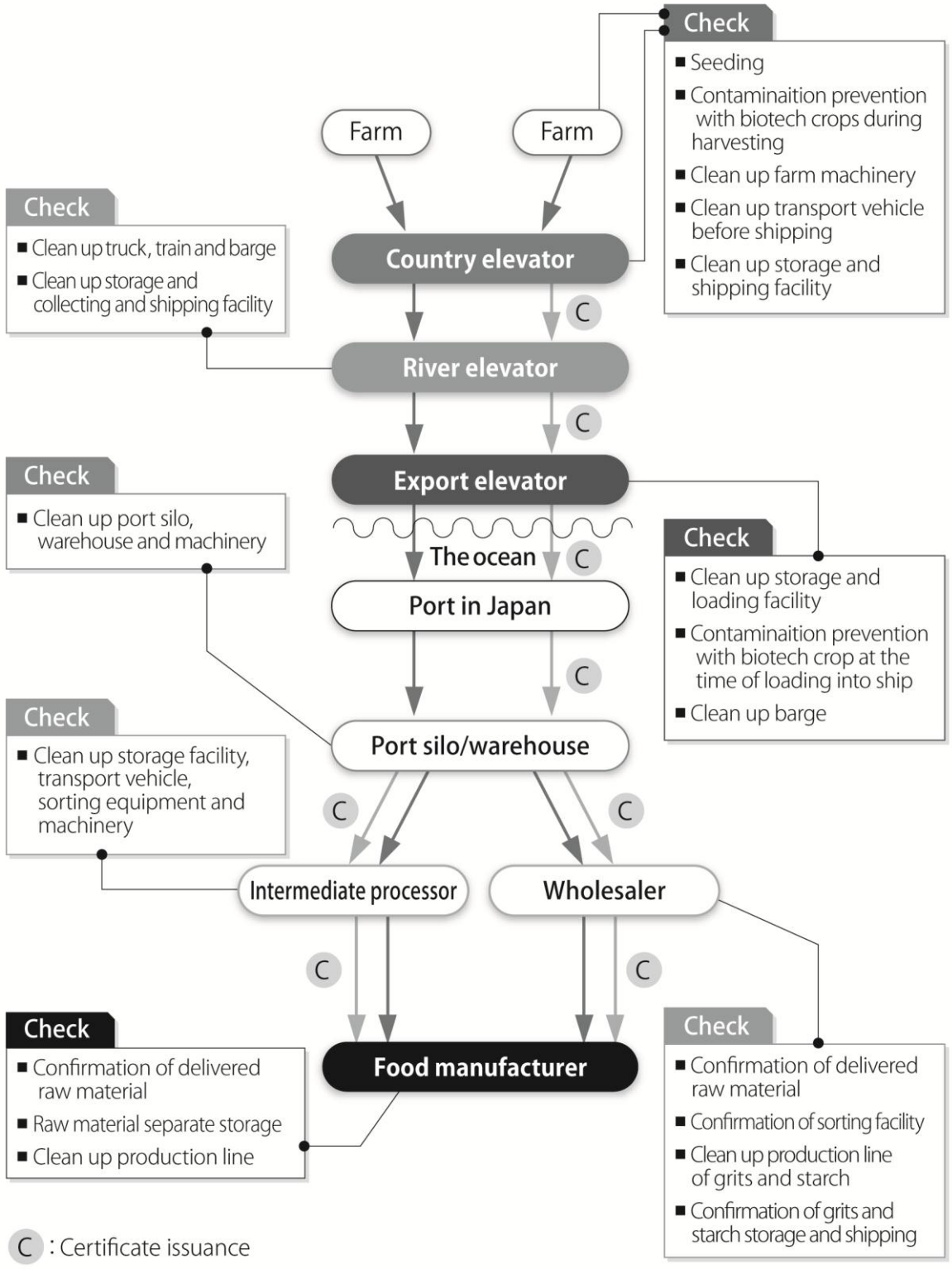
Labeling regulations for biotech crops and processed foods made from such crops **(See the accompanying sheet)**

It is true that there are livestock farmers who desire to feed their livestock with non-biotech corn feed, and there are consumers who desire to eat meat from such livestock fed with non-biotech feed. In order to meet such requests, Japanese companies have been making extra efforts through trial and error and have adopted for corn the Identity Preserved Handling (IP Handling) procedures that were once used only for soybeans intended for human consumption as well as for sorghum.

Dedication to deliver non-biotech crops to Japan

IP Handling procedures are common in the distribution of grain, but it gets inevitably more and more costly if the amount of grain increases more and more. In the case of corn, each procedure from production, storage, gathering and transport must be taken care of separately from ordinary biotech crops and with a certificate issued at each step in the procedure. It is costly, but it is an essential measure in order to fulfill the consumers' need for non-biotech crops. This is challenging, but manufacturers and distributors need to update the system constantly in order to respond to the latest market needs.

Identity Preserved Handling（IP Handling）at production and distribution stages



Source: MAFF Biotechnology Guidebook

Japanese trading conglomerates and Zen-Noh have both been following IP Handling procedures for non-biotech crops to respond to their customers' requests. In the case of trading grains, a number of different channels have developed for trading, but the distribution channels for each crop remain mostly the same.

It is common that in the course of trading, for example, the corn produced by farm A is sold to company B and from this company to company C, and from company C to company D, which finally sells the product to consumers. The commodity trade can be done just by exchanging documents between the parties involved, if the business procedure meets the grain trading standards in the U.S., and the actual trading can be practiced smoothly, which will allow new players to join the market and bring about more vitality and flexibility to the practice.

In the past 15 years, however, the regions cultivating biotech crops have rapidly expanded, and now 88 percent of the U.S. farmland grows biotech corn. Since Japan imports a huge quantity of corn, we need a new system that can complement the current trading style that simply requires documents stating the status of the corn based on the grain standard, in order to respond to users' need for non-biotech corn. In other words, we need complete traceability and control over the extended supply chain, from the corn producers in the Mid-West through the plants producing formula feed to the livestock farms. Everyone involved in the grain trading business, both in the U.S. and Japan, must work to establish a system to secure the traceability that is one of the basics for the appropriate supply chain management.

U.S. corn producers fulfill Japan's demand

The CGB acquisition by Zen-Noh coupled with Itochu Corp. is an example of an effective business model that has secured not only IP Handling procedures, but also their own distribution network. Now CGB has organized the Premium Grain Growers group with nearly 2,000 farmers in the Mid-West. Those participants are learning which rules to apply for growing, harvesting, storage and transport of crops, especially for growing non-biotech

crops, through study group sessions with the latest information. Thus, they are clearly aware of the destinations of their produce.

In Japan, the voluntarily labeling of non-biotech crops is allowed among agricultural produce that was processed with IP Handling procedures, whereas it is mandatory labeling of such as "Soybeans (without separation of genetically modified)" without an IP Handling certificate as being handled together with biotech crops. However, non-biotech crop labeling is allowed for the crops unless the contamination ratio exceeds 5 percent, because grains are transported in bulk carriers, and there is always a certain chance of contamination with left-over biotech crops during the transport process, even with thorough cleaning of the containers and vessels.

Grain transport is the typical case of bulk transportation, but IP Handling procedures are a special measure designed to be incorporated into the bulk transport system to fulfill individual requests. This system can only be realized by requesting individual crop producers to do what the individual end-user wants, and it takes enormous resources. It can be said that IP Handling procedures can be successfully dispersed because the U.S. farmers accept biotechnology and biotech crops very positively.

On the other hand, it is very doubtful in every stage of the food distribution system whether Japanese people accept biotech crops positively. There is a complex and nebulous system of labeling for biotech crops. For example, some products made of biotech ingredients are exempted from the explicit biotech labeling, and in another case, if the contamination by biotech crops is less than 5 percent and the contamination is not intended, then explicit biotech labeling is not mandatory. Such an easy-to-misunderstand labeling system needs to be addressed swiftly as we look into the future of Japan's food and agriculture industries.

Emergent Strategies

In closing this chapter, I would like to trace how Japan has dealt with grain trading from a strategic point of view, including different approaches and strategies.

When we make a business plan or a management strategy for our company, the length of the plan may vary from one year, three years or even to five years. In reality, a five-year plan may often get out of date in today's turbulent circumstances, and most companies consider that plans need flexibility to conform with reality. Nonetheless, it is very important to look ahead to the future. Zen-Noh, for example, has not changed its strategy for grain trading in principle for more than 30 years. It continues to secure a stable supply of formula feed for Japan, and Zen-Noh has established other strategies just to support this basic principle. In order to secure a stable supply of formula feed, Zen-Noh has to secure stable procurement of feed grains. For that, Zen-Noh has done everything it can, from grain trading under franco terms, under loco terms, by CIF, by FOB and then building its own export grain elevators and finally establishing its own gathering centers in inland areas of the U.S.

