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# Changes in Income Structure by Type of Farm and Policy Implications

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# ◇ Abstract ◇

○ Farm household income, which increased by 11.3% in 2013 from the previous year, has been on the rise for the three consecutive years (by 1.0% in 2014 and 6.5% in 2015), raising expectations for the recovery of the economy of farm households.

○ The policy implications that lie in the positive phenomena of the increase in farm household income can be identified by an analysis of each type of farm household, avoiding the concept of average of farms and classifying the effects of various factors, including the expansion of farming size, specialization of farming, aging farming population, and a growing number of small-sized farms.

○ Each type of farm households, which are classified based on the age of the farm manager (the age of 65) and the standard farming size (2 ha), is characterized as follows.
- Group 1, medium/large-sized farms run by young and middle-aged farmers: A group of farmers aged 56 on average. Those in their 40s and 50s account for 75% of this group, and these farms have high potential for growth in the agricultural sector.
- Group 2, small-sized farms run by young and middle-aged farmers: A group that mostly consists of part-time farms (Type 2 part-time farms account for over 57%) and other various types of small-scale farms, including new starters, Type 1 and Type 2 part-time farms. It is important for this group to increase opportunities for economic activities.
- Group 3, small-sized farms run by aged farmers: A group of farmers aged 74 on average. This group takes up over 50% of the total farm households in the country and has poor farming infrastructure.
- Group 4, medium/large-sized farms run by aged farmers: A group of farmers aged 71 on average. This group is mostly comprised of rice-growing farms, but still has large-scale agricultural resources, and 60% of this group have no successor.

○ In terms of the group of medium/large-sized farms run by young and middle-aged farmers, a majority of them have benefited from policies for improving income structure and strengthening competitiveness. But in order to help them grow in a stable way, measures for management stabilization are needed for high-risk farm households with heavy debt.

○ For small-sized farms run by aged farmers, a variety of support policies should be strengthened, including the reinforcement of welfare policies such as the basic living security system, the support for securing stable markets to sell a small volume of products, the 6$^{th}$ industry businesses jointly managed by community, and the creation of nonfarm income through regional policies such as local food promotion.

○ For small-sized farms run by young and middle-aged farmers, whose base for farming business is weak, employment policies for rural areas should be strengthened to help them secure stable nonfarm income, while income growth should be encouraged for some farm households by expanding farming size.

○ In terms of medium/large-sized farms run by aged farmers whose base for farming is solid, it is necessary to encourage them to improve productivity and increase agricultural income through systematized farming and secure human resources as successors to maintain their infrastructure for production.

# 1. Current Issues

○ In 2013, farm household income increased by 11.3% from the previous year, and since then, it has grown for three years in a row (by 1.0% in 2014 and 6.5% in 2015), raising expectations for the recovery of the farm household economy.

- While the expansion of farming size and specialization of agriculture have contributed to increasing income of farms, the aging farming population and a growing number of small-sized farms have worked as factors that reduce the average income of farm households.
- The recent slight recovery of the farm household economy is probably attributed to the fact that full-time farm households whose farming size expanded have led the increase in farm household income, while the income of small-sized farms has maintained thanks to the increase in transfer income, including non-farm subsidies for small-scale farms and direct payment for rice-growing farms (KREI June 2016).

○ Industrial factors, such as diminished profitability of agriculture due to the changes in conditions for competition including market opening, and the changes in socioeconomic structure in agriculture and rural areas have served as major variables for prolonged stagnation in farm household income (Kim & Park 2014).

- Even in the 2000s, the average farm household income was stagnant due to income polarization, caused by the expansion of farming size, specialization of farming, the increase in the number of farmers who work two jobs (part-time farm households), the aging farming population, and a growing number of small-scale farms.
- The proportion of large-sized farms with 5 ha or larger farmland increased from 1.7% in 2000 to 3.4% in 2010, and the number of Type 2 part-time farms, whose nonfarm income is higher than

agricultural income, also jumped, while the aging of the farming population continued and a group of farm managers aged over 70 became the mode of age distribution in the agricultural sector.

