Unit 1-4: Agriculture and Farm Economy in Japan

Chapter 1 Introduction

In this unit, Chapter 1 will summarize chronologically the transitions in traits of agriculture and the agricultural policies in Japan in the past 60 years since World War II. Chapter 2 will examine the changes in rural life and how it gradually urbanized in these past 60 years. Furthermore, Chapters 3 and 4 will analyze the status of agriculture and the trends of farm economy based on the references of long term (from 1960 to the present day) statistics materials from the Annual Report on Food, Agriculture and Rural Areas in Japan. And finally in Chapter 5 we will describe the agricultural structures in the future.

1.1 Traits of Japan's Agriculture

Japan is located from north to south in the east of the Asian continent with the Sea of Japan in between. The climate in most parts of the archipelago is in the temperate zone but the islands cover from subarctic to subtropical zones. In addition, the rainfall is abundant and as the geography is complex, a diversity of agriculture developed in each region. The land mass is small but mountainous and the total arable land is less than 13% where more than 40% is intermountain areas. There are many slopes and the management scale for farming is small. As rice paddies need to be horizontal to accumulate water, terrace rice paddies are made on the slopes. Where rice paddies were difficult to cultivate, fields were formed and stone walls and banks were made to ease the slopes and to prevent soil erosion to make it easier to work on the land. Agriculture and rural areas, which was cultivated by our forefathers for long periods, were the food production areas and functioned for public benefits to protect the national environment. It played important roles in preventing soil erosion and flooding of the lower current areas, and played a part in our lives by purifying water and groundwater increment.

Japan's agriculture production used to focus on rice cultivation but presently with the improvement in cultivation and breeding technologies, it has improved its production greatly, focus has shifted to vegetables, fruit, and livestock as well as rice. Productions in flowers and plants have also increased.

Table 1.2 Climate and Land Conditions and Process in the Historical Development in Japan

Region	Japan	The US and Austria
Climate conditions	High temperature and rainy in summer (Asian monsoon climate)	Mild and relatively low rainfall
Land conditions	The land mass is small with many slopes and the arable land in the total land mass is low	The land mass for arable land is high
Historical development	a) By making us of the small amount of arable land in a temperate but humid climate, rice paddies develop as it was a source of stable food production and could be cultivated continuously b) A village based agriculture developed as it was difficult to adjust water use as each individual farm was small in scale	a) Settlers started up rough and large scale mechanical agriculture using little human labor as the land was cheap and the labor force was small b) Specializing in crops and with the development of large scale farms, export type agriculture of crops developed
Main products	Rice, vegetables, livestock	Wheat, corn, soy beans, cattle

Source: *New Edition Basics of Agriculture* Rural Culture Association 2003

1.2 Transitions in Agricultural Policies After World War II

The realms of agricultural policies can largely be divided into policies for production, rural areas and farmers. However, depending on the policy issues, the policies developed in wide areas such as policies for arable land, distribution, and finance. The policy measures varied such as supplementary and financing measures, legal regulations, and administrative guidance. In this chapter we would like to focus on the transitions in production policies in the improvement operations in agriculture and rural areas.

During the first stage after the Second World War II (1945 to 1959), the initial obligation was to increase food production and an agricultural policy centered on production was implemented. The policies were concentrated on dam constructions for irrigation and drainage operations, head works, machines to pump and drain water, improvement in main water routes, development in arable land and reclamation. Operations were aimed at improving and increasing production.

The second stage from 1960 to 1969, which is after the Agricultural Basic Law was enacted in 1961, while revising the production and cost policies focused on rice, our production policies pursued compliance in increasing production in optional and expanding crops other than rice such as

vegetables, fruit, livestock, etc. Also, to improve the productive system based on a two track expansion, machines were introduced into agriculture to improve labor production. On the other hand, industrialization developed around heavy chemical industries during this period and the population in rural regions flooded into the urban areas. The labor in rural areas weakened with the declining and ageing population. The increase in income with the rapid economic growth expanded the economical divide between the agricultural and industrial areas which created new changes in food demand. Food consumption in rice, the staple food, decreased while animal products increased. Furthermore, free trade in imported agricultural products was promoted when the trade balance changed to a surplus. During this period, farmland consolidation and improvements in rural roads were implemented and with the transition to multipurpose rice paddies and by enlarging farmlands that were able to use machinery, the labor production improved and the weight shifted to operations that would improve agricultural infrastructures. The development of arable land on forest land and the wilderness was focused on livestock, vegetables and fruit to expand the options of products to crops other than rice.

The third stage, from 1970 to 1999, was when Japanese economy entered a stable period from the rapid economic growth and the industrial structure that was focused on the heavy chemical industries in the second stage shifted to a service oriented industry in the third stage. The tax proceeds showed slow growth and the increase in corporate investment as a measure to boost the economy resulted to a runaway growth in deficit government bonds and the financial deficit expanded rapidly. The oversupply of rice became the major policy issue as the government bought rice under the dietary management system and the expenses used in the price policy by increasing the price in rice covered approximately 50% of the agricultural budget in 1970. To dissolve this policy, the government implemented a long term crop rotation policy with the structural fix in oversupply of rice as a premise, they enacted a policy to curb prices focused on the reduction of food management fees as a financial crisis policy. Moreover, life environment improvement operations were promoted such as comprehensive rural improvement operations, irrigation operations in agricultural villages, comprehensive improvement operations in intermountainous areas. With the introduction of industries in rural areas, they are positively promoting farm retirement and have executed policies to support management to modernize agriculture, to nurture management systems that can secure income similar to other industries, and have a more mobile perspective by purchasing and renting rural land.