Still, Zen-Noh has gone the extra mile to fulfill users' requests that have been changing very widely as time goes by. Zen-Noh utilizes its infrastructure network as well as facilities to their full extent. That is easy to say but extremely difficult to do, as it took five to 10 years just to take one step forward. It is not a speedy progress, but it has surely been a steady one.

On the other hand, Japanese trading conglomerates are not specialized in the agriculture business, but they cover every possible field of business. Therefore, their responses have been more global, considering a future vision in both Asia and the world as a whole.

This is the allegory that I often use in my classes: "There is not just one way of mountain climbing or of enjoying mountains. It is not a matter of good or bad, whether climbing the mountain on foot, by car or even by a helicopter. It is one way to enjoy the mountain by reaching the summit, but it is also a pleasure to walk around the foot of the mountain." What matters here is to specify which goal we should reach.

It is clear that over the course of time both trading conglomerates and Zen-Noh have done whatever they needed to do in order to procure the grain

demanded and provide a stable supply of feed to livestock farmers. We need to understand the history of how Japanese trading conglomerates and Zen-Noh have built long-term relationships with the U.S. by employing the best ways that best served their purposes.

Next, I will focus on strategies and their types. Henry Mintzberg divided strategies into two types in his book "Strategy Safari[21]."

According to Mintzberg, one is a deliberate strategy intended to be realized to its fullest, and the other type is an emergent strategy that is not expressly intended, but actions taken spontaneously will converge over time into some sort of consistency or pattern.

The strategies I mentioned in this chapter were all basically the latter type, emergent strategies. I am not sure about individual corporate decision-making procedures, but I suppose most strategies made in Japanese companies are more or less the emergent type of strategy.

Looking back on my own experiences in making decisions, I think it was very important that collective opinions and actions naturally have converged into a form of action, not having one superior decision-maker in an organization to make all decisions. Neither the decisions for the acquisition of CGB, nor for dealing with IP Handling procedures were as sophisticated as the strategies that are likely offered by business consultants, but they worked fine, I think.

Mr. Mintzberg also mentioned in his book "Strategy Safari," that strategies … have to form as well as be formulated.

I understand his point that it is best to have both deliberate strategy and emergent strategy in a good balance when making decisions. When I was part of decision-making management, I often said, "No matter what you say or how profitable it may be, I cannot approve your plan because it is against my policy." I was sure I could express my opinions openly and squarely because I had my sound basic policy and considered my subordinates'

[21]Henry Mintzberg, "Strategy Safari," pp 12-13, published in 1999

judgments and decisions that were made shortsightedly just to seek short-term profits.

Over 30 years ago when I was a college student, I first came to know about the overseas investments by Zen-Noh, and I was very impressed by the fact that there were people with such a broad vision in the organization. I looked through my archive and checked an article in the Nihon Keizai Shimbun newspaper that read, "Zen-Noh Builds Storage Facility at U.S. Port to Beef up Procurement of Feed Grain," on April 4, 1979. It was a small article, but it shook me up immensely.

This is my little personal episode, but it is very interesting that just a random event I encountered in my college days could have such a huge impact on my life, and it made me directly involved in the very same business of importing grain for quite a long time.

In this chapter I mentioned the industrious efforts that Japan has been making over the past 30 years for grain procurement, especially in the 1970s and 1980s, as epoch-making periods. It is very difficult to anticipate the future now, but I would like to review individual topics based on what should be done in the coming 30 years.

Chapter 5

Global Population Explosion and the Scramble over Food

Problems caused by an advanced and sophisticated food system

Those over age 40 may remember a saying to the effect that “Japanese think water and safety are given out free of charge.” Information might also be included, as a third free thing. But the world situation has changed today, and the business environment has changed more than anything else. The circumstances surrounding food have also changed, including agriculture and the food distribution industry.

This shift can be expressed with just one phrase: Vertical integration. The mechanisms for production and procurement of raw materials, as well as manufacturing and distribution, while dealing with official and informal affiliates, have all become vertically integrated. From the consumer's point of view, this shift has made people suddenly aware of the safety and security of their food supply. The food system is the social system, whether we speak of livestock products or processed food, and it includes everything that supports our daily diet, from production to consumption. The network for managing this food system consists of small-scale local components as well as huge global ones, and they are complicated, existing in parallel and overlapping with each other. As I mentioned in chapter 1, this food system functions as an invisible infrastructure.

However, the more advanced and sophisticated the food system becomes, the blurrier its whole picture gets to consumers. If nothing is done to simplify this complicated food system, then it could happen more and more that children don’t associate a piece of sashimi with the swimming fish in the sea.

Consequently, misunderstanding or speculation could be caused by asymmetric information. Trouble could arise from miscommunication among the parties involved, and problems could show up in the least expected areas of production and distribution, even a minuscule human error could cause a dysfunction in the entire food system.

Food issue and dietary issue

In this chapter, I would like to review the relation among the world population, food production and biotech crops. It is not easy for us to see the whole picture, because as I mentioned before, food, agriculture and the food distribution industry are intricately intertwined. I will also show the basic standpoints that will help those in agriculture and the food industries as well as consumers to understand better the situation surrounding world population, food production and biotech crops.

Let us consider briefly the difference between food sufficiency and dietary sufficiency.[22] I wonder how many people really understand the precise difference, because even some experts and media people often mix them up. As an example, both self-sufficiency in food and self-sufficiency in diet often appear in the media.

Simply put, dietary sufficiency means only the staple food, whereas food sufficiency means all the food groups including fish, meat, vegetables and fruit. Dietary sufficiency just refers to staple foods such as rice and wheat in Japan.

One may think this is a problem specific to Chinese characters that are ideograms, but it happens even for the other languages. A similar question you can ask is the meaning of "corn".[23] If I ask such a question to my students in my university classes or at the lectures outside, all the persons answer correctly. However, if I ask a question, "Does anyone know the other meaning of corn?," some people have different opinions. One may say that it is an ice-cream cone, and the other says it is a traffic cone.

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[22]Food and dietary have the same pronunciation, "Shokuryo", in Japanese.
[23]Similarly, both corn and cone have the same pronunciation, "kohn" in Japanese.

Next, if you ask a Briton, “Do you like corn?” What answer do you expect? In England, corn means the staple food in the region, not like the definition of corn used by the Americans. You can confirm this in the dictionaries, if you like. For example, in England wheat is corn, and oats are also corn in Scotland. The yellow grain that we are familiar with is called maize in England.

If you would like to go the extra mile, please consult with various dictionaries. You may find even more definitions of corn than wheat and oats.

This is an example of how little we know about food, even if we think we know a lot. I myself know about food and grains as far as trading are concerned and supply and demand, but not so much about the nutrition and process engineering. Therefore, what I offer here is rather limited, but I still believe this information can provide some hints to you when you think about food for today and tomorrow.

Five perspectives to understand a complicated situation

I always think that these five approaches help us understand this complicated situation.

1. Start from the common reality.
2. View the subject matter from the mid-term, long-term and even longer-term perspectives.
3. Acknowledge basic figures and use these figures as a foundation for further thought.
4. Always ask yourself, “What if this had not been here?”
5. Try to think about the mechanisms for providing the basic essentials in our life, and the invisible infrastructure.

Let us view the population of the world and Japan, and let us consider food, especially grains, based on the above-mentioned five points.

Supply-and-demand balance of major grains in the world

The supply-and-demand balance of major grains is reported by the USDA every month, as mentioned in chapter 3. Wheat, rice, coarse grains and oilseed are shown as of October 2011 in the following chart. Total production and demand of major grains are 2.7 billion tons. Among that, coarse grains constitute 1.1 billion tons, including 800 million tons of corn.

Strictly speaking, oilseed including soybeans is not grain. There are 300 million tons of potatoes produced aside from grains, and the figure for rice is not based on brown rice but milled rice, which we must take into account, but what is important for us is to know that these quantities of grain are produced and consumed in the world annually.

We need to know these numbers because the individual information about each grain, which we get from various media, usually does not tell how these amounts relate to the total numbers. Therefore, it is hard for us to judge the influence of the numbers on the entire grain market, and we may end up with a biased judgment.

Supply and demand forecast for major grains in the world (2011/2012)

(Unit: 1,000 tons)

	Wheat	Rice, milled	Coarse Grains	Oilseeds	Total
Beginning Stocks	195,604	97,803	168,185	80,020	541,612
Output	681,195	461,394	1,136,275	453,460	2,732,324
Total Supply	674,434	457,783	1,148,481	460,460	2,741,158
Ending Stocks	202,365	101,414	155,979	73,020	532,778
(Stocks to Use Ratio)	30.0%	22.2%	13.6%	15.9%	19.4%
Gain and Loss	6,761	3,611	▲12,206	▲7,000	▲8,834

Source: The USDA data (Oct. 2011)

How much grain Japan imports

Now most of us know that food self-sufficiency in Japan is about 40 percent in terms of calories, but can you answer to this question: "How many tons of grain does Japan import every year?" Perhaps it is not easy to answer.

