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

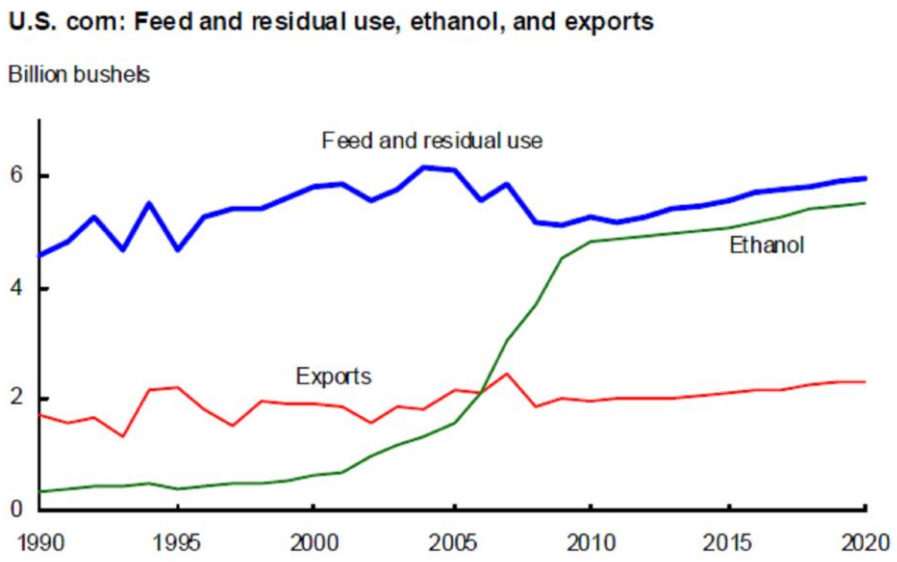
biggest corn importer from the U.S.

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.

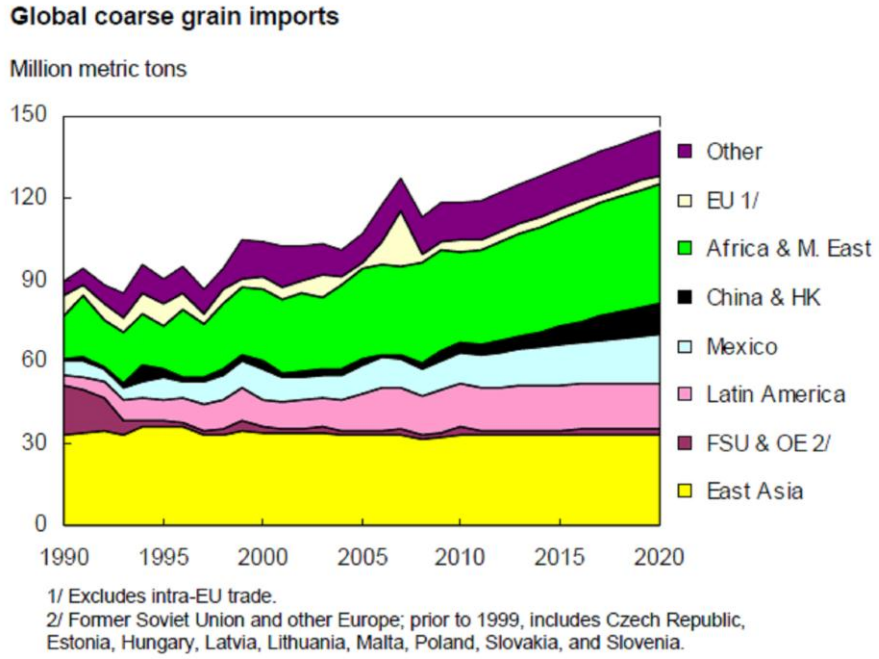
This is a serious matter for Japan, because we have been building up our livestock business while relying on the stable supply of the U.S. corn to feed the livestock. In other words, Japan and the U.S. have built a firm mechanism to consume the corn produced in the U.S. Midwest over the past half-century. 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