Table 1.1 Trends in Agricultural Policies in the Past 60 Years after World War II

		1945 First Stage	1960 Second Stage	After 1970 Third Stage		2000 Present
Main Laws		Agricultural Land Act	Basic Law on Agriculture	Agricultural Land Development Act	Act to promote use of agricultural land, Act to promote and enhance basic management	Basic Law for Food, Agriculture and Rural Areas
Objectives of Agricultural Policies		Increase food production	Rectify income disparities Selective expansion of agricultural production Improve agricultural production base and distribution		Improve the rate of self-sufficiency Further facilitate market principle Improve living environment of rural areas	Stable food provision Exert multi-phased function Sustainable development of rural areas Promote rural areas
Main Policies	Farmers	Created independent farmers	Nurturing self-supporting farm households	Nurtured mid-sized farm households and certified farmers		Certified farm households and collective agricultural management
	Land	Restricted transfer of land titles	Expand the size of farms through trades Allocated land based on land improvements	Expand the size of farms by leasing	Consignment of farm work Expand the size of farms by leasing	
	Capital	Engines and motors	Compact land cultivating machinery	Collective shipment facilities and binders	Rice planter, combine, tractor	
Historical Background		Lack of food and a surplus of labor	Rapid economic growth and outflow of labor to urban areas	Sprawling of rural areas, oil shock, and food crisis Excessive US basic direction	Rapid aging of farmers, trend in liberalization of agricultural produce, growing awareness in people towards the environment and safe consumption	

Ratio of project subsidy for agriculture and rural areas development

The ratio of project subsidy for agriculture and rural areas development from the state is defined by the guideline although it varies depending on the type of projects or works. The basic idea is that each prefecture covers the remaining of the national subsidy and others are covered by each municipality and recipient farm families. As a general rule, the national treasury covers two thirds if it is a direct national project except for major projects such as dam construction of which seven tenth cost is paid by the state. As for supporting projects, basically, half of the cost is covered by the national treasury.

Example

Project name	State	Prefecture	Municipality	Farm family
National project of irrigation and drainage Dam	70.0%	25.0%	5.0%	–
Head works	2/3	17.0%	10.4%	6.0%
Prefectural project of irrigation and drainage Water way	50.0%	25.0%	10.0%	15.0%
Prefectural project of farm field improvement Land improvement	50.0%	27.5%	10.0%	12.5%

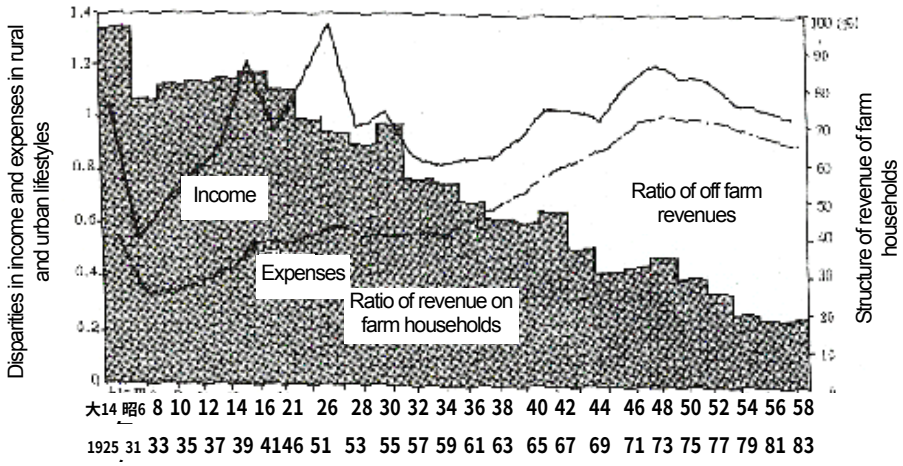
Chapter 2 The Urbanization of the Rural Lifestyle

2.1 Disparities in income and expenses between urban and rural lifestyles

To upgrade the standard of living in the rural areas to an urban level has been a perennial issue. To correct the income disparity between agriculture and industries during the agricultural policies based on the former basic law on agriculture were also based on the same objectives.

As seen in Figure 2.1, the recession in rural areas in the 1930s drove the living standards of farm households into a critical situation. The income of farm households during this period was half the income of families living in urban areas and their expenditure covered only one third of those living in the cities. During and after the Second World War, there was a period where the income of a farm households was the same as a family living in the urban areas but as soon as the rapid economic growth began, the disparity widened again. It was only after the 1960s that the income between rural and urban families stabilized into an equilibrium state.

Figure 2.1 Disparities in Income and Expenses between Urban and Rural Lifestyles (from 1920 to 1980)



Note: 1. The disparities in income (expenses) of rural and urban areas – the income (expenses) of farm households/the income (expenses) of urban demand

2. The housekeeping expenses of farm households are in cash and do not include targets for on-the-spot household finances

3. The ratio of revenue on farm households is the ratio of revenue on farm households that covers the total revenue of the farm household

Source: Department of Statistics, Ministry of Internal Affairs and Communication *Japan Statistical Yearbook Fourth Edition* Japan Statistical Association 1988

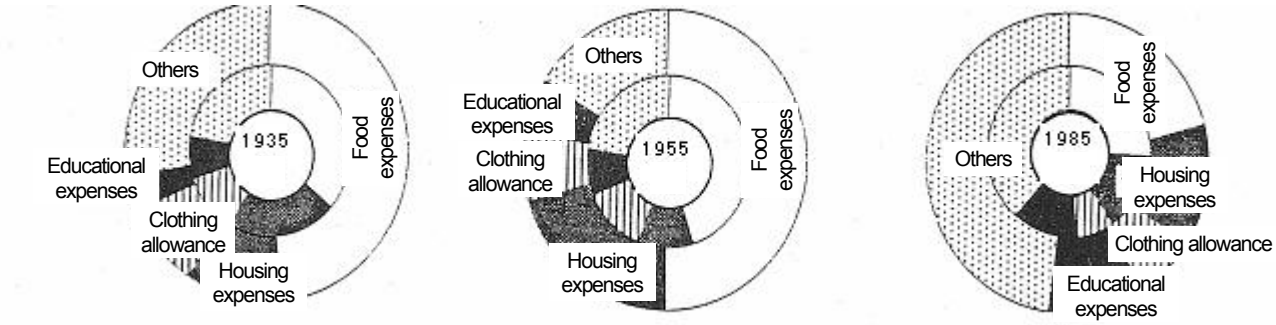
The revenue ratio for total farm households that covered the total revenue of agriculture radically dropped after 1965 with the ratio cutting into 20% at the end of the 1980s. However, the off farm revenues were the only revenue that did not reach the income levels of urban households. Even though the rectification of income disparities depended on part time jobs, this could not be realized without agricultural revenue.