Not many of us can answer this question, perhaps because Japan's education has made most of us so we "cannot see the forest for the trees," or because we have never been accustomed to think about such facts. But we should have an idea how much it is, if we look ahead to the future.

I mentioned that according to the USDA data as of October 2011, Japan has imported 5.8 million tons of wheat, 700,000 tons of rice, 19.14 million tons of coarse grains and 5.77 million tons of oilseeds from the U.S. And the total amount of agricultural produce imported from the U.S. per year amounts to about 31 million tons. That means we have been importing more than 30 million tons of grain every year just to maintain our ordinary life.

For those who cannot imagine the quantity due to its immensity, I would just explain the situation surrounding corn. Among coarse grains, which make up some 60 percent of the entire import of grain, corn accounts for 16 million tons and is the largest single item of all. Four million tons of corn is for industrial use, such as production of corn starch, and 12 million tons of corn is for livestock feed, as mentioned before.

Domestically grown beef, pork and poultry are very important foods not only for household consumption, but also for the food service industry such as restaurants and food manufacturers. There is high demand among consumers for meat, but unfortunately corn, the most common feed grain, is barely produced domestically. Only a small amount of corn is grown in Japan for unripe harvesting, seed and food.

We can sustain a viable livestock industry and eat domestically grown meat only because we import 12 million tons of corn for feed (about 1 million tons per month), a steady and constant flow of imported grain. Domestically grown corn is only a minuscule amount compared to the imported corn. This

is hard to face up to, but it is a reality we should not deny.

Those engaged in trading and distributing grains are making constant efforts even though such efforts are unseen by consumers, because they understand what needs to be done in order for this invisible infrastructure to work smoothly and not be blocked for some reason.

Our meals would be completely different if domestic agricultural produce was all we had available.

Sample one-day menu using only domestically grown produce

Seasoning for one day

Six teaspoons of sugar, 0.6 teaspoons of oil

Breakfast

A bowl of rice
(75 grams of milled rice)

Two boiled potatoes
(300 grams of potatoes)

Pickles
(90 grams of vegetable)

Lunch

Two baked sweet potatoes
(200 grams of sweet potatoes)

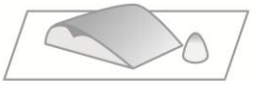
One steamed potato
(150 grams of potato)

A quarter of an apple
(50 grams of apple)

Supper

A bowl of rice
(75 grams of milled rice)

One baked sweet potato
(100 grams of sweet potato)



One piece of grilled fish
(84 grams of fillet)

One bowl every other day

Udon noodles
(53 grams of wheat flour/day)

One bowl every other day

Miso soup
(9 grams of soybean paste/day)

+

One package every three days

Fermented soybean (natto)
(33 grams of soybean/day)

One glass every six days

Milk
(33 grams of milk/day)

One every week

Egg (7 grams of egg/day)

One dish every nine days

Meat (12 grams of meat/day)

Note: This model menu is designed to total 2,020 kcal/day based on the premise that there is 4.5 million hectares of tillage in Japan (2015's estimated tillage area) with the maximized calorie efficiency.

Source: "The Food Situation in Japan at Present" by MAFF in July 2007

In July 2007, the MAFF produced an interesting document called “The Food Situation in Japan at Present,” and the most interesting data in this document is shown in the above chart. There was also a TV program broadcast by NHK in 1978, when I was a high school student, and its title was “Your Diet: One Day without Imported Food.” The MAFF’s document seems to be a re-creation of this TV program based on updated data.

If we try to prepare our meals only with domestically produced ingredients, we could eat one bowl of udon noodles and one bowl of miso soups every two days. We could drink one glass of milk every six days. We could use one egg per week and enjoy one meat dish every nine days. And on and on it goes. The same data also shows that a bowl of soba buckwheat noodles with tempura, a typical Japanese traditional dish, is an example in which we rely on imports for 80 percent of the ingredients. (See the chart below.)

The data tells us that our dietary level will return to that of the 1940s if food and grain imports are stopped, and I guess no one would hope for that to happen. At the same time, we should not let food-producing countries take complete control over Japan’s diet.

Tempura soba buckwheat noodles, part of Japanese traditional cuisine since the Edo era, relies on imported products for 80 percent of its ingredients

80 % of ingredients are imported

Self-sufficiency (based on calories) percentage of ingredients

Ingredient	Self-sufficiency percentage	Country of origin
Buckwheat	**21%**	China (60%)
Prawns	**5%**	Vietnam, Indonesia (20% each)
Wheat flour	**13%**	USA (50%)
Eggs	**11%**	USA (90% of feed for chicken)
Canola oil	**0%**	Canada (80%)
Sugar	**34%**	Thailand (30%), Australia (20%)
Bonito broth	**94%**	
Soy sauce	**0%**	Most soybeans are from the USA
Sweet cooking rice wine	**95%**	

Note: Data as of 2005 fiscal year.
90 percent of feed for egg layers is imported.
All the material for soy sauce (soybeans) is imported.

Source: "The Food Situation in Japan at Present" by MAFF, July 2007

Therefore, we need to constantly seek the best and most realistic measures to secure our food supply by understanding the status quo with a cool head, instead by drawing some vague and pleasant-looking blueprint.

What it takes to import 1 million tons of corn monthly to Japan

Back to corn. How much ship capacity is needed to import 1 million tons of corn every month? From the Corn Belt in the U.S., barges follow the Mississippi River down to the Gulf of Mexico, but there is the Panama Canal to go through before reaching the Pacific Ocean. The capacity limit for ships going through the Panama Canal is about 50,000 tons. So it takes at least 20 ships to carry 1 million tons of corn every month.

Those ships, however, will be loaded with other grains besides corn, such as soybeans and sorghum, so the number of ships carrying grain to Japan will actually be well over 30 every month. At least one ship must discharge its grain cargo at a Japanese port every day.

Another important point we must understand is that the ocean transport of grains must be secured safe and sound in order for Japan's food industry to be safe and sound. Ocean transport is the basic route not only for the grain, livestock and meat industries but the entire food industry. We shouldn't make the huge mistake of taking for granted this transport system. We shouldn't assume everything will move smoothly without accident to deliver our commodities without delay. We also can't assume this invisible infrastructure will continue no matter how circumstances may change.

It cannot be over-stressed that this invisible infrastructure, as well as the electricity, gas and water utilities, has been maintained only because of dedicated people and organizations who are making every effort. This essential infrastructure does not run smoothly by itself.

At least 13 million tons of biotech corn is imported to Japan

In Japan public opinion about biotech crops has not changed much for the past 10 years, I think. The public opinion is formed from certain extreme

advocates as well as extreme opponents, and a majority of people, both in the food industry and consumers, simply want to avoid discussing the issue and keep silent about biotech issues.

The fact that we don't even know the total amount of crops being imported to Japan is a big problem when we try to discuss whether it is good or bad, or how much biotech grain should be imported. Now I would like to figure out how much Japan imports in terms of biotech crops, based on a certain premise.

In the previous chapter, it was explained that 16 million tons of corn is imported to Japan annually, and that biotech corn accounts for about 13 million tons. A total of 17 million tons of biotech crops, including the biotech corn, soybeans and canola, are imported every year. I would like to present three points relating to the attitude we should take toward imported biotech crops.

First, we should be properly aware that our life and the status quo are built upon imported biotech crops. I have stated that ordinary consumers don't know what huge amounts of biotech crops are imported to Japan. Even many experts who know the reality only accept biotech grains as livestock feed and that unwillingly. They still think biotech crops are not needed as food for humans.

But this is quite strange, isn't it? The Organization for Economic Cooperation and Development (OECD), of which Japan is a member, showed its scientific principles relating to the environmental safety of biotech crops, and the OECD made clear its stance and principles relating to the way of assessing biotech crop safety, and that was published in 1993 after a decade of review. The OECD member nations have sorted out their domestic laws in accordance with these guidelines and principles. As for the impact that biotech crops may have on the ecosystem, this has also been tested and assessed based on the rules detailed under the Cartagena Protocol, an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology. Such tests and assessments are handled officially, and they abide by the applicable

international rules. It is very strange that Japan has acted against the international rules despite being a member of the international community.

The Japanese government should openly announce that a certain safety level is approved for biotech crops, and it should address the unclear labeling issue. If Japan's regulatory authority, food companies, media and consumer groups keep acting as if biotech crops are bad and non-biotech crops good, then consumers will never see what is right about biotech crops. How long, I wonder, will we continue to have this attitude?

Second, is it impossible for people who refuse to accept biotech crops to import non-biotech crops into the future? I don't think so. The basic and important fact is that agriculture is a business both in Japan and the U.S.