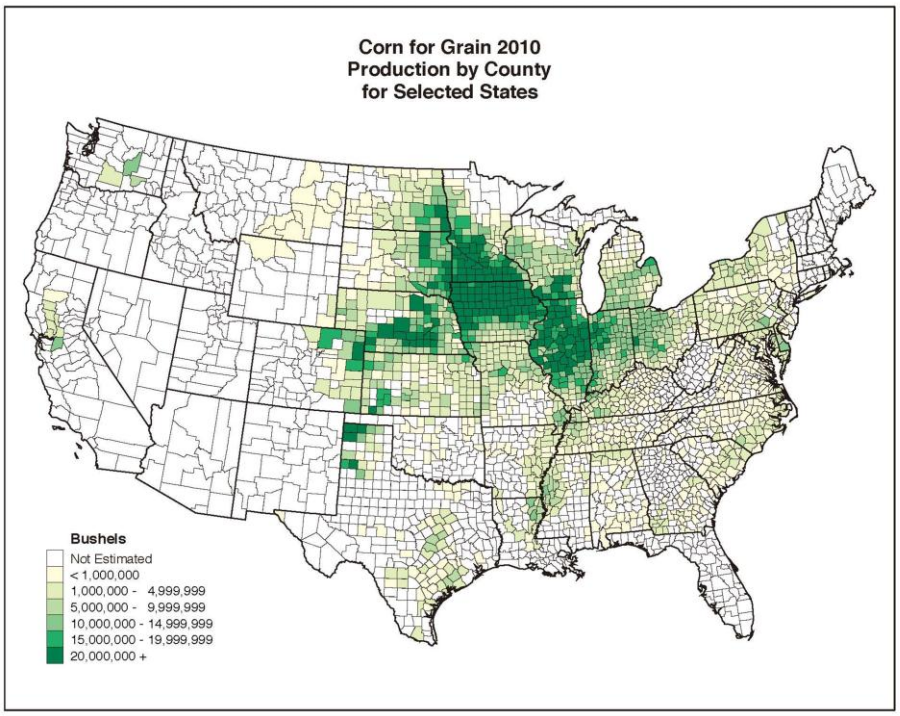
The lower chart described above was published at the same time as the upper chart, and it shows the world trend of imported coarse grains. The bottom part, indicating exports to East Asian countries including Japan, has not changed much, but the increasing demand is obvious in Africa, the Middle East 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.

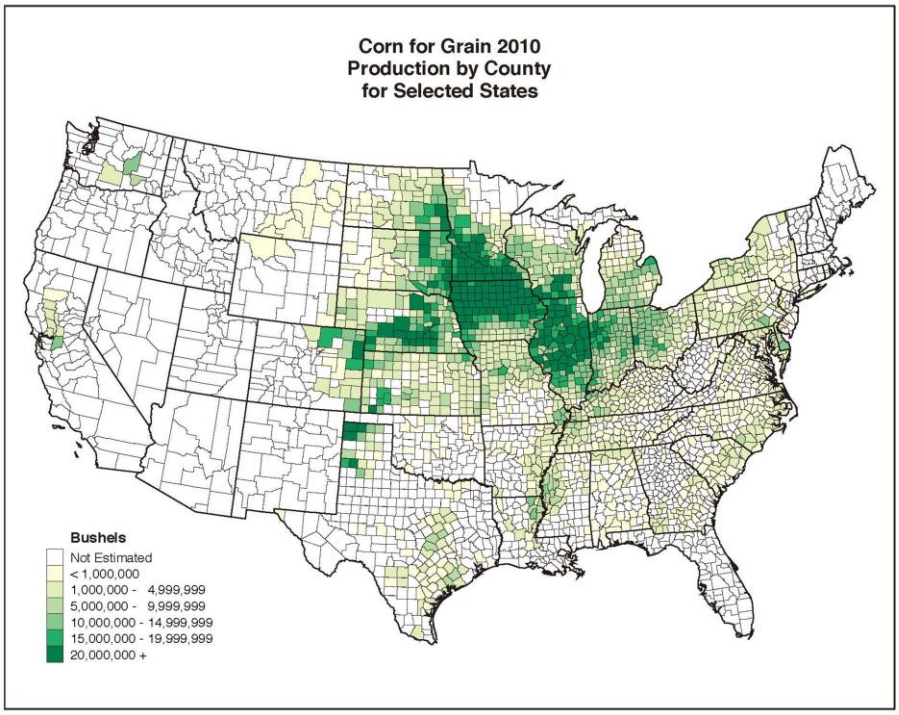
Imagine a line in the middle of the map from top to bottom. To the east of that line, nearly all the 25 states have NCGA branches, the only exceptions being the New England states, Florida, New Jersey, West Virginia and Delaware. In the states where there is no NCGA presence, individual corn growers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