On the other hand, the expenses of farm households after the Second World War were slightly

less than 60% of the urban areas in the first half of 1945 to 1955. Prior to the rapid economic growth, the rural economy still left traces of self-sufficiency. The expenses of farm households increased during the rapid economic growth where it leveled off with urban households in the latter half of the 1970s.

Therefore the living standards of farm households improved drastically. As can be seen in Figure 2.1.2, until 1955 almost half of the meager household expenses were spent on food. By 1985, the figures dropped to 25% whereas the ratio on educational, culture/amusement, entertainment and other expenses began to cover a bigger amount.

Figure 2.2 Comparing the Structure of Household Expenses between Urban and Rural Households (Outer – rural, Inner – urban)



Note) 1. The housing expenses include expenses for furniture, electricity, gas, and water expenses. Also, educational costs include culture and amusement expenses.

2. The farm households in 1935 include on-the-spot household finances.

3. The urban areas are cities with a population of over 50,000 between 1955 and 1985 of wage earning household workers

Source: The statistics for farm households are from the Ministry of Agriculture and Forestry *Agriculture Economic Survey* and the statistics for urban households is from the *Family Income and Expenditure Survey* by the Department of Statistics of the Cabinet Office in 1935, the *Family Income and Expenditure Survey* by the Department of Statistics of the General Administrative Agency of the Cabinet in 1955, and the *Family Income and Expenditure Survey* by the Department of Statistics of the Ministry of Internal Affairs and Communications in 1970 and 1985.

2.2 Urbanizing eating habits on farm households

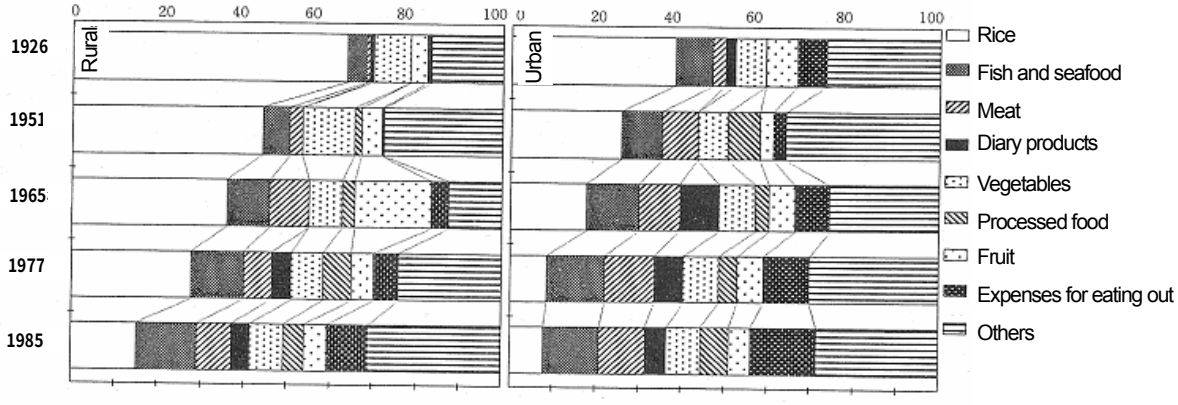
As stated previously, traits of self-sufficiency remained in the farm household life until 1950s. This was markedly apparent in their eating habits. Here is a description of the transitions particularly in dietary habits with comparisons of urban households.

Under a landlord tenant system before World War II, farm households, at times, had to purchase rice to pay the tenant rents. Furthermore, rice crops covered a large percent in the meager food expenses as the farmers needed to eat large amounts of rice to generate power for their heavy labor. However, it was not possible for them to consume a sufficient amount of rice. According to the 1938 *Survey of Lifestyles in Rural Hamlets* (Department of Economical Rehabilitation, Ministry of Agriculture and Forestry) 85% of farm households mixed rice, oat, and other wheat while 22% of farm households used less than 50% of rice in their meals.

Rice was the center of their eating habits even after the Second World War which continued until

1995. However, their eating habits went through rapid transitions in the middle of the 1960s as the percentage of fish, seafood, and meat in their diets increased. Also there were more opportunities to eat out in restaurants. By 1962 the consumption of rice per person in a farm household was less than 100 kilograms per year, showing a breakaway from a rice-oriented meal. By the end of the 1980s it can be said that their eating habits ultimately urbanized as the items purchased with their food expense were similar to that of urban households. (Figure 2.3)

Figure 2.3 Comparing the Structure of Food Items within the Food Expenses in Rural and Urban Area (outer – rural, inner – urban)



Note) 1. Since the prefectures and Hokkaido were recorded separately in 1951, the figures of the number of household surveyed is a weighted average.

2. The total average of cities in 1951 is the average of a city with a population of over 50,000 from 1965 to 1980.

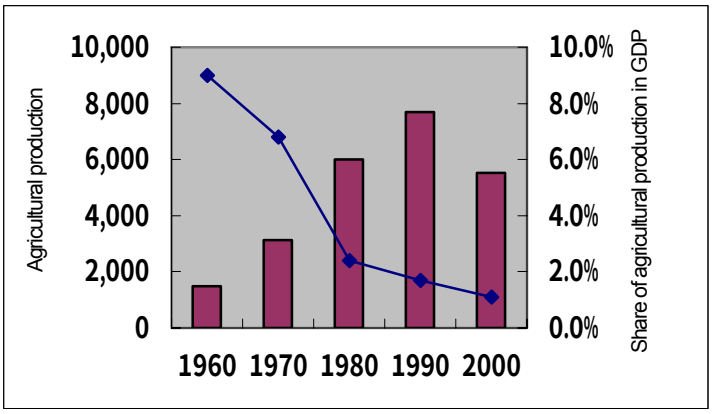
Source: The figures for the rural areas in 1926 are from the *Family Income and Expenditure Survey for Farmers* by the Department of Statistics, Cabinet Office; from 1951 to 1985 *The Survey Report on the Cost of Living for Farm households* by the Ministry of Agriculture and Forestry. The figures for the urban areas in 1926 is from the *Family Income and Expenditure Survey for Wage Earners and Laborers*; from 1951 to 1985 is the *Japan Statistical Yearbook Fourth Edition* from the Department of Statistics, Ministry of Internal Affairs and Communications Japan Statistical Association 1988 (the actual reference is the *Family Income and Expenditure Survey* the Department of Statistics by the General Administrative Agency of the Cabinet.)