We may feel like looking at the romantic aspect of agriculture, but to those who produce livestock and grain, agriculture is their livelihood and business. The market value of non-biotech crops is not just as a complement for biotech crops. Non-biotech crops have their own distinguishing status. Simply put, it is entirely possible to ensure a certain supply of non-biotech crops if consumers are ready to pay high enough prices. In that regard, farmers in the U.S., Argentina and Brazil are very practical. On the other hand, the overwhelming majority of farmers today in the U.S. are growing biotech crops. We can buy non-biotech crops only if there are farmers who agree to produce them.

Third, all the stakeholders in the agriculture industry should take measures to improve on the status quo based on facts that have been verified over the course of time. We consumers are still discussing whether biotech crops are acceptable or not, based on their herbicide tolerance features or insect resistant features, which were introduced more than 10 years ago. But scientific progress is advancing very fast and steadily. In many cases, the concerns people had in the early stages have been proven incorrect, but not much attention has been paid to such verifications. Only sensational speeches and press reports tend to remain in our minds, but we should always look at the status quo with cool heads.

Responsiveness to change and insight for the future

The EU research commission reported in 2009 that at least 124 different varieties of biotech crops will reach the final state of development or start commercial cultivation by 2015. As of 2009, only one herbicide tolerance soybean is commercially cultivated, but another 17 varieties will be added along with 24 varieties of corn, 10 varieties of canola, 27 varieties of cotton, 15 varieties of rice, eight varieties of potato and 23 varieties of other crops by 2015.

The number of crop types, sorted by region of production, gives us a clear picture of the reality. Among the 124 new varieties of crops, 67 varieties will be produced in the U.S. and European countries, and 54 new varieties are supposed to be produced in Asian countries. If the circumstances do not improve in the field of biotech crop production, Japan will not produce even a single biotech crop.

It is not hard to imagine what impact Japan will suffer in terms of international competition as well as Japan's future as a country that aims to be a world leader in science and technology. We cannot break through this situation as long as we continue a vague discussion about biotech crops based merely on our superficial opinions about whether they are good or bad.

Furthermore, I think I am not the only one who gets dismayed at the current situation in which all biotech crops have been put in one basket, even though there are some biotech products that have been produced, distributed and consumed for over 10 years, and others that are now being tested in laboratories.

The EU, in contrast to Japan, has been cool-headed and realistic. The EU gives us the general impression that it is simply against biotech crops, but the reality is a lot more complicated. The EU has taken member states' interests into account and has been streamlining its environmental laws surrounding biotech crops. It has also been promoting research, along with a selected moratorium, to meet halfway with the opposing parties. The EU has maintained its biotechnology research at a certain level.

The EU has set up moratoriums and policies to guide the coexistence of biotech crops with non-biotech crops. In July 2010, it laid a framework and made a proposal allowing member states and individual regions to make their own decisions with a certain amount of discretion about cultivation of biotech crops.

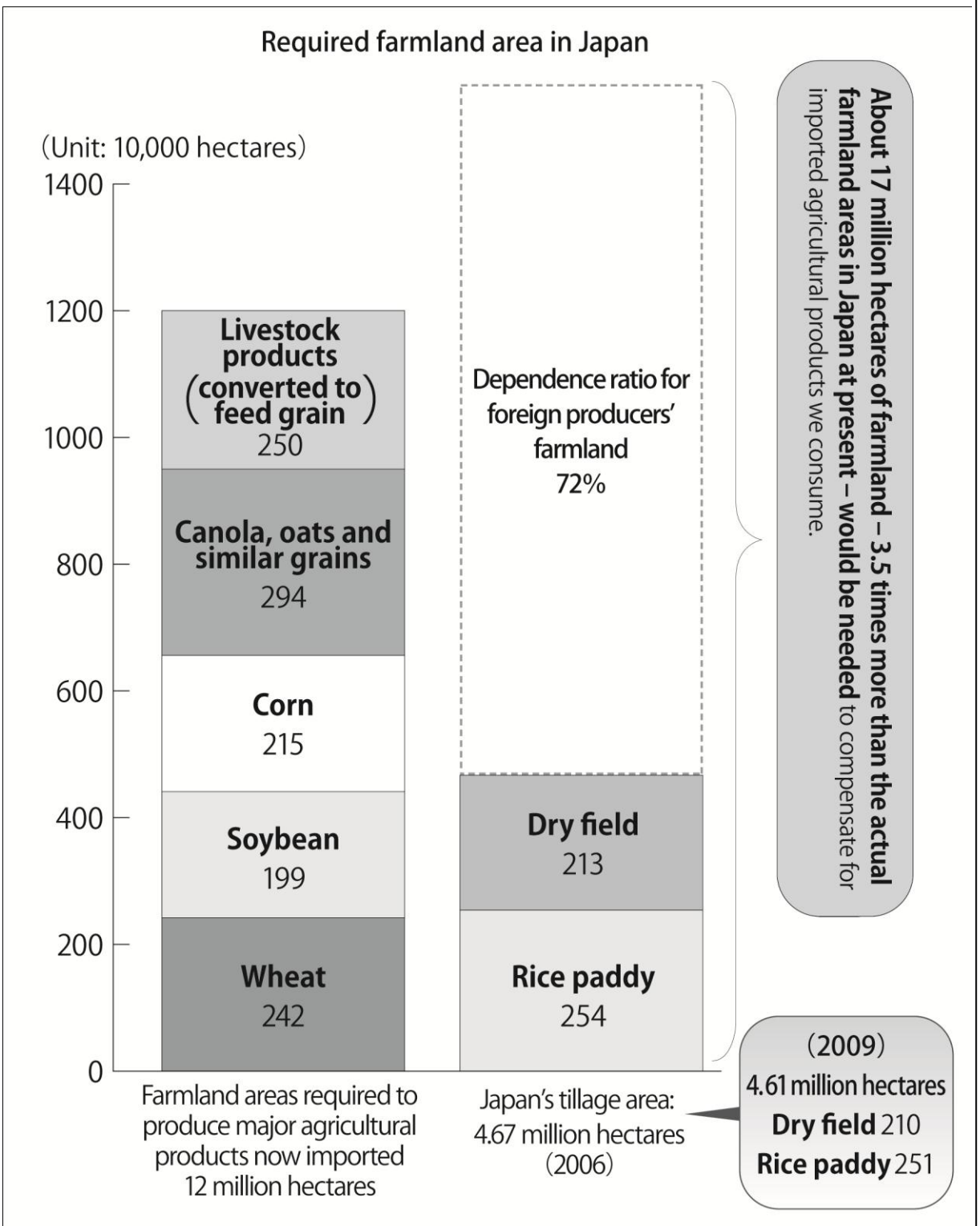
Basically, the decisions will be made by the individual states about whether to cultivate biotech crops or non-biotech crops, but the research and development that is essential for world-class competition will continue based on a certain rules. This move by the EU is quite different from Japan's very cautious attitude, and I wonder where this huge gap in attitude comes from.

I guess the difference comes from one group being more insightful about the future. Or perhaps the difference is that one group understands the necessity of a completely new type of comprehensive and cautious approach for examining the potential of biotech crops. It is not enough just to examine them one by one. For now, Japan is among the countries that have benefited most from biotechnology, but Japan's attitude toward this technology is very backward and negative.

The farmland that Japan would need

The chart as following is one I modified based on the data provided by MAFF. The total area of farmland in Japan as of 2009 was 4.61 million hectares. By dividing the amount of imported grain per year by each item's average yield per hectare, we can see the area of farmland Japan would need to produce the same amount of grain as it imports every year. The result is about 12 million hectares. This chart indicates that Japan would need about 3.5 times as much farmland (a total of about 17 million hectares) in order to grow all the agricultural produce that the Japanese population consumes. This is yet another reality that we may try to deny.

The farmland that Japan would need



Note: Farmland areas needed to produce imported major agricultural products=the amounts of imported wheat, soybeans, corn and other imported grain were divided by each producer's yield/hectare.

Source: MAFF data compiled by the author

If there were 17 million hectares of farmland in Japan, that means 1 hectare of farmland would yield enough agricultural produce to feed seven or eight people.

Suppose Japanese farms could be enhanced somehow, perhaps with some special fertilization treatment, so that 1 hectare could yield enough crops to feed 10 persons. Even then, the entire Japanese farmland could only feed 46.1 million people. Even if we could somehow double farm yields, we would still have more than 30 million people going hungry. This is the reality that Japanese people seem to turn a blind eye to.