* The proportion of small-scale farms with less than 0.5 ha of farmland increased from 31.8% to 40.1%.

○ As the types of farm households have become diversified with the changes in the structure of the agricultural industry, policies based on the average data of farms have limitations. Therefore, it is necessary to identify the income of each type of farm household, which is the result of economic activities of farms and agricultural policies, and evaluate the effect of policies.

○ This study aimed to analyze the income structure of each type of farm household to identify major income sources, see what kind of farm households are recovering their income, and draw policy implications to stabilize the income of farms.

# 2. Trend in Farm Household Economy

## □ Farm household income increased thanks to the increase in agricultural income.

○ In 2015, farm household income grew more than it did in the previous year, increasing from 2014 by 6.5% to KRW 37.21 million.

- In the total amount of increased income (KRW 2.26 million), the amount of increased agricultural income accounts for 42% (KRW 0.95 million), while that of increased transfer income takes up 48.2% (KRW 1.09 million).

○ In 2015, agricultural income increased by 9.3% from the previous year to KRW 11.26 million.

- In the short term, such an increase was caused as the income from livestock products remained high and the decrease in the income from crops became less sharp. The less dramatic increase in the agricultural management cost was another factor.

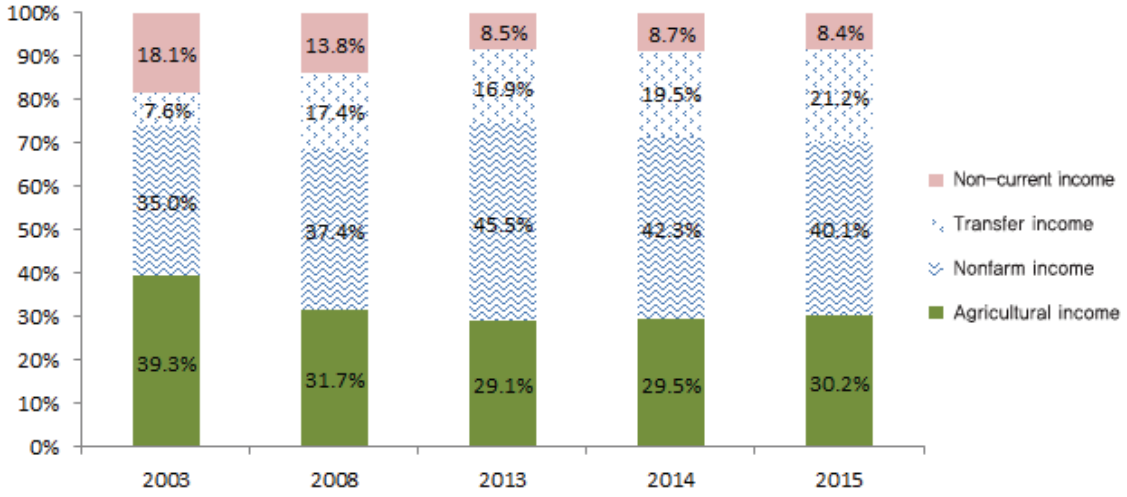
**Table 1. Total Agricultural Income & Agricultural Management Cost of Farm Households**

Unit: KRW 1,000, %

| | 2012 | 2013 | 2014 | 2015 | Increase/ decrease rate in 2013-2014 | Increase/ decrease rate in 2014-2015 |
|---|---|---|---|---|---|---|
| Farm household income | 31,031 | 34,524 | 34,950 | 37,215 | 1.2 | 6.5 |
| Agricultural income | 9,127 | 10,035 | 10,303 | 11,257 | 2.7 | 9.3 |
| Total agricultural income | 27,589 | 30,648 | 32,179 | 33,654 | 5.0 | 4.6 |
| Income from crops | 21,942 | 23,155 | 22,942 | 22,760 | -0.9 | -0.8 |
| Income from livestock products | 5,099 | 7,397 | 9,071 | 10,530 | 22.6 | 16.1 |
| Other agricultural income | 548 | 96 | 165 | 365 | 71.9 | 120.9 |
| Agricultural management cost | 18,461 | 20,613 | 21,875 | 22,398 | 6.1 | 2.4 |