U.S. geographical characteristics for producing grains

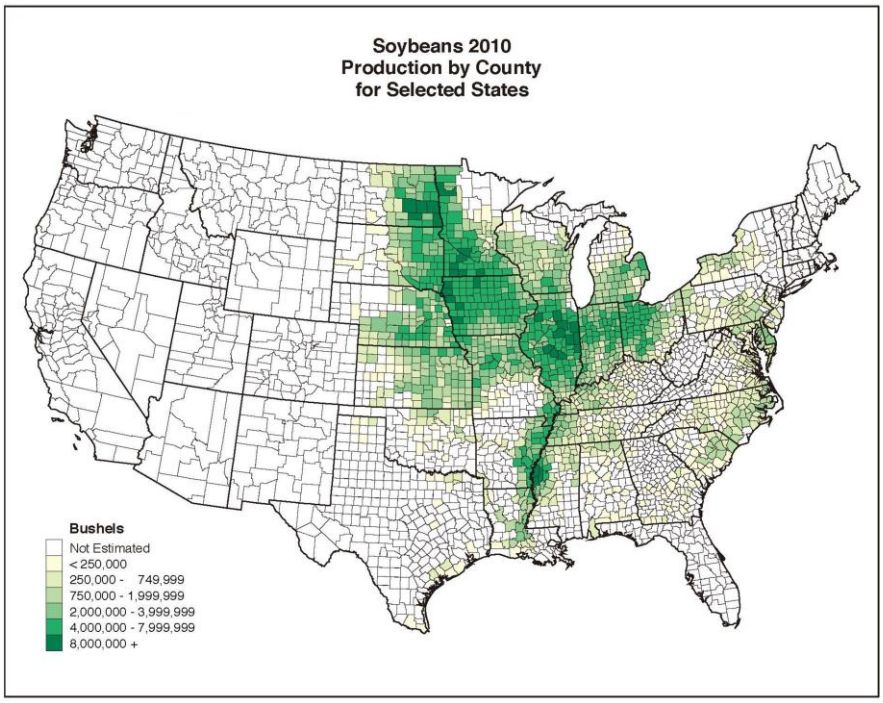
Let's take a look at where the U.S. grain is mostly produced. The charts below show corn at the top, soybeans in the middle and sorghum at the bottom, and you can see how widely grain is produced around the U.S. The charts on the page after next show spring wheat at the top, winter wheat in the middle 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