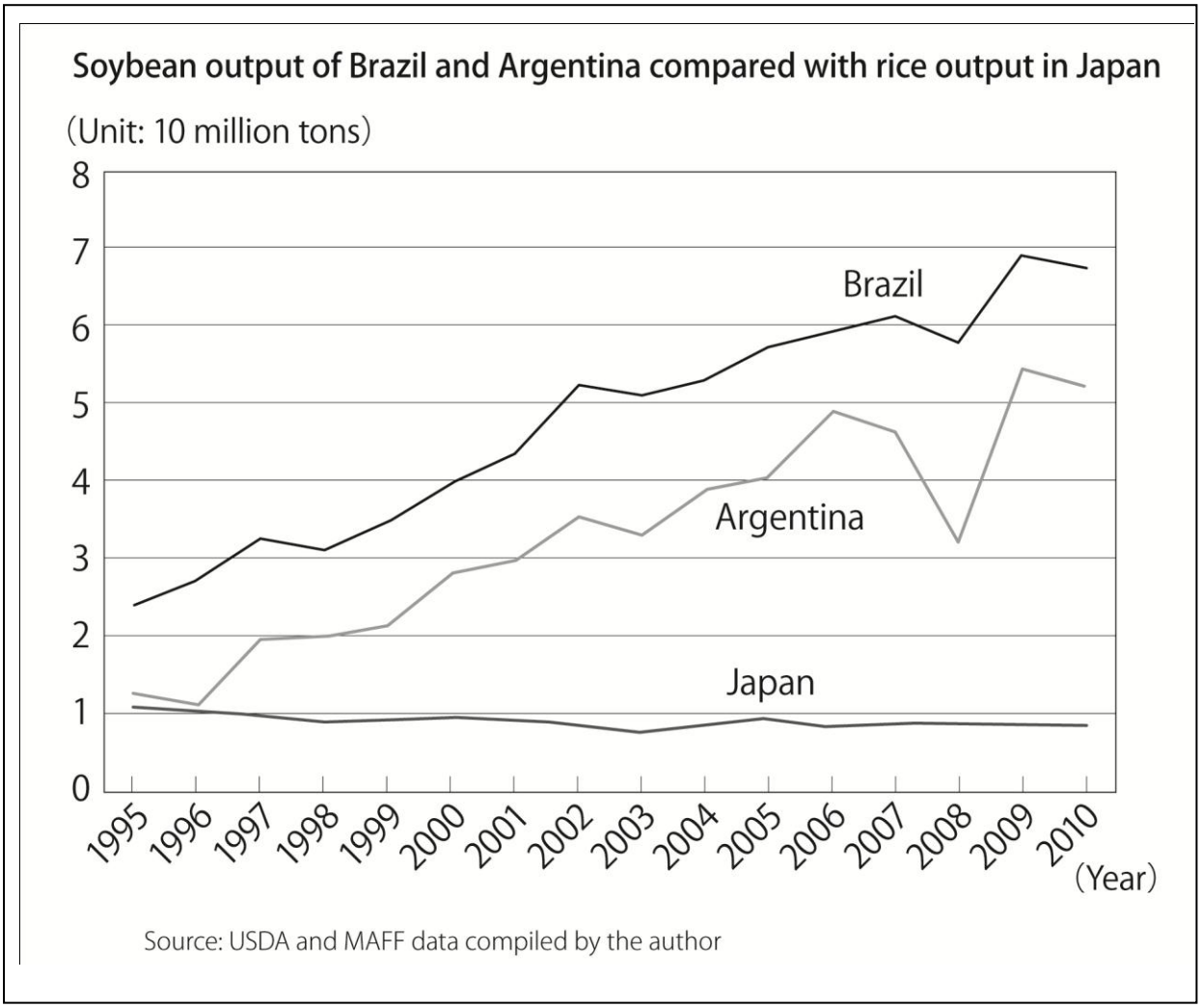
In fact, we have barely succeeded in sustaining our current living standards by maintaining good relations with our agricultural producing partners for quite a long time. In other words, we cannot afford to break up with such partners even if trading conditions get truly tough, but that doesn't mean we should feel inferior to them.

The most important point is that Japan should build positive and enduring interdependent relationship with its trading partners and not depend on them in a one-sided relationship. Since trading can only be feasible through agreement between the parties involved, the partner who imports agricultural produce in a stable and steady way is truly valuable. We should try much harder to find the best way to build the best possible interdependent relationship with our trading partners.

The chart below compares the trends of rice production in Japan with soybean production in Brazil and Argentina. The homeland profiles and climates in Brazil and Argentina are very different from that in Japan, although one simple but important fact would be missed if we paid attention only to the obvious differences. We become aware of this very interesting fact by comparing the trends of soybean production in these countries with our rice production over the past 15 years.

The trend of Japanese rice production has remained unchanged or else has seen a very slight decrease, whereas soybean production in Brazil and Argentina has been increasing at an amazing pace. This reality can easily be

overlooked if we see the production trends in comparison item-by-item. If you apply the impact of five times more production over 15 years to the rice production in Japan, we will easily see how broad the scope of impact would be. Demand in the world market has already expanded to take in all the increased soybean production.



Prospects for world population growth and various uncertainties

It is vital to consider the trends in world population when considering not only biotech crops but also the food distribution and agriculture industries in the future, because environmental science, medicine and agriculture are the fields where technology will likely have the biggest impact. And our civilization has developed into a broadly technological civilization that can

afford to feed very large population.

Japan's population is predicted to decline gradually after its peak in 2004, but the world's population is supposed to increase greatly from now on. According to the 2010 revision of the U.N. World Population Prospects, the world population in 2050 is expected to be some 9.3 billion, which is 2.4 billion more than today. Among that 9.3 billion in total, the population of Asian countries will be 5.1 billion. Thus, Asian population is estimated to increase 1 billion in the next 40 years, accounting for almost half the worldwide population increase of 2.4 billion. In Africa, the current population is about 1 billion, but this is estimated to double to some 2.2 billion by 2050. This increasing trend is predicted to continue until world population exceeds 10 billion by 2085.

Among countries most closely related to Japan, China's population is estimated to peak in around 2025, and India will reach its peak in around 2060 with 1.7 billion people or even more. Meanwhile Japan's population is estimated to be around 100 million in 2050.

Unfortunately, supply and demand of food has not been forecast for 2050, but since the world's population will likely be 1.3 times the present population, it can be predicted by simple calculation that food demand will be at least 3.5 billion tons (current food demand is 2.7 billion tons). The question here is how to meet the increased food demand. And scientific technologies are the key to the solutions, if we take today's world's cultivated areas into consideration.

What factors matter most when we look into the future of food, considering both agriculture and the food-distribution industry? I would like to point out five factors: land, water, climate change, energy and technology. Among these, we already see some heated competition over land in the world, which is called a "Land Rush." Individual companies have actively embarked on acquiring land in foreign countries, and some nations such as China and certain Middle Eastern countries have also been acquiring foreign land quite actively as part of their national policy. It is true that such moves have been criticized, but it has not been widely recognized in Japan as a new business

model to acquire farmland that the owners, perhaps young people who have recently inherited the land, do not farm. The ownership of such land cannot change, and owners might simply lease these farmlands to tenants.

Factors to be considered

The water issue is not so conspicuous compared to the land issue represented by the Land Rush phenomenon, but it has become a serous issue in Africa as well as in China. The water issue includes shortages of water itself and financial constraints that hinder the building of necessary infrastructure to distribute water. In some cases, infrastructure has not been set in place even though water is available. Climate change and energy are also both very important. The consensus has been almost formed in the world that global warming is happening, although there is no consensus about the extent of its effects among the major economies. Agricultural producers know how big an impact every degree of higher temperature has on farming, so global warming must be addressed in every possible way for as long as it takes.

The energy issue has something closely to do with increasing population. Basically, as a population grows, its economic activity is boosted, and consequently its energy demand also increases, although the factor of energy efficiency should also be considered. That also has a long-term impact on the market.

Last but not the least important factor is technology, which surely includes the influence of biotechnology such as biotech crops. I think what we need in the future is a mechanism that facilitates a consensus in society about how to control and utilize the development of technology, instead of ignoring or blocking development of technology.

The number of stakeholders will increase as the scope of food production and distribution widens. Even domestically produced agricultural produce may be linked with foreign producers if fertilizers and feed are taken into consideration, so Japanese agriculture may even become part of the global food production system. The key to establishing food security is to build a highly transparent and flexible mechanism for the food system so we can

more efficiently manage a variety of uncertainties. Our approach to biotech crops should be reviewed and developed in above mentioned mechanism.

Differentiation or low cost?

The biggest attraction for foreign tourists visiting Japan is Japanese food, along with our safe streets and communities, clean environment and quality services. I am proud of all that. On the other hand, I feel a little strange because I know the reality about Japan's self-sufficiency in food.

Michael E. Porter, a world-leading business scholar, says business strategy boils down to just two key aspects: low cost and differentiation. The Japanese food that foreign tourists long for is not the product of a low-cost strategy. What foreign visitors expect from Japanese food is the value created purely by Japanese tradition and skill, which is what greatly differentiates the Japanese food industry. We should take a bold step forward to understand the foundation that our food and agricultural industries rely on, in order to maintain established Japanese foods and food brands.

Chapter 6

What Lies in Japan's Food Future?