**Figure 1. Changes in Proportion of Each Type of Farm Household Income**

Unit: %




## □ Transfer income made up for stagnant nonfarm income.

○ Non-farm income, which had led the expansion of farm household income in the past, became stagnant in the recent years due to the aftermath of national disasters and low growth of the national economy, recording KRW 14.94 million in 2015, a 0.9% increase from the previous year.

- While agricultural income was stagnant for a long period of time until 2012, the proportion of nonfarm income was on the steady rise.
- Nonfarm income is classified into the income from subsidiary business (business income) and non-business income with salary included. The income from subsidiary business, which includes small-scale accommodation businesses and restaurants, is easily affected by economic fluctuations.

* Nonfarm income: KRW 11.4 million (2008) → KRW 15.7 million (2013) → KRW 14.8 million (2014) → KRW 14.94 million (2015)

○ While nonfarm income increased very slightly due to economic recession, transfer income including government supports, which

jumped by 15.9% from the previous year, contributed to the increase in farm household income.

- In 2015, transfer income reached KRW 7.9 million, a 15.9% increase from 2014 (KRW 6.82 million), maintaining the uptrend (the increase rate in 2014: 16.7%).

## □ The increase in the income of rice-growing farms contributed to the rise in the average farm household income from the previous year.

○ The livestock farms have enjoyed high income, which is also on the steady rise, contributing to the increase in the average income.

- Although the income of rice-growing farms jumped by 13.7% from the previous year, contributing to the total average income, the absolute figure of their income is low, showing huge gaps between the different types of farms.

**Table 2. Changes in Farm Household Income by Farming Type**

Unit: KRW 1,000

| | 2013 | 2014 | 2015 | Increase rate in 2013-2014 | Increase rate in 2014-2015 |
|---|---|---|---|---|---|
| Rice Growing | 23,325 | 22,500 | 25,588 | -3.5% | 13.7% |
| Fruit Farming | 34,352 | 34,662 | 34,039 | 0.9% | -1.8% |
| Vegetable Farming | 29,125 | 25,718 | 27,001 | -11.7% | 5.0% |
| Special Crop Farming | 21,081 | 19,265 | 15,281 | -8.6% | -20.7% |
| Flower Growing | 21,878 | 27,983 | 26,981 | 27.9% | -3.6% |
| Dry-Field Farming | 20,122 | 23,528 | 23,576 | 16.9% | 0.2% |
| Livestock | 52,721 | 72,338 | 79,649 | 37.2% | 10.1% |
| Others | 46,113 | 57,136 | 72,133 | 23.9% | 26.2% |
| Type 2 Part-time | 42,975 | 43,717 | 45,547 | 1.7% | 4.2% |
| Total | 34,524 | 34,950 | 37,215 | 1.2% | 6.5% |

Note: Rice-growing farms refer to those whose income from rice is the highest among their total agricultural income, and such a classification method is also applied to other categories.

## □ Long-term changes in farm household income and the gap between urban and rural areas

○ After the nominal farm household income had reached KRW 30 million in 2005, it was stagnant for a long period of time at around KRW 31 million as of 2012, but started to increase again from 2013.

- Agricultural income increased to KRW 10 million in 1995, but declined or stayed at the same level for a long time due to deteriorated trade conditions caused by the stagnant prices of agricultural products and the increase in the prices of agricultural materials. But it has been on the rise again since 2012.
- The proportion of agricultural income in the total farm household income dramatically decreased, but has been on the rise again in recent years.