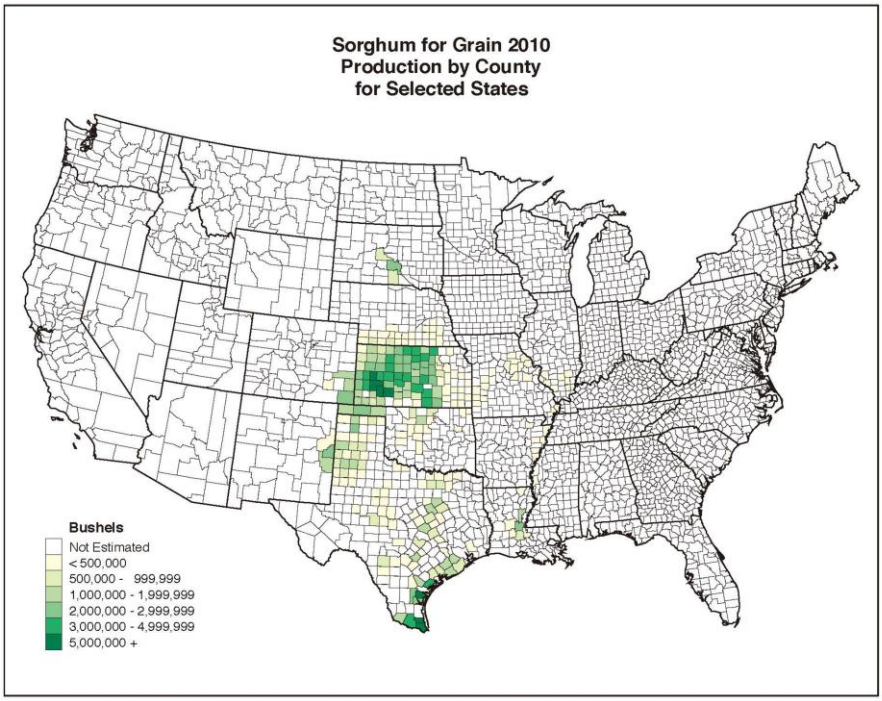


U.S. Soybean Production in 2010



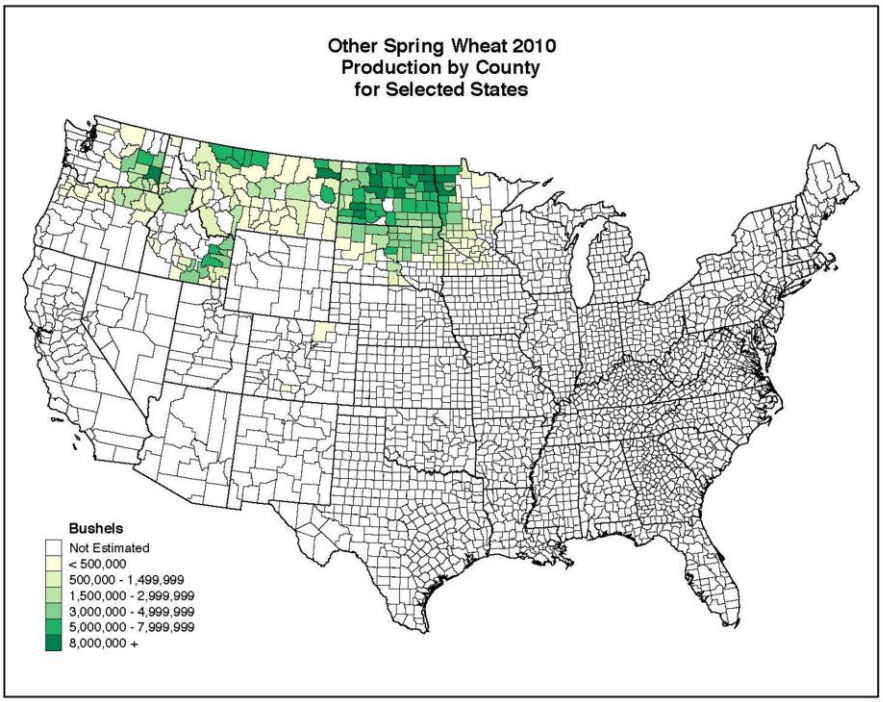
Source: The USDA data

U.S. Sorghum Production in 2010

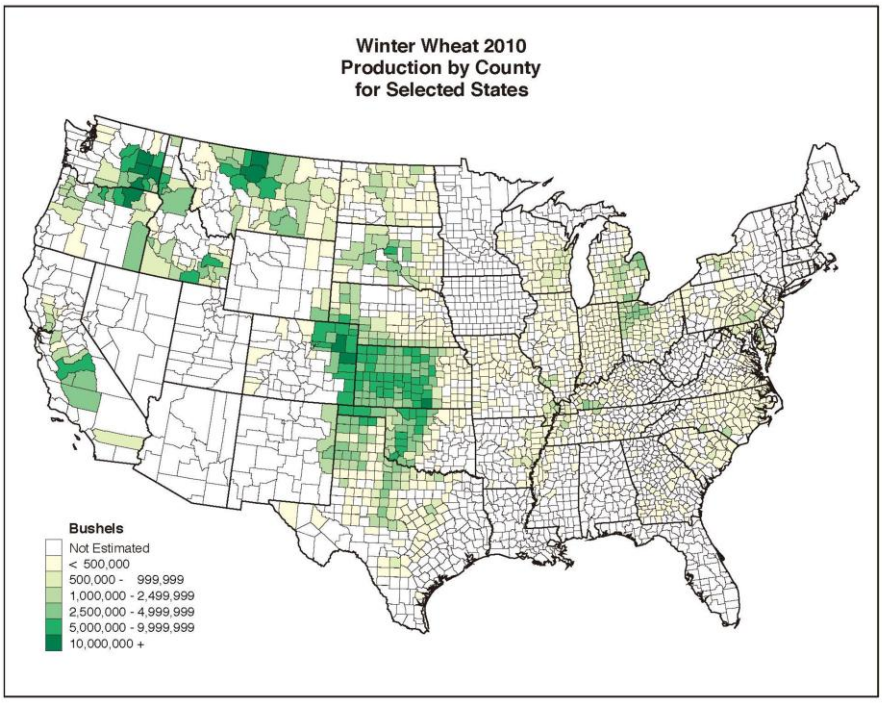


Source: The USDA data

U.S. Spring Wheat Production in 2010



U.S. Winter Wheat Production in 2010



Source: The USDA data

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).[1] This is another record low, and the first time it dipped under 40 percent since it was 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