How to deal with climate change and tap the world's potential farmland

There is no doubt that many of us have started paying closer attention to the future of our food and the farmlands that produce food since we experienced the soaring grain prices in 2008. Our concerns about the future of food were aggravated by yet another concern about Japan's self-sufficiency in food. It is still fresh in our minds, the big news that about how Japan's food self-sufficiency had dropped below 40 percent in calorie terms (regardless of whether this is the right way to measure the reality). But actually, Japan's self-sufficiency in food has not changed much in the past 15 years, if you pay close attention to the data, so it is already an overdue argument, if you ask me.

Nonetheless, there are some things we must acknowledge in considering the future of our food and agriculture that may affect every one of us, so I will point out some of them by way of summarizing this book.

First of all, we should consider the impact of the climate on world grain production. The most threatening risk for agricultural production is climate change, as we have witnessed the damage done to world grain production in recent years.

In the past few years, wheat production has been greatly affected by droughts from Central Asia through Russia. In North America, low humidity and high temperatures during the corn pollination season greatly lowered the yield, while abundant precipitation in Europe and Canada deteriorated the quality of the wheat in those regions. In Australia, droughts and

concentrated downpours caused extended damage to crops.

In Japan, there was the Great East Japan Earthquake as well as typhoons, and it is true that there are no places in the world that are immune all year round to such natural hazards. We should be aware that every part of the world is exposed to unexpected climate shifts and natural disasters all the time. There should be sincere discussions about how far and for what we should be prepared, and we should take appropriate measures.

Second, moves to acquire farmland throughout the world have been rapidly drawing attention, and the most sought-after areas are in Africa, but some active moves have been reported in Asian countries as well. According to a report provided by the World Bank in 2010, there are 446 million hectares of potential farmland in the world, some 200 million hectares of which are in Sub-Saharan Africa.

Most of us Japanese may think that Sub-Saharan Africa is too far away to imagine what it is like. Today, not only the private sector, but also the public sector has already embarked on various actions, including the governments of food importing countries as well as African governments.

As mentioned in chapter 4 of this book, the farmland we are talking about is the homeland for local people, who have their traditional ways of dealing with their own lands and resources, to say nothing of local customs concerning land ownership. Japan must cooperate and contribute so that local people get transparent, beneficial, sustainable and environmentally friendly deals, and we cannot exempt ourselves by saying that Japan is too far away.

Japan, as one of the big feed grain importers, should take part in establishing rules to help both parties involved, possibly by providing advice and effective models for agribusiness relationships, since food and farmland are owned by individuals, even though that food and farmland could be treated as an international public asset in times of supply-and-demand emergency.

Third, the trends of economic activity and agricultural produce trade are important for us to watch. Since the economic trends in the whole world and soaring price of energy are the driving forces for food prices, making agricultural produce more expensive, it is important for us to understand such trends and to deal with the outcome properly.

As history shows, higher incomes mean greater food consumption, especially of meat. There is a chain reaction in terms of meat consumption whereby expanded meat consumption causes feed demand to increase, and that drives up grain prices. Populations also tend to increase, especially in developing countries, and this is another factor reinforcing the chain reaction of meat consumption.

Future agricultural producers: Brazil, Russia and Ukraine

The annual USDA long-term projections out to 2020 predict that Africa and the Middle East will see the greatest growth in demand for food and agricultural produce.

It is also predicted that in 2020, 45 percent of poultry trade will be imported into Africa and the Middle East, along with 20 percent of beef. (See the chart below.) As was once the case in Japan, these areas will be hurriedly establishing their livestock industry and securing import partners under national policies, in order to respond to the rapidly increasing meat demand from their populations. In the countries where not enough tillage is available, the import of meat will be actively subsidized by governments, and they will also support their still fledging livestock industry with the active imports of feed grains. That will act in combination with official support for the establishment of feed manufacturers.

In Asia, however, we should pay close attention to China's developments. China has already adopted a policy to rely entirely on imported oilseed, and it is estimated that China will import two-thirds (67 percent) of all projected trade in soybeans by 2020. The following charts show the projected exports of soybeans (top) and the projected import demand for soybeans (bottom). These charts indicate that the production in Brazil and Argentina will

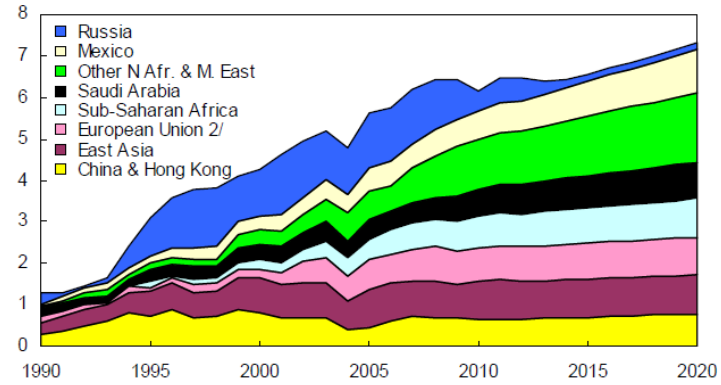
increase remarkably, and that the amount of soybeans that China imports will grow tremendously.

It can be predicted that Africa, the Middle East and China will be the world powerhouses of feed grain imports in 2020, a role that Japan once played.

There is no doubt that the U.S., Canada, Australia and the EU will remain important agricultural exporters, and also that Brazil, Russia and Ukraine will take a greater and greater part in the trade of agricultural produce.

Poultry imports 1/

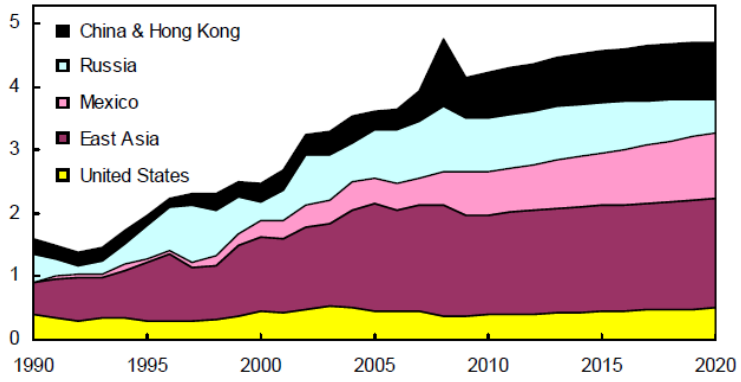
Million metric tons



1/ Selected importers.
2/ Excludes intra-EU trade.

Pork imports 1/

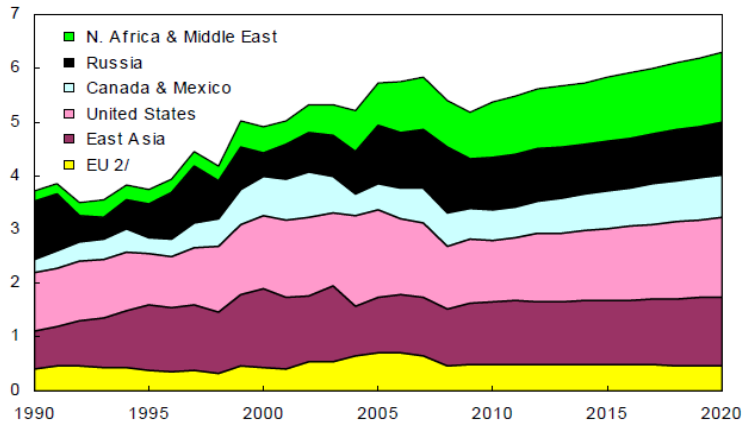
Million metric tons



1/ Selected importers.

Beef imports 1/

Million metric tons

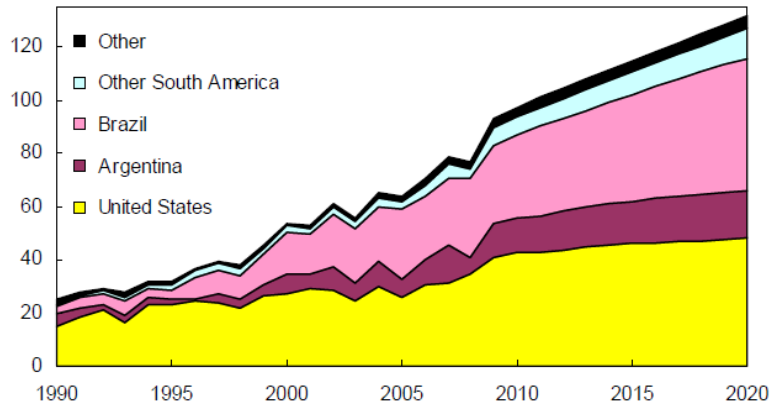


1/ Selected importers.
2/ Excludes intra-EU trade.