* 39.3% (2003) → 31.6% (2008) → 29.1% (2013)→ 29.5% (2014) → 30.2% (2015)

○ The income gap between urban and rural areas continued to be intensified, but it has recently been alleviated thanks to the increase in farm household income in 2015.

- Farm household income is 64.4% of the income of urban working households (2 or more people) as of 2015 (KRW 57.79 million). The proportion was on the rapid decline in the past, but recently began to grow after 2012.

* 76.4% (2003) → 65.2% (2008) → 57.6% (2012) → 61.5% (2014) → 64.4% (2015)

# 3. Classification of Farm Households and Structural Changes

## □ Standards for classifying the types of farm households

○ Since agricultural income, nonfarm income and transfer income have changed in different patterns depending on the type of farm household, an analysis of the changes in the income structure of each type of farm is a meaningful work.

- The changes in the average income by commodity type, age and farming size can be found in existing materials, including the data of Statistics Korea (2015), but this study tried to classify farms in a new method and analyze their income to identify information that could not be detected with such data.
- This analysis is aimed at dividing farm households into several groups based on the age of owner and farming size, and analyzing the gaps and changes in the income structure of each category.

○ Farm households are classified into different groups based on the age of farm manager (age of 65) and the standard farming size (2 ha of farmland).

- In terms of the age of owner, the standard point was set at the age of 65, considering that a majority of full-time farmers maintain their farming size until entering 65 thanks to improved national health and mechanization of farming methods.
- The standard farming size was calculated as the concept of “scale” by converting tangible agricultural assets, including livestock facilities and greenhouses, to farmland to reflect them in farming size with consideration for the integration of agricultural capital.

- Livestock farms and protected farms earn relatively a lot even though their farmlands are small, so this concept should be reflected in calculating farming size.
- Since there are various types of farming, including rice, vegetables, fruits and livestock, it is impossible to accurately define farming size only based on the area of rice paddy and fields. Moreover, fixed agricultural assets (agricultural facilities, large animals and plants, etc.) are also part of major factors that determine farming size.

**<Standard Farming Size>**

○ The size of farming can be redefined by applying the concept of the standardized size of farming (SSF) (Choe Yangbu et al. 1983).

○ The SSF can be estimated by the following formula, considering fixed agricultural assets and farmland area.

$$SSF = L_C + \frac{FA}{L_P}$$

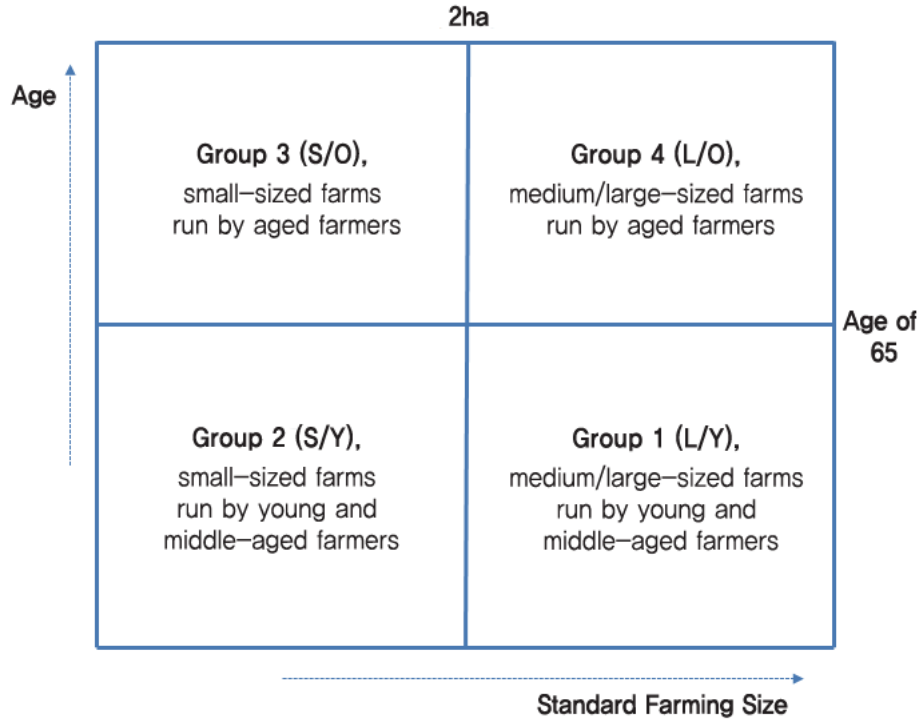
$L_C$ : $Farmland\,area$, $FA$ : $Fixed\,agricultural\,assets$,
$L_P$ : $Average\,price\,of\,farmland\,of\,the\,year$

