Census analysis series No.2

From the analysis of the agricultural labor force

Census analysis team of the project on the structure of the agricultural industry and rural regions

1. Trends in total embodied agricultural labor

Analyses of the agricultural labor force on the basis of the Agricultural Census has traditionally focused on commercial farm households when using indicators such as the population mainly engaged in farming and the number of core members of households engaged in farming of their own land, and discussion has focused on the trend of a weakening agricultural labor force on the basis of rates of decline in the number of farmers and aging of the farmer population in these indicators. In recent years, however, the agricultural industry has witnessed an increase in laborers in the labor force who are not farm household members as a result of increased employment by large farm households coupled with an increase in the number of organized farms, such as community-based agricultural cooperatives, and the incorporation of these organized farms, making it difficult to ignore these new forces when attempting to accurately grasp trends in the agricultural labor force in Japan. For this reason, in this analysis, we sum the labor of both members and nonmembers of commercial farm households to represent the total embodied agricultural labor of all forms of farming entities before analyzing the trends of the past five years.

Figure 1 shows the total numbers of working days in which farming was engaged in of the respective work forces in labor units (a labor unit = 225 days). The total embodied agricultural labor declined by 16% during the past five years from 2.81 million units in 2010 to 2.35 million units in 2015. The major reason for the decline is the decrease in the number of working days of commercial farm household members, with their portion in the total embodied agricultural labor (agricultural labor of farm household members) declining from 89% in 2005 to 80% in 2015. In contrast, reflecting the increase in the number of organized farms, the number of working days of their executives/members and employees almost doubled in the same ten-year period, with their portions representing 7% and 6% of the total embodied agricultural labor, respectively.

Table 1 shows these trends by type of farm. The figures indicate that among all business categories, "rice

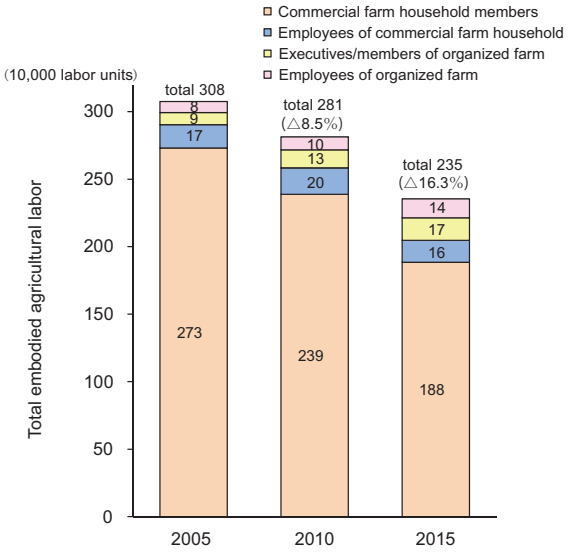

Figure 1. Changes in the number of working days in which farming was engaged in by type of agricultural labor force

Source: Agricultural Census (2005, 2010, 2015)
Note: A labor unit equals 225 working days in which farming was engaged in

Table 1. Changes in total embodied agricultural labor by type of farm

(Unit : 1,000 labor units,%)

	Total embodied agricultural labor 2015	Changes in 2010-15		Increase/decrease by type of labor force			
				Commercial farm household		Organized farms	
		Increase/decrease in number	Increase/decrease in rate	Household member	Employee	Executive/Member	Employee
total	2,354	△ 460	△16.3	△ 504	△ 34	34	44
Rice monoculture	625	△ 172	△21.6	△ 173	△ 7	5	3
Horticulture monoculture	727	△ 54	△ 6.9	△ 77	△ 7	12	19
Outdoor grown vegetables	189	△ 7	△ 3.6	△ 14	1	3	3
Vegetables grown in facilities	162	△ 8	△ 4.7	△ 17	△ 0	3	6
Fruits	254	△ 28	△ 10.1	△ 29	△ 2	1	2
Flowers/blossoming trees	85	△ 13	△ 13.6	△ 14	△ 4	3	2
Livestock monoculture	182	△ 13	△ 6.5	△ 24	△ 3	4	11
Dairy	56	△ 12	△17.2	△ 12	△ 1	1	1
Beef cattle	60	△ 5	△ 8.1	△ 6	△ 1	△ 0	2
Pig farming	24	1	4.8	△ 3	△ 0	2	2
Poultry	34	3	11.0	△ 2	△ 1	1	5
Multiple farming	623	△ 158	△ 20.2	△ 171	△ 11	16	8

Source: Agricultural Census (2010, 2015)
Note: (1) A labor unit equals 225 working days in which farming was engaged in
(2) Multiple farming includes quasi-monoculture mixed farming

Original; Japanese
Translated and published in Dec. 2018

monoculture farming" and "multiple farming" saw a significant decline in labor force in terms of both the amount and rate of decline in total embodied agricultural labor. In these types of farms, the increase in the executives/members and employees of organized farms was offset by the far greater decrease in the labor of farm household members of commercial farm households. As for multiple farming, the major increase in the number of executives/members and employees of organized farms is considered to be the result of efforts by community-based agricultural cooperatives to introduce multiple farming (such as vegetable farming), thereby driving the increase in the volume of the labor force, mostly in the form of employment.