Chapter 3 The Positioning of Agriculture in the National Economy

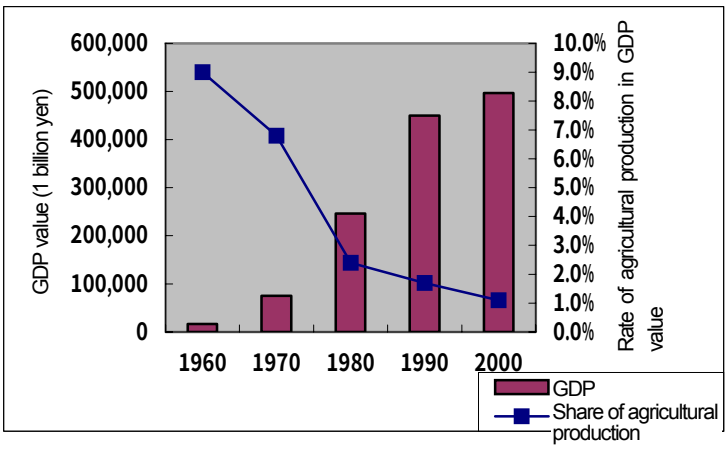
3.1 Agricultural production in gross domestic product

There is a trend that the agricultural production in GDP value is declining year by year. In 1960 the total domestic production was 16,681 (1 billion yen) and the agriculture production covered 9.0%. However, in 2000 the coverage rate declined to 1.1%.During the forty years from 1960 to 2000, GDP was 496,606 (1 billion yen) and the agricultural production jumped approximately 30 fold during these forty years. The agricultural production was turning upward until 1990 with 7,701 (1 billion yen), however, with the sluggish prices for agricultural products, it declined to approximately 70 percent in 2000 to 5,522 (1 billion yen).

Figure 3.1 The Agricultural Production and Gross Domestic Product



Source: Statistics of Annual Report on Food, Agriculture and Rural Areas in Japan, FY2005

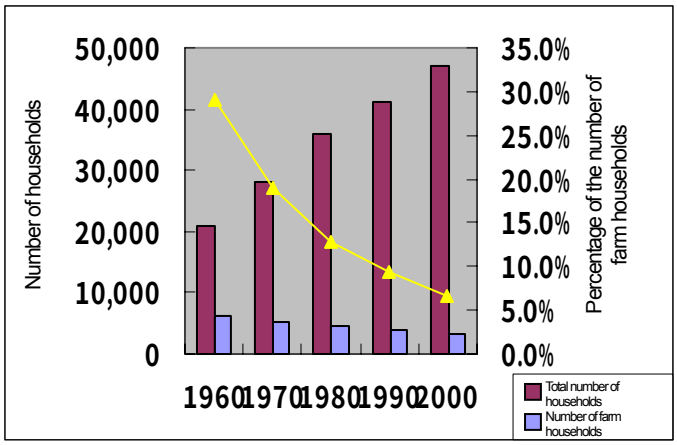


Source: White paper of food, agriculture and rural areas, 2005

3.2 Transitions in the total number of households and the percentage of the number of farm households

With the growth of nuclear families, the total number of households in Japan is increasing yearly. However, there are a number of issues related to this trend such as the advance of aging farmers on farm households, the declining population in the rural areas, the lack of successors, and the yearly decline in the number of households. In 1960 there were 6,057 farm households but the number halved to 3,120 households in 2000. The number of farm households that cover the total number of households was approximately 30% forty years ago, but it has decreased to approximately 6% in 2000.

Figure 3.2 Transitions in the Number of Farm households and the Total Number of Households



Source: Annual Report on Food, Agriculture and Rural Areas in Japan, FY2005

3.3 Budgets related to agriculture

The following table is a summary of the annual agricultural budget that is covered in the general accounting in the national budget. From the 1970s to the 1980s improvement in agricultural production was pursued with new irrigation facilities based on the land reform activities and projects in farm land consolidation. Shared use of agricultural machinery and collective shipping facilities were promoted through subsidiary projects of these structural reforms. Recently not only infrastructural development for agricultural production but environmental development for rural lifestyles are also being promoted but the percentage of agriculture-related budgets in the national budget general accounting is declining year by year.

Table 3.1 Transitions in Agricultural-Related Budgets in the National Budget

Unit: 100 million yen

	1960	1970	1980	1990	2000
General accounting national budget	17,652	82,131	436,814	696,512	897,702
Agricultural-related budget	1,386	8,851	31,084	25,188	28,742
Coverage	7.9%	10.8%	7.1%	3.6%	3.2%

Chapter 4 Fundamental Indicator of Agricultural Economics

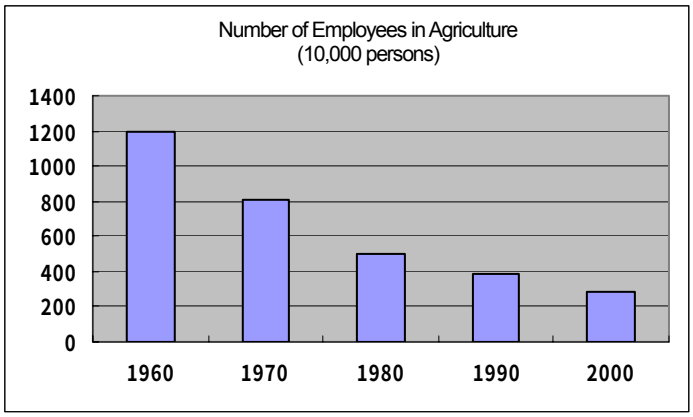
4.1 The number of persons engaged in agriculture

There were approximately 12 million people in 1960 who were engaged in agriculture. However after the rapid economic growth, the number of farmers declined yearly as the labor force in the rural areas flowed into the urban areas. In 2000 there were only 2.88 million farmers which is a 24% decline rate when the figures given in 1960 is set to 100.

There is a recent trend where an increase in newly employed people in each age segment is emerging. In 2003 there were 80,000 persons engaged in the agricultural industry (Figure 4.2) among

which approximately 12,000 were new recruited young farmers, covering 14.8% of the total number of employees. This figure includes the new 2,200 graduates. However, over 50% of the new recruiters that come for advice to the employment consulting center that are located all over Japan, are under 39 years old. Furthermore, teenagers and adults in their 30s cover most of the job seekers who want to experience agriculture, forestry and fisheries temporarily.