[1]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

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.[2] 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 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

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

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

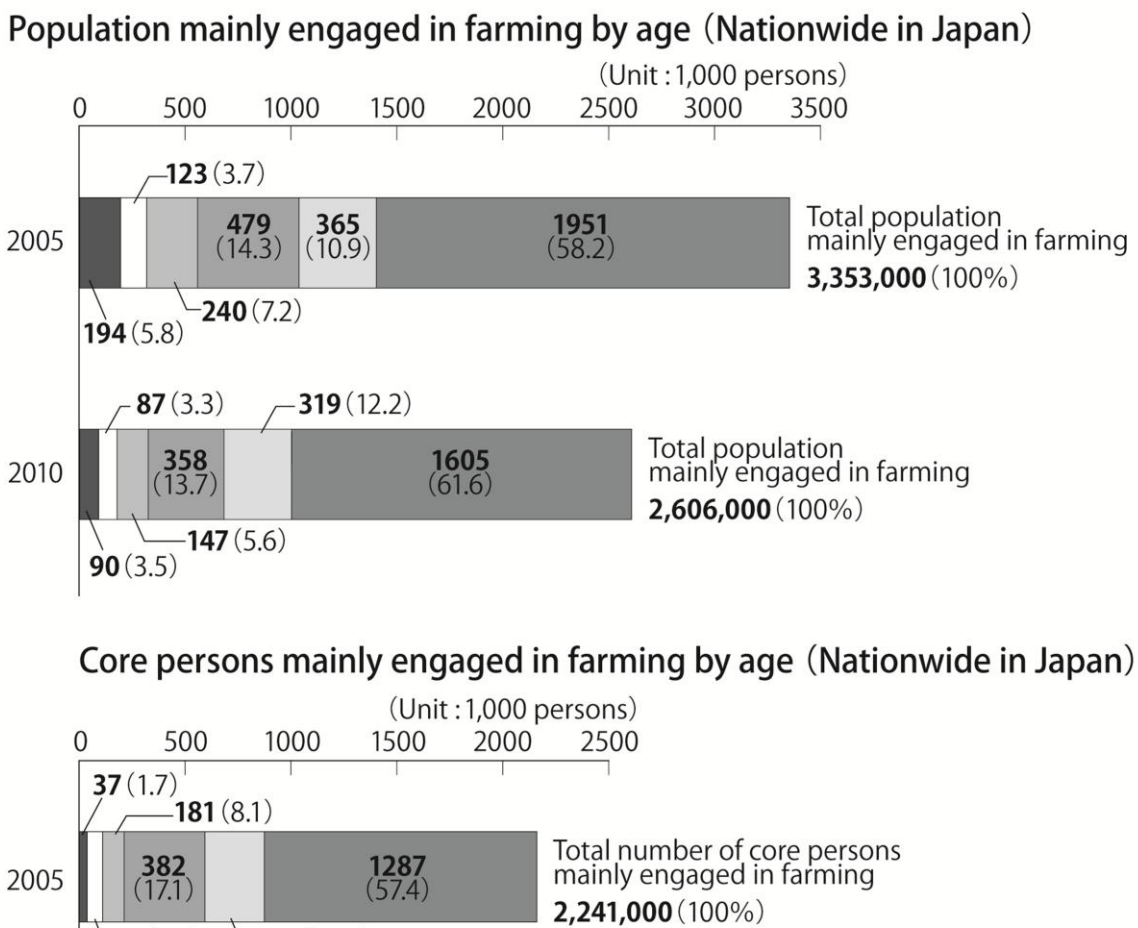
2,051,000, which also represented a decrease of 189,000 (8.4%). Declining population not only affects the farming population, of course, but the overall Japanese demographic is aging throughout society.