On the other hand, for labor-intensive business categories such as horticulture and livestock, the decline in embodied agricultural labor due to the decreased number of household members of commercial farm households was small enough that this decrease in the amount of agricultural labor of farm household members was relatively well compensated by the growing number of employees of commercial farm households and the increase in the labor of organized farms. (Analysis by Tsutomu MATSUHISA)

2. Agricultural labor force of female household members and their participation in management

As the overall agricultural labor force shrank, the number of female full-time farmers (engaged in agricultural work no less than 150 days a year) of commercial farm households decreased from 630,000 in 2010 to 500,000. Among this group, the number of those under 65 years old decreased by 80,000 from 300,000 to 220,000. The decrease in the core female agricultural labor force indicates the continuation of the situation of aged female full-time farmers leaving the labor force without a sufficient number of farmers in the next generation to compensate for the loss (i.e., a lack of new farmers). In particular, a significant decline in the female population of the child-raising generation is seen in rural areas and particularly so among farm households. The major factor that underlies this is the increasing percentage of unmarried male farmers, resulting in a decrease in female household members in farm households.

Meanwhile, female full-time farmers not only contribute to agricultural labor but also play major roles in management. The state of female participation in farm management, a survey item included in this current Agricultural Census, shows that 8% of female full-time farmers are business managers themselves and 57% participate in decision making with respect to farm management. While the percentage of farmers participating in management totals 65% among female full-time farmers, which is 19 points higher than the percentage among all female farmers (46%), the percentage is still low compared with that among male full-time farmers, which totals 91% (managers 81%, participation in decision making 11%).

Figure 2 shows percentages of female participation in management by type of farm. The percentages are, in descending order, 56% for "dairy monoculture farming" and "chicken monoculture farming," 55% for "monoculture farming of vegetables grown in facilities," and 52% for "pig monoculture farming" and "flower/blossoming tree monoculture farming." They all deal with types of products with relatively high percentages of involvement by female full-time farmers. In contrast, with respect to types of farms with relatively low percentages of involvement by female full-time farmers, such as "rice monoculture farming" and "wheat group monoculture farming," the percentages of female participation in management are low, 39% and 44%, respectively. As seen in these figures, it is considered that the degree of female participation in management is determined by the number of working days they are engaged in farming,

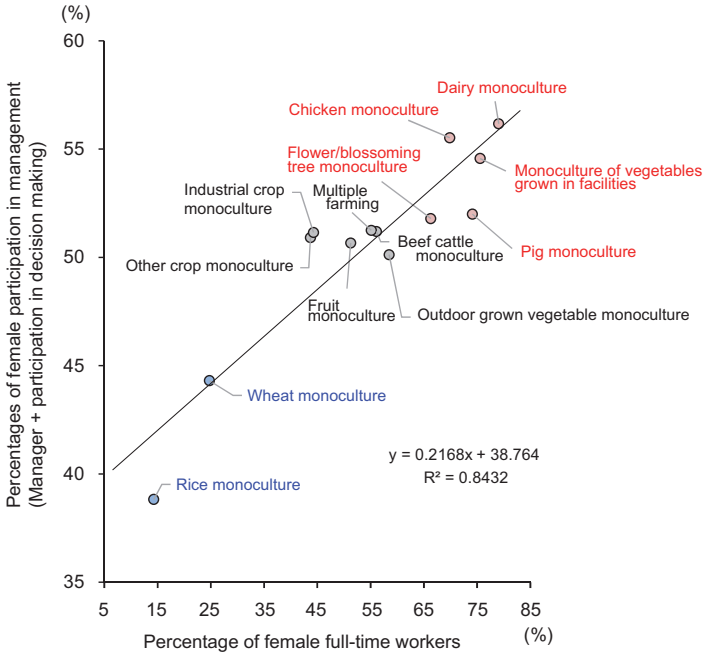

Figure 2. Percentages of female participation in management by type of farm and their relation with percentages of full-time farmers

Source: Agricultural Census 2015

Table 2. Characteristics of commercial farm households where female full-time farmers under 65 years old participate in management

	Number of farm households (in units of 100 households)		Composition ratio (%)	
	Commercial farm household	Participate in management	Commercial farm household	Participate in management
Amount of agricultural product sales 15 million yen or over	686	366	5.2	25.1
Cultivated land under management 10 ha or over	418	188	3.1	12.9
Top sales product is vegetables grown in facilities	690	249	5.7	17.1
Top sales product is outdoor grown vegetables	1,275	261	10.5	17.9
Top sales product is fruit	1,436	249	11.9	17.1
Top sales product is stock	545	157	4.5	10.8
Primary shipping destination is a wholesale market (sales basis)	749	169	6.2	11.7
Do product processing	214	62	1.6	4.3
Have full-time employees	401	154	3.0	10.6

Source: Individual survey responses of Agricultural Census 2015 reclassified and totaled

Original; Japanese
Translated and published in Dec. 2018

which in turn is determined by the type of products they deal with.

Next, we reclassified individual survey responses of the Agricultural Census and totaled the results in order to learn the characteristics of commercial farm households where female full-time farmers under 65 years old participate in management. Of around 210,000 commercial farm households with female full-time farmers under 65, around 150,000 households (71%) see their female full-time farmers participate in management, which represents 11% of overall commercial farm households.

Characteristics of management observed at farm households where female full-time farmers under 65 years old participate in management as compared with that of overall commercial farm households include: a higher percentage of large-sized facility-oriented operations focusing on vegetables, fruits, stock farming, etc.; a higher percentage of regular employment and product processing by the farm itself; and a slightly higher percentage of shipping to wholesale markets (Table 2).

The overall analysis results show that though the core female agricultural labor force represents a minor portion of the overall agricultural labor force, farm households where these female full-time farmers participate in management have a strong business foundation in terms of sales amounts as well as the amount of land area under management, and tend to be active in introducing an employed labor force and businesses related to agricultural production. The analysis results also illustrate that although the percentage of female participation in farm management is still low compared with that of male farmers, with respect to the core female agricultural labor force, a certain degree of progress has been achieved in terms of participation in decision making proportionate to the amount of labor they provide. (Analysis by Mayumi SATO)

Original; Japanese
Translated and published in Dec. 2018