Source: The USDA data

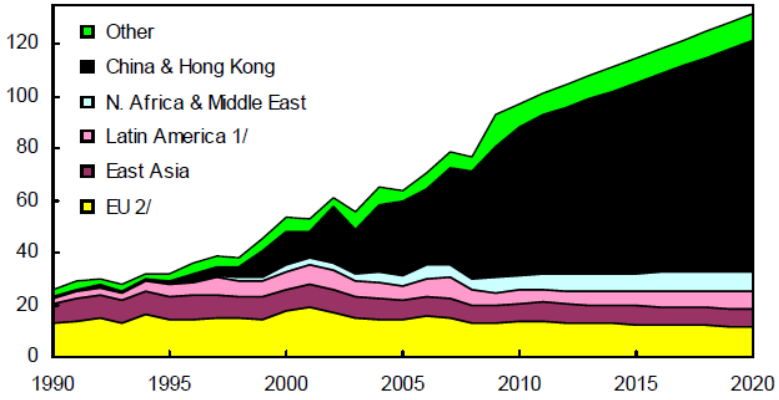
Global soybean exports

Million metric tons



Global soybean imports

Million metric tons



1/ Includes Mexico. 2/ Excludes intra-EU trade.

Source: The USDA data

Overcoming Japan's declining prominence in world grain trade

Fourth, in the context of the worldwide trade of agricultural produce, Japan's position as a major importer will decline in relation to the emerging countries. We should face up to this possibility.

The following charts are based on the USDA long-term projections, showing prospects for world grain trade in 2010 and 2020, as well as the prospect of Japan's grain imports in the same years, and prospects for the areas where agricultural purchases will increase significantly.

It is projected that the 373.3 million tons of agricultural produce trade in 2010 will expand to 468.8 million tons in 2020. This is a 25 percent increase that works out to a 2.5 percent increase on average per year for 10 years. Among the major produce items, wheat, rice, coarse grains and soybeans are all projected to increase in trade volume.

World grain trade projections (Unit: million tons)

	2010	2020	%
Wheat	127.2	151.9	1.8
Rice	30.5	41.0	3.0
Coarse grains	118.4	144.4	2.0
(Corn)	(93.2)	(113.2)	2.0
Soybeans	97.2	131.5	3.1
Subtotal	373.3	468.8	2.3

Note: average growth rate between 2010 and 2020

Japan grain import projections (Unit: million tons)

	2010	%	2020	%
Wheat	5.2	4.1	4.9	3.2
Rice	0.7	2.3	0.7	1.7
Coarse grains	19.2	16.0	18.4	12.7
(Corn)	(16.1)	17.3	(15.8)	14.0
Soybeans	3.5	3.6	3.0	2.3
Subtotal	28.6	7.7	27.0	5.8

Note: share of total world trade

Grain trade projections in areas where purchases are expected to expand (Unit: million tons)

		2010	%	2020	%
Wheat	Africa and the Middle East	54.3	42.7	68.5	45.1
Rice	Africa and the Middle East	14.2	46.7	17.8	43.5
Corn	Mexico	9.1	9.8	14.3	12.6
Corn	Asia excluding Japan	20.8	22.3	30.8	27.2
Soybeans	China	57.0	58.6	88.3	67.1

Note: share of total world trade
Source: The USDA data modified by the author

In fact, Japan's grain imports decreased moderately from 28.6 million tons to 27 million tons. (This is the figure for soybeans only. If other oilseeds such as canola are included, the figure exceeds 30 million tons.) The chart also shows Japan's share of the world's grain trade, which decreased from 7.7 percent to 5.8 percent. Even corn, which used to be the grain most in demand by Japan, dropped from 17.3 percent to 14.0 percent.

The chart on the bottom shows figures for the areas in the world where grain demand is projected to grow most. Demand for wheat and rice will make Africa and the Middle East into the biggest importers. Mexico imports just 9 million tons of corn from the U.S. at present, although it is estimated that Mexican demand will increase as much as Japan's, making Mexico a competitive rival to Japan. It is likely that other Asian countries will also expand their grain imports steadily.

As for soybean imports, China's share is overwhelmingly high, and it is projected that Chinese imports will reach 67 percent of the world's total by 2020, while Japan's share of soybean imports will be just 2 to 3 percent. Furthermore, China's oil extraction from oilseeds including soybeans is astonishingly high at 93 million tons, whereas domestic oil extraction only amounts to 57 million tons. It is no longer relevant for us to talk about competition with China over soybeans, so we should realize how eminent the situation has become in the area of grain procurement.

No way to satisfy Japanese appetite only with domestic farmland

I have mentioned the rising concerns about Japan's food self-sufficiency after the run-up in grain prices in 2008, as well as the problems in our food system revealed through the Great East Japan Earthquake, the unsung efforts of those engaged in the food and feed industries in both the U.S. and Japan, and the invisible infrastructure, from a historical standpoint. Now that we have acknowledged these things, let us focus on what to do next.

I think balancing is the key solution. We need a good balance between domestically grown products and imported products, between nature and scientific technology, and between the U.S. and Japan from a long-term

perspective.

Japan and the U.S. have been cooperating to secure the stable supply of the U.S. feed grains to Japan in order to establish and promote Japan's livestock industry over at least half a century. The cooperation between our two countries has contributed greatly to improving Japan's living standard, especially our diet. Japan's ultimate goal was to satisfy our demand for meat by supplying the necessary feed grains to livestock.

From now on, Japan will enter into a critical phase where our population will slowly decrease, but Japan has to find a way to sustain our agricultural industry. Unfortunately, it is true that many of us perceive this trend in terms of Japan entering its sunset stage.

On the other hand, it is undeniable that Japan has achieved impressive economic growth and improved its living standards after World War II as no other country has, and the Japanese organizational ability is still a successful model for many developing countries even today.

Those developing countries may also find it worthwhile to study how Japan has applied state-of-the-art technologies to actual day-to-day life problems and how to solve the problems that arise due to the most advanced technologies. Many countries still need to learn not only the technology that Japan has invented, but also Japan's processes for adapting to growth.

Now we Japanese should face up to the reality that the tillage in Japan will never be able to produce enough food to feed us all, assuming we intend to maintain our current living standard. Therefore, Japan must swiftly construct a mechanism by which younger Japanese can master the most advanced agricultural skills in the world as well as agricultural business management so that farming can be a lucrative business for them. This way we can perhaps halt the declining production of domestically grown produce.

Ties with agricultural producers must be strengthened

At the same time, we should reinforce even more our ties with agricultural

producers such as the U.S. When grain prices were skyrocketing, many agricultural producers banned the export of grain in order to calm unrest in their countries, whereas the U.S. never did that to Japan.

If the U.S. had banned grain exports at that time, Japan would have fallen into all-out panic. Therefore, it is essential for us to strengthen our ties with our counterparts, the agricultural producers, both at the public and private levels partly as a precautionary measure.

It is only possible for us to make contracts and trade if we have willing partners out there. No matter how desperately Japan needs feed grains, we won't get a single grain if our partners don't want to trade with Japan. Thus, the half-century of close ties between the U.S. and Japan will be remembered by both our countries as a valuable achievement and a testament of trust, because it takes endurance and sincerity from both parties in order to maintain a long-term partnership.

Since the U.S. no longer has a wide open western frontier to exploit, many opportunity-hungry young people, who were engaged in farming, have moved into agricultural management. The young Americans have been engaged in the agricultural management not only in the U.S., but also in South America as well as in Africa over the past 10 years or more. I have met many young people, not only in the U.S. but also in other countries, who are pursuing the noble cause of feeding our increasing world population.

It is an important social duty not only for Japan's educational organizations, but also for those Japanese who have experienced the era of unprecedented economic growth, to educate young people to take up farming in Japan as well as to take on an active role in the business of farming all around the world.

It is vital for them to develop skills to sustain domestic farming and take the initiative in Japan's food industry, as well as in the global arena. During the period of high economic growth, it was common for Japanese people to take an active role in international markets for distribution of Japanese automobiles and home electrical appliances. But it seems that competitive

Japan-made products are dwindling away year by year, while the number of highly competitive young Japanese, able to promote themselves in the global market, is also dwindling.

The U.S. business school where I once studied has lately seen a remarkable decline in the number of its students from Japan, but an amazing increase in students from other Asian countries, especially China. More Asian students are going abroad for study year after year. I myself have been asked by my old friends and colleagues, "What happened to the frisky up-and-coming Japanese?"

The amicable relationship between the two leaders among countries works positively for the bilateral relationship, but reinforcing every level of the relationship, including the private sector and individuals between our two countries, will be the most vital driver leading to an even better bilateral relationship on the whole. In fact, the number of agricultural producers in the world that can supply agricultural products in a steady and stable way is limited, and Japan has to continue importing crops from these countries. It is obvious what we, in each generation, must do.

In the process of learning about our international partners – their language, politics, economics, history, culture and food – we can also realize the position Japan is in at present in the world. If we don't gain such a vision, it is just a pipe dream to reach mutual understanding between two countries. In a bilateral relationship, it is the first yet vital step to be aware of each other's differences, and only after that will it be possible to take a further step toward cooperation and compromise.