Figure 4.1 Transitions in the Number of Employees in Agriculture



Source: Annual Report on Food, Agriculture and Rural Areas in Japan, FY2005

Table 4.1 Transitions in the Number of Newly Recruited Farmers

Unit: 1,000 persons %

	Total number				
		Under 30 years old (newly recruited young farmers)	40 to 49 years old	50 to 59 years old	60 to 69 years old
1995	48.0	7.6	6.5	9.3	24.6
2000	77.1	11.6	6.6	14.5	44.8
2001	79.5	11.7	8.6	16.2	43.0
2002	79.8	11.9	8.8	16.7	42.5
2003	80.2	11.9	9.0	17.0	42.3
(Percentage)	(100.0)	(14.8)	(11.2)	(21.2)	(52.7)

Note) 1. The new recruited farmers are the total number of persons whose employment status changed from student to agriculture (newly graduated farmers) and employed to agriculture (those who left their jobs to become farmers disregarding whether they worked at home or are farming returners.)

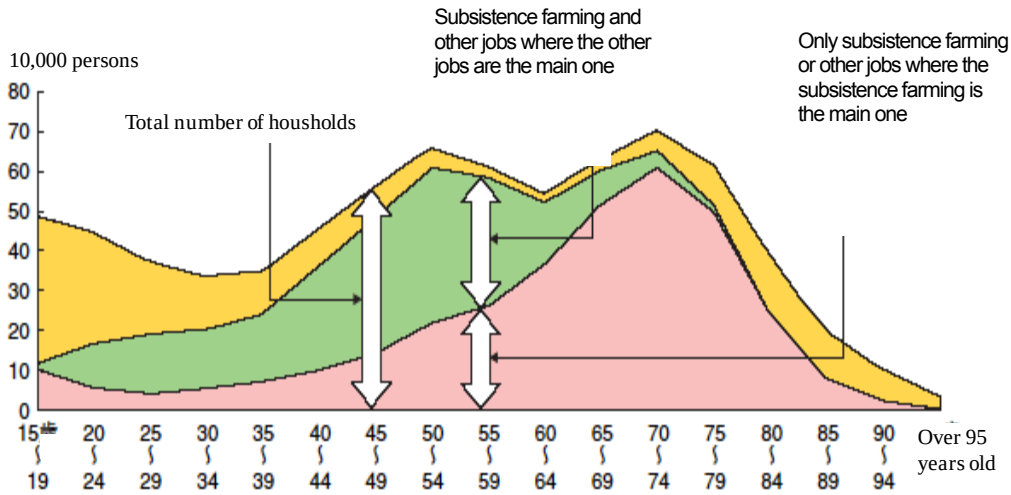
2. The newly graduated farmers include those who are under 39 years old. Newly graduated farmers and the under39 job leavers together are called newly recruited young farmers.

Source: Ministry of Agriculture, Forestry, and Fisheries *Agriculture and Forestry Census* and *Survey on the Structural Agricultural Census*

4.2 Trends in agricultural workers

The distribution of age in the farm household shows a high number of farmers are 50 to 54 years old and 70 to 74 years old. Secondly, the employment of farm households shows that there are many farmers aged below 54 who are in subsistence farming with other part time jobs where the other jobs are mainly done by the household members. On the other hand, there are many farmers over 60 who are in subsistence farming only or are in subsistence farming with another part time job where the subsistence farming is done mainly by the household members. This shows that there are disparities in the employment configurations by age.

Figure 4.2 Number of Farm Households Members by Age (2005 Total Male and Female)



Source: Ministry of Agriculture, Forestry and Fisheries Agriculture, Forestry, and Fisheries Census

In recent years, the social and economic effects of the mass number of retiring baby boomers,* who summit the population structure of Japan, is attracting attention. Regarding the farm households, there are many farmers from 50 to 54 years of age. When the number of baby boomers farmers is included, those who are 55 to 59 year old are not a leading majority. Therefore it is said that the baby boomers will not contribute much to the increase of households focused in subsistence farming after the baby boomers retire from the farm households when comparing to the contribution given by the 50 to 54 year old farmers. In the future, the trend in the number of farmers who are middle aged or elderly who can take part in the agricultural population will be focused on the movements of the present 50 to 54 year olds that cover the majority of farm households. Focus will be placed on the movements of the returnees of former farmers that were not working at home. Furthermore, in the long run, there is concern that there will be a lack of agricultural labor with the effects of the declining number of middle aged farm households who are under 50 years old.

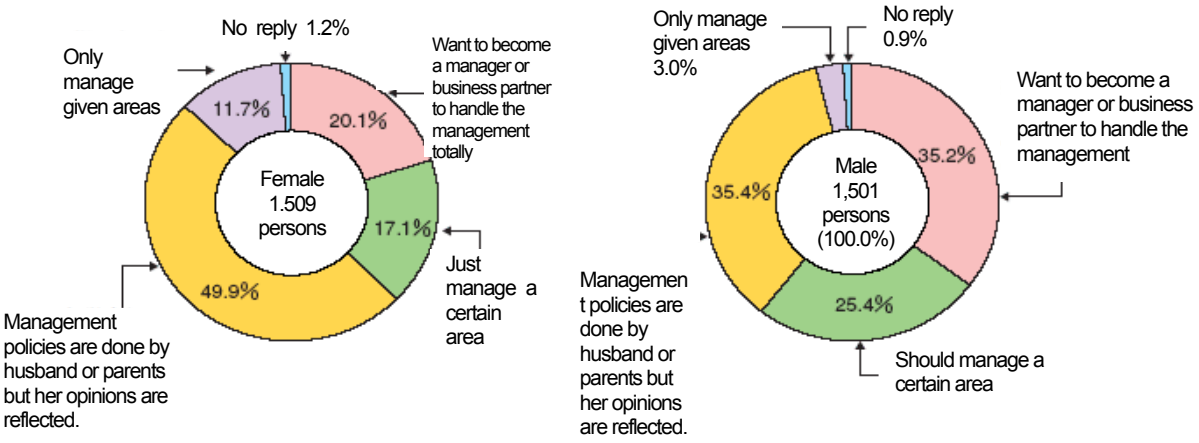
Baby Boomers

The baby boomers are the generation that was born from 1947 to 1949. As of October 1, 2004 it is estimated that there are 6.76 million baby boomers. Sakai Taichi named this generation the baby boomers as there were a large number of babies born directly after the Second World War.