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.

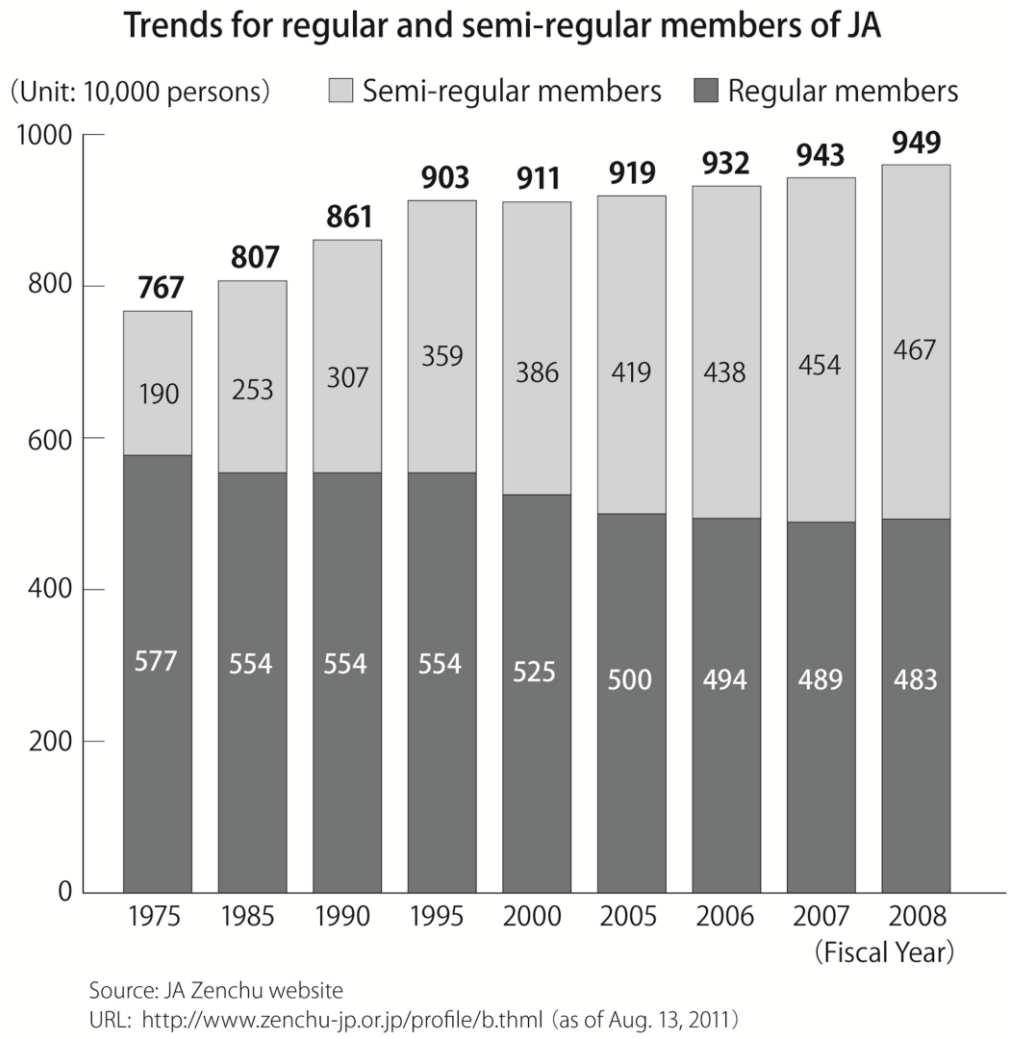
If you compare these figures with those in 2005, it is obvious that the demographic has been steadily aging, and the group of age 30-50, the premium workforce declined greatly from 254,000 (11.4%) in 2005 to 186,000 (9.0%) in 2010.