As for the global supply-and-demand of food, there is no doubt that food demand from developing countries will increase fast and by a large amount. On the other hand, as the example of bio-ethanol shows, it is true that an unexpected new market may emerge due to the development of technology or a shift in countries' policies, and that could have a huge impact on the whole supply-and-demand balance. In fact, the prevalent cultivation of biotech crops is one of these cases.

Here is what one confident young corn grower has to say about biotech crops. Nathan Fields is a 34-year-old member of the National Corn Growers Association (NCGA). He said,

"I'm a corn grower but we are talking about food. We are talking about food security, and we are talking about consistent abundance of supplies, producing enough to feed the projected 9-10 billion people on this planet in the next generation ..."

"Biotechnology enables us to supply our safe corn continuously to the market in Japan," says Nathan Fields of the National Corn Growers Association confidently.

Here is his message especially to the Japanese people:

"People can see how bio-technology affects the food system in the United States and is consistent with safety and supply. So we are very confident in this technology, and we believe it is a very safe technology. It is something we want to see all the market continue to adopt, and we want it to grow."

Of course, his message has a promotional aspect in favor of the U.S. crops. Nonetheless, his confidence in the technology and safety of the crop is surely evident in his comment.

He said he is growing his corn with every confidence, and he hopes that Japanese people will buy his corn. He is not intrusive just to promote his

corn unilaterally, but he and his fellow corn producers are constantly paying attention to how their crop is consumed and eaten, as well as the impression their crop gives consumers. Food security is not something that can be done unilaterally or through short-term decisions. Instead, it must be established based on a balance among all the other trade crops, with clear intentions on both sides over a long-term process.

In order to accomplish that, it is important to build a win-win relationship between the importer and the exporter. We have looked back on the U.S.-Japan grain business over the past half-century, as described in this book, and we reflect on the lessons we have learned. In particular, we should remember that food trade issues between two countries should be addressed based on people-to-people ties at the grassroots level, just like the "Hog Lift" project that was realized through trust and compassion on both sides and paved the way for the long-lasting U.S.-Japan relationship.

Now that Japan has experienced such a valuable process where a single event provided an enormous opportunity to build a beneficial relationship with a foreign country, this experience can also give us a hint about how to solve food trade problems between Japan and foreign countries.

Doing nothing would surely push Japan to the brink of losing its position as a major trade player in the world, since other countries are taking over major roles, although many of us seem to be coming to terms with that already, as if it is unavoidable. That cannot be right.

There is no one simple answer to our problems, so we must use our eyes, ears, hands, legs or any available part of our body and every experience from the past, and move into action to construct a new framework to tackle all the problems of Japan's food and agricultural industry, including the issue of the U.S. grain imports.

Now is the time to move – not to mope, even though we must also face up to the formidable challenge of our aging society.

Epilogue

It was about three months after the Great East Japan Earthquake when I was asked to write this book. The weather was really getting hot in Sendai by then.

After the earthquake, I was offered various opportunities as a university professor to speak in public and to write papers about food issues in relation to the earthquake. When I started to think about how to sort out what I had said publicly and written papers, the offer to write this book came along. That's one example of synchronicity. In terms of scheduling, it was really tight, but I was determined to take this offer and write a book that was easy enough for ordinary readers to understand, if they are keen about food issues, even if they are not experts in the food industry and grain business. Nonetheless, I wanted the content of this book to be just as relevant and accurate as the books for specialists.

Chapter 1 is based on two articles I wrote. One was an opening article for a magazine, Nogyo to Keizai (Agriculture and Economy), published in September 2011, and the title was “Blind Spots and Bottlenecks in our Food System Exposed by the Great East Japan Earthquake.” The Nogyo to Keizai magazine is widely recognized in the field of agricultural economy, but I needed to brush up my article so that ordinary people could read it without difficulty. A little before this magazine hit the market, another article of mine was published in the magazine called Seifun Shinko (Promoting Milling), and that article's title was “Promoting Japan’s Milling Industry: Lesson Learned from the Great East Japan Earthquake.” Chapter 1 consists of parts from these two articles.

Chapter 2 developed around the main concept of this book, which my editor and I wanted to emphasize, that the things people take for granted now are the hard-won results of our predecessors' selfless efforts. I decided with my editor to feature the episode of the “Hog Lift” in chapter 2. As a matter of fact, there is a declining number of people who know about the “Hog Lift” through

their own experience, but the ramifications of this key event have grown bigger and bigger every year. A large number of people in both Iowa and Yamanashi have been benefiting from this historical event and enjoying the partnership without considering its origin. They just take this partnership for granted. Lori Erickson's beautiful picture book describes this episode. Had it not been for the various materials prepared by the U.S. Grains Council, I wouldn't have incorporated the episode into this book in such an ideal way.

Chapter 3 was newly written for this book. Currently available data about the U.S. agriculture and farming are too fragments into various categories, so I wrote this chapter to give readers the big picture on this matter. The phrase "right crop for the right land" has been used to describe the characteristics of Japanese farming, but it is also true that the U.S. agriculture is also based on this principle.

Chapter 4 is based on my voluminous paper that I sent to the international symposium hosted by the Korea Rural Economic Institute in August 2011, in Seoul. That paper was titled "JA's International Strategies Centering around Feed Grain Procurement and Direct Overseas Investment," and I touched up this paper for this book to highlight how JA has been dealing with grain imports for the sake of the entire country of Japan. Zen-Noh and Japan's trade conglomerates have different agendas, but both have been responsible for procuring food and feed to build an important foundation for the growth of corporate Japan. In this regard, it is important for us to understand how the international grain trade has developed over the past 30 years. This is important when we look into Japan's food situation in the future. My personal experiences and viewpoints as a former Zen-Noh employee are evident in various places. Therefore, some people may sense a certain bias in favor of Zen-Noh, but my true intention in this book is to focus on how Japan as a whole has been procuring feed grain. I hope readers will also acknowledge that there have been cases of cooperation, such as when Zen-Noh worked with a trade conglomerate to launch CGB to run the grain procurement business.

Chapter 5 is based on my March 2011 article in the journal "Asu no

Shokuhin Sangyo (Food Industry in the Future)" with the title "Biotech Crops and the Food Industry: Required Adaptive Abilities for Change."

Two points I stressed over and over in this book are the amount of grains Japan imports and the amount of biotech crops Japan imports. I emphasized these figures in order to make people think about these key facts once again. I made a presentation with the same theme at the public symposium "Biotech Crops and their Uses," organized by the Science Council of Japan in August 2010. My paper was also published by "Gakujutsu no Dokou (Trends in the Sciences)" in its February 2011 issue. I have been trying over and over to make my point through these papers, using the newest data each time. I think readers will realize the situation they are in now, if only they understand my point of view. Then they will know what to do next in order to improve the current situation.

Chapter 6 was newly written for the most part, but I have spoken publicly about most of what is written in this chapter. I summarized what I have done so far and showed some hints that will help readers think about their future.

Usually, to write this kind of book, it is always the groups and organizations in the field of the subject matter – in this case food and agriculture – that writers must rely on, but I would like to express my special appreciation rather to those who gave me lots of valuable advice to strike a balance between my thoughts based on my own experience, and the objective facts.

First, Mr. Tetsuo Hamamoto, the representative of the U.S. Grains Council in Japan, provided me with valuable hints on critical points based on his wide range of experience and in-depth knowledge about the long history of the grain trade between the U.S. and Japan. Had it not been for the help I received from Mr. Hamamoto and the U.S. Grains Council, I would have had a much harder time to write about the Hog Lift episode in such a short time. I thank Mr. Hamamoto and his organization from the bottom of my heart.

Another person I am very grateful to is Ms. Eiko Nakano, the editor of this book. Ms. Nakano and I had exchanged opinions a remarkable number of times since the start of this book project. Over the course of time, she pointed

out many places where my way of writing could cause misunderstanding or difficulty for ordinary readers. I believe it is all due to her professional advice that I could write an easy-to-read book for those who are not particularly familiar with the grain trade or the U.S.-Japan relationship. I truly thank her for her insights.

This book was published at the end of 2011, the year that Japan experienced the unprecedented disaster of the Great East Japan Earthquake. I sincerely hope that this book will serve as a starting point for readers to become more and more interested in the history of U.S.-Japan relations, especially the history of our food trade, and to participate in strengthening ties between the U.S. and Japan yet further in order to extend and renew this bilateral history.

Thank you very much.
Seiji Mitsuishi

Profile

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Born 1960 in Tokyo. Acquired BA from Tokyo University of Foreign Studies. Joined Japan's National Federation of Agricultural Cooperative Associations (Zen-Noh) working in the feed department and general planning department. Later became executive vice president of Zen-Noh Unico America Corp. Teaching since 2006 at Miyagi University. MBA from Harvard Business School, LL.M. from Tsukuba University. Corporate Law credits for the Doctoral Program in Systems Management and Business Law from the Graduate School of Business Sciences, University of Tsukuba. His previous writings include "Agribusiness ni Okeru Shuchu to Kankyo" (2007) and "Chusho Kigyo to Keiei" (2010).