4.3 Trends in female farmers (Female farmers who play important roles in agricultural management and regional society)

Female farmers account for 46% of core farmers (2005). These female farmers are playing an important role in agricultural production, regional society as well as in agricultural management. The number of certified female farmers, as leaders in agriculture, is increasing recently where focus is placed on complex management. There were 4,125 certified female farmers as of the end of March 2005. Moreover, 70% of the farm households with female farmers are responsible in a certain area particularly in garden farming, rice cultivation, and cultivating vegetables. Furthermore, regarding agricultural management, 40% of the female farmers want to manage special areas or deal with complete agricultural management as a manager or a business partner. Sixty percent of the male counterparts believe that females should do so.

Figure 4.3 Trends in Female Farmers in Agricultural Management

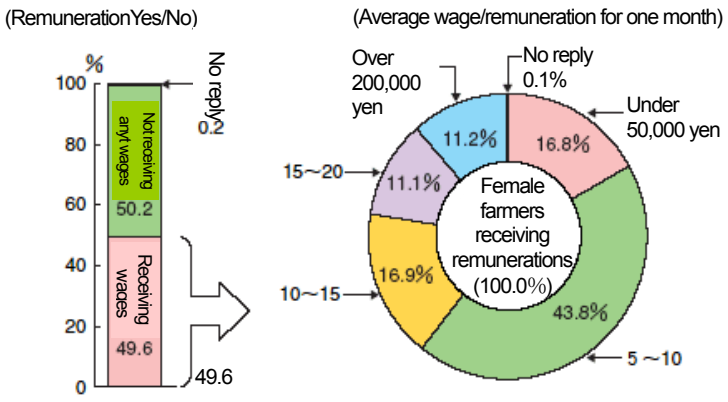


Note: Questionnaire to 3,000 female farmers and spouses respectively in Japan (response rate was 50.3% and 50.0% respectively) Source: Ministry of Agriculture, Forestry, and Fisheries *Survey Regarding Gender Equality in Farm households* (published on March 2005)

On one hand although there are aspirations by female farmers to participate in agricultural management, there are only 50% of female farmers receiving wages and remuneration for the farming among which over 60% are receiving less than 100,000 yen. Also, there is a growing trend in the number of females who are directors of agricultural committees and agricultural cooperatives but the percentage is still low. Furthermore the participation in responsible positions in the regional society is not adequate. Comparing the number of working hours between the female farmers and their spouses, the number of hours the spouse spends in agriculture is longer but the total number of working hours for female farmers is longer when including

housework, child care, and nursing.

Figure 4.4 Remuneration of Female Farmers



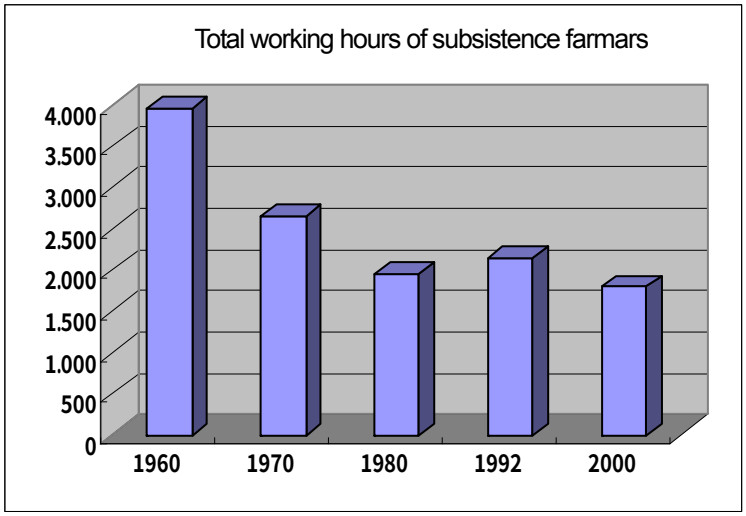
Source: Ministry of Agriculture, Forestry, and Fisheries Structural Survey for Agricultural and Regional Employment –Female Employment Structure and Survey in Management Participation (published on October 2003)

The issues for females when participating in management positions are that they have no time to participate in management because of the large work load in the house, child care, and nursing, as well as the lack of opportunities in acquiring technical knowledge and studying management issues. Based on gender equality and to promote participation of female farmers in management and in the regional society in the future, it is important to enhance measures in promoting the conclusion of family management agreements, expand the number of certified female farmers, promote females to agricultural committees, support training and child care, and creating a network structure to increase and dispatch information to female farmers.

4.4 Transitions in working hours

The figure on the right shows the transitions in the total working hours per person. In 1960 the number of total working hours per person was approximately 4,000 hours. Presently the number of total working hours per year is 2,000 hours. This shows how labor intensive farming was about 40 years ago. In Japan, prior to the land reforms, farming was mainly manual labor without the use of machines but with the introduction of a

Figure 4.5 Transitions in Total Working Hours per Person



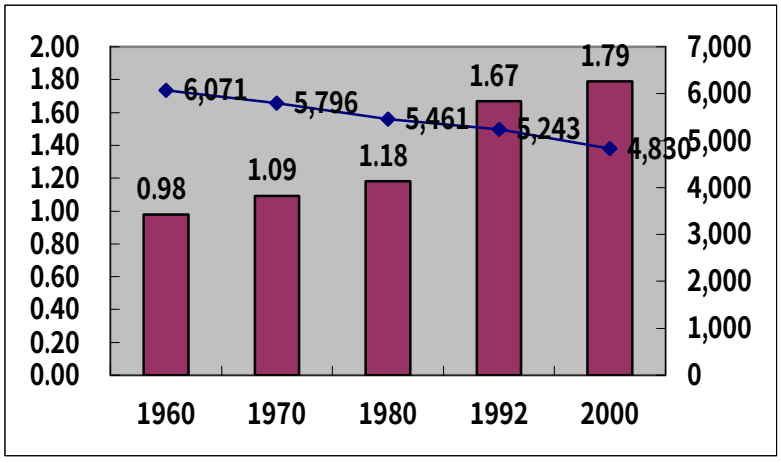
Source: Annual Report on Food, Agriculture and Rural Areas in Japan, FY2005

fundamental infrastructure of farms and mechanization, the number of hours spent on farming decreased significantly. There used to be marshy areas with bad drainage conditions where rice was cultivated in water that reached the farmer's waist. Today, the working hours have been reduced drastically with town redemarcation projects. However, the progress in mechanization has inhibited agricultural land-use. After the establishment of the former agricultural basic law, there were plans to stabilize agricultural management by building up land use with large scale farm households but the mechanization of agriculture made it possible for individual farmers to take on part time jobs at the same time. Therefore the build up of land use in Japan has not been very successful.