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.[3]

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.[4] 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

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

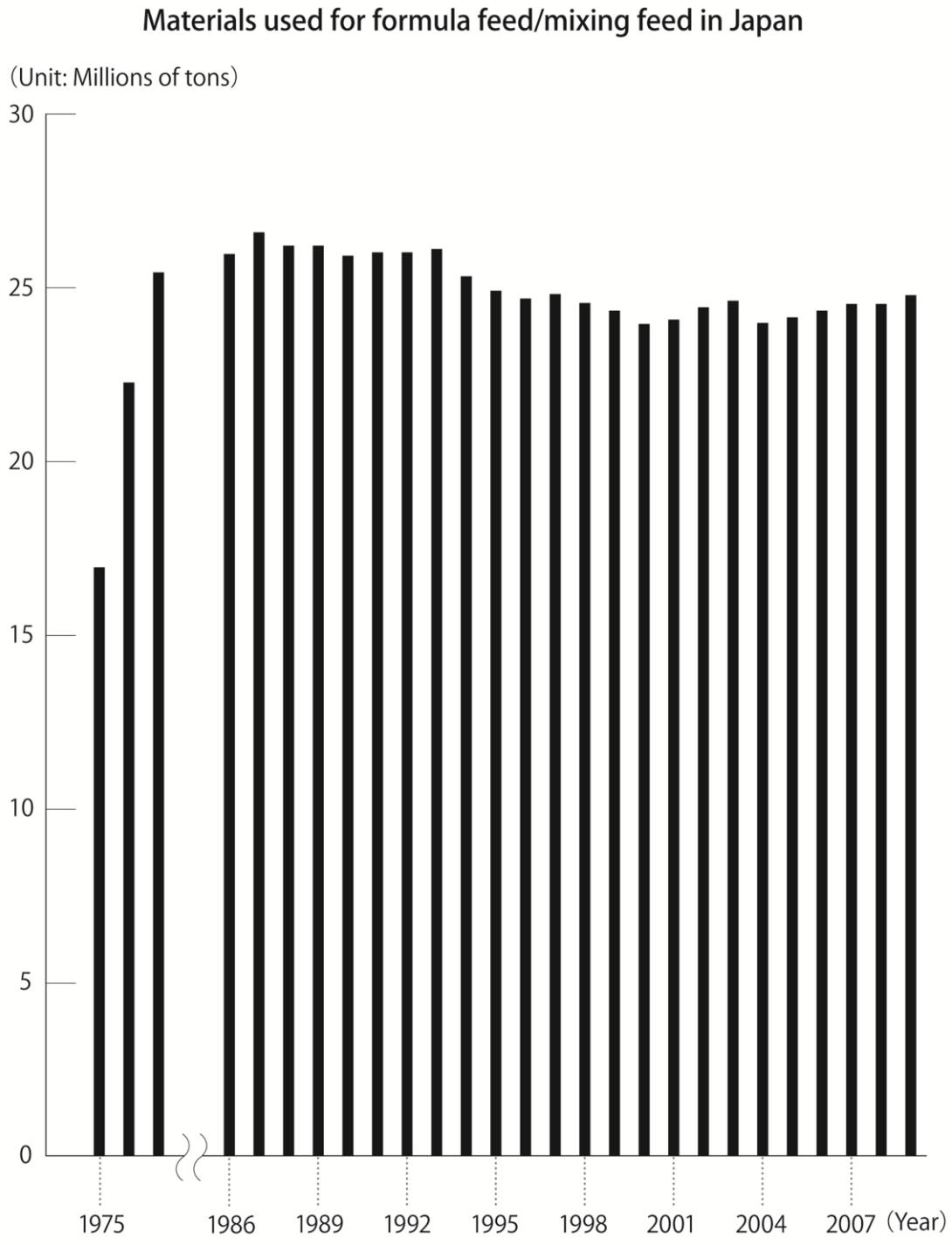
country's livestock production, which was devastated by World War II, in order to secure the food supply for the population.

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[5]. 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[6].

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

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



Source: Data provided by Feed Supply Stabilization Organization compiled by the author

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[7].

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

[7]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.