4.5 Transitions in the structure of land use

The graph below shows the arable land management per farm household and the total arable land in Japan from 1960 to 2000. In 1960 there were 6,070,000 ha of arable land in Japan. However with an increase of converting agricultural land and land with bad harvest, the total arable land in 2000 decreased 20% to 4,830,000 ha. On the other hand, the arable land management per family from 1960 to 2000 increased from 0.98 ha to 1.79ha, a 1.8 fold increase. The number of farm households during these past 40 years has declined but at the same time there has been major changes in the use of land with urbanization flowing into rural areas. The land is being incorporated as urban-designated areas and there are land development projects for megamall shopping centers and subhousing of farms. On the other hand, farm households have been securing agricultural revenue by expanding their management scale by transferring the land to farm land consolidation, leasing farm land, and receiving and consigning farming jobs.

Figure 4.6 Transitions in Arable Land and Arable Land Management Per Farm Household



Source : Annual Report on Food, Agriculture and Rural Areas in Japan, FY2005

4.6 Transitions in Agricultural Revenue

Agricultural revenue (*1) was in the increase after 1960 but in recent years it has changed to roughly 1.1 to 1.2 million yen or thereabouts. However, the management expenses has continued to increase since 1960. In 1960 the management expenses within the agricultural gross income was 37.9% whereas in 2000 the percentage covered 69.1% which is approximately 70%. The graph shows the relation between the total revenue of farm households (*2) and the surplus of farm household incomes (*3) which is derived by subtracting the household expenses. The total revenue of farm households peaked in 1992 at 8.8 million yen and has declined to 8.3 million yen in 2000. The surplus covered in the total revenue of farm households is showing a similar trend where the surplus was approximately 18% in 2000.

Table 4.2 Transitions in Agricultural Revenue and Management Expenses

Unit: thousand yen

	1960	1970	1980	1992	2000
Agricultural revenue	219.2	508.0	952.3	1,430.3	1,084.2
Agricultural surplus	352.7	984.6	2,420.9	3,796.3	3,507.6
Agricultural management expenses	133.5	476.6	1,468.6	2,366.0	2,423.4
Allotment of management expenses	37.9%	48.4%	60.7%	62.3%	69.1%

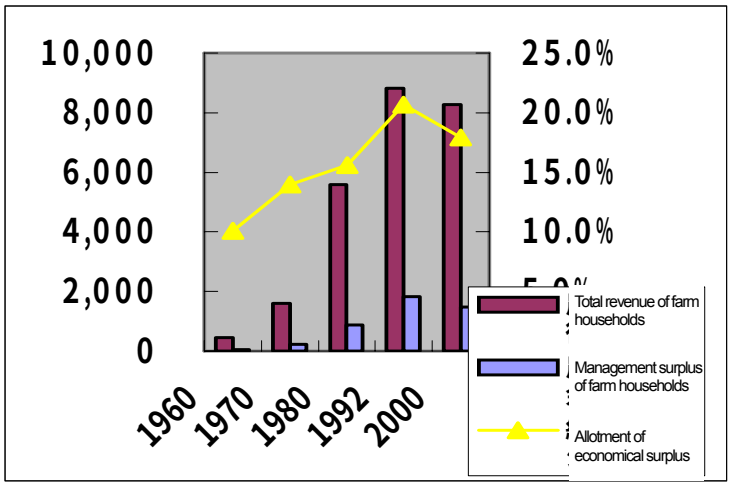
Source : Annual Report on Food, Agriculture and Rural Areas in Japan, FY2005

*1: Agricultural revenue is the amount subtracting agricultural management from the agricultural surplus.

*2: The total revenue of farm households includes the income of farm households, the off farm income and pensions.

*3: The agricultural surplus of farm households is the amount subtracting tax and other household expenses from the total revenue of farm households.

Figure 4.6 Transitions in the Total Revenue of Farm households and the Management Surplus



Source: Annual Report on Food, Agriculture and Rural Areas in Japan, FY2005

Chapter 5 Future of Agricultural Structures

5.1 Significance and content in the future of agricultural structures

The Basic Law for Food, Agriculture, and Rural Areas, (Basic Law) stipulates that the government must nurture an efficient and stable agricultural management to lead an established agricultural structure that covers the majority of the agricultural production (Article 21 in the Basic Law) where measures and policies must be enforced to seek a continuous development in agriculture so that the functions for a stable provision of food and other multiple functions can be exercised sufficiently and appropriately. Therefore, based on the Basic Law, to promote measures and policies to lay basic infrastructures for an agricultural production and to expand the scale of agricultural management, the goal of "an efficient and stable agricultural management" must clarify the "best intended agricultural structure" that can cover most of the agricultural production. All in all this is the future of an agricultural structure. Even during the revision of the basic plans for food, agriculture, and rural areas, the following positions will be clarified in the agricultural structure for a future "an efficient and stable agricultural management":

a) The number of " an efficient and stable agricultural management such as the total number of farm households and the number of purchased farm households
b) The number and production percentage of "an efficient and stable agricultural management" by major department in rice paddies and farming land

Also, based on the premise that agricultural labor must be secured to establish an agricultural structure that covers the majority of agricultural production within "an efficient and stable agricultural management", the prospective of securing agricultural labor must also be considered.

5.2 Calculation results

The agricultural structure in 2015 is estimated as follows:

5.2.1 The number of farm households and “an efficient and stable agricultural management”

The number of farm households is predicted to be 2.1to 2.5 million in 2015 when considering the recent trends and the trends in the number of farm households between 1995 and 2000 based on the surveys made on agricultural census. On the other hand, farm households that do not possess land is predicted to be 1.5 to 1.8 in 2015 due to the transitions in farm households with the reduction in the scale of the farms. Regarding the farm household management, (with includes a one company per household) it is predicted that there will be 330,000 to 370,000 efficient and stable farms, if it is surmised that farmers are aiming at conducting an efficient and stable agricultural management, and it will increase in size and improve their management due to the measures and policies by the governing authorities and organizations in prioritizing and focusing on supportive measures. On the other hand, the rice reforms and measures will take into account the positioning of the collective farming within an organized management. With the support from governing authorities and organizations to systemize collective farming in the future, small sized farm households and part time farmers will be able to participate in a systemized collective farming within an organized management. It is predicted that these small scaled farms will conduct an efficient and stable collective managed farm (including organized management and corporated farms) and will grow to 20,000 to 40,000 farms. Furthermore, the corporate management (not including one company per farm and corporate collective farms) will

a) improve the agricultural production corporate system with the addition of companies with restrictions in transferring shares

b) introduction of lease-type corporations other than agricultural productive corporations and the introduction of joint companies

Considering the above, it is predicted that the number of efficient and stable corporations will roughly be 10,000 farms.

Table 5.1 The Future of Agricultural Structure (in 2015)

	2004	2015	Remarks
Total number of farm households	2. 93 million persons	2.1 to 2.5 million persons	
Farms	430,000 persons	—	
Farms managed by the family	—	330,000 to 370,000 persons	
Corporate management	—	10,000 cooperatives	Introduced by investment and off farms of agricultural organizations
Collective managed farm	—	20,000 to 40,000 organizations	
Other farms that were purchased	1.73 million persons	1.3 to 1.4 million persons	Associated and corporate collective farming
Self-sufficient farms	770,000 persons	400,000 to 700,000 persons	
Non farmers with land	1.16 million persons*	1.5 to 1.8 million persons	Consigning the majority of farm land to an efficient and stable agricultural management • Focus on other industries • Farming as a livelihood

Note) Corporate management does not include one company per farm or collective managed corporation.
Collective managed farms include corporations with organized management
The number of non-farmers with land in 2004 is an estimated figure based on the total number from 1995 to 2000.

An efficient and stable agricultural management

This is a management system that can secure a high production level where the main workers have the same yearly working hours as the workers in other industries and the total income through life of the main worker can keep the same level as workers in other industries.

5.2.2 Breakdown per structure

The breakdown of the management structure of an efficient and stable farm household management and collective farm management in 2015 is predicted to be as follows. Approximately 60% of the land use of the efficient and stable farm household management and corporate management will be collective and including the farms that will be managed by other efficient and stable collective farms, it is predicted that 70 to 80% of the land that will be managed by an efficient and stable agricultural management.

Table 5.2 The Future by Management Structure of an Efficient and Stable Farm Households and Collective Farm Management (2015)

	Number of farms	Management Arable Land and the Percentage of the Number of Feeders
Rice paddies	About 80,000	About 70 to 90 percent
Hokkaido	About 10,000	
Prefectures	About 70,000	
Collective management farms	About 20,000 to 40,000	
Farms	About 30,000	About 80 percent
Hokkaido	About 10,000	About 90 percent
Prefectures	About 20,000	About 70 percent
Cultivated vegetables	About 20,000	About 70 percent
Greenhouse vegetables	About 30,000	About 80 percent
Fruit farms	About 40,000	About 70 percent
Dairy farms	About 20,000	About 90 percent
Hokkaido	About 10,000	About 90 percent
Prefectures	About 10,000	About 90 percent
Beef	About 10,000	About 80 percent
Management other than the above	About 140,000	—
Total		
Farm households management	About 330,000 to 370,000	—
Collective management farms	About 20,000 to 40,000	—

Note: The total does not match because the numbers were rounded up.

5.3 Forecast of agricultural labor

The forecast of agricultural labor in 2015 based on the recent trends and trends from 1995 to 2000 when the survey on agricultural census took place is as follows :

- Regarding agricultural labor, as the laborers are mainly people born from 1926 to 1934, the number of laborers are either declining or are aging. In 2015, it is predicted that the basic agricultural workers will be about 1.5 million people with those over 65 years will cover approximately 60 percent. It is predicted that the rate of female farmers in the basic agricultural

workers will cover approximately 50% and will play important roles in the agricultural management. The newly recruited farmers (under 39 years of age) is shifting from 1999 to 2003 on an average of 12,000 every year. It is predicted that the same level will continue until 2015.

Table 5.3 Forecast on the Number of Agricultural Workers by Age (by 2015)

	2004	2015
Over 65 years	1.19 million persons	900,000 persons
40 to 64 years	890,000 persons	450,000 persons
Under 39 years	110,000 persons	100,000 persons
Total	2.2 million persons	1.45 million persons

Male

	2004	2015
Over 65 years	690,000 persons	430,000 persons
40 to 64 years	420,000 persons	230,000 persons
Under 39 years	70,000 persons	70,000 persons
Total	1.18 million persons	730,000 persons

Female

	2004	2015
Over 65 years	500,000 persons	470,000 persons
40 to 64 years	470,000 persons	220,000 persons
Under 39 years	40,000 persons	30,000 persons
Total	1.01 million persons	720,000 persons

Chapter 6 Conclusion

This is a summary of this unit. After the Second World War Japanese agriculture went through agricultural reforms by setting up self-sufficient farms and land operations were improved to correct the diversities between the agricultural industry and other industries. Agricultural production was pursued by laying foundations to improve agricultural production which can be the base for the price of agricultural produce. However, with the flow of internationalization, Japanese agriculture which was based on rice cultivation increased the scale of imported wheat, soy beans and feed but on the other hand with the historical background in family managed small farms based on rice cultivation, arable land was not in full use due to the geographical factors of minimal amount of arable land and the increase in rural land prices. Furthermore, coupled with the development in mechanization, the supportive rural society, which mainly had off farm jobs, is rapidly aging. It is apprehended that the vigor in the rural areas in the future will decline with the lack of agricultural labor. Therefore in Japan, new policies are being promoted including a development of collective farm management and corporate management.

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