○ Based on the criteria, Figure 2 describes the classification of farm households.

- **Group 1 (L/Y), medium/large-sized farms run by young and middle-aged farmers**: A group of farmers aged 56 on average. Those in their 40s and 50s account for 75% of this group, and these farms are well connected with the growth of agriculture, and need to grow into professional farms.
- **Group 2 (S/Y), small-sized farms run by young and middle-aged farmers**: It is presumed that part-time farms account for a large part of this group, and other various types of small-scale farms, including new starters such as those returning to farming, and Type 1 and Type 2 part-time farms, are also included in this group. It is important for them to increase opportunities for economic activities.

- **Group 3 (S/O), small-sized farms run by aged farmers**: A group of farmers aged 74 on average. This group takes up over 50% of the total farm households in the country. About a half of the owners of this group are aged 75 or over, right before retirement with weak infrastructure for future farming.
- **Group 4 (L/O), medium/large-sized farms run by aged farmers**: Despite their age, this group takes up a large part in the aspect of agricultural production resources. It is assumed that a majority of them are rice-growing farms, mostly a single-crop type, and the average age of the owners is 71, right before retirement. Some of them have successors, while other do not.

**Figure 2. Classification of Types of Farm Households (Standard Farming Size/Age)**



## □ Changes in the composition of types of farm households

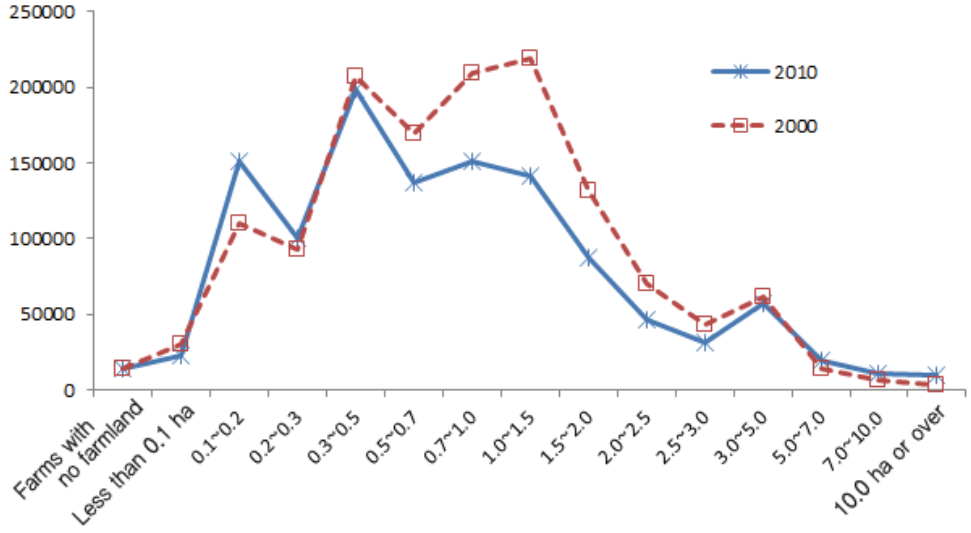
○ The data of 2010 and 2015 shows the changes in the composition of types of farm households, including the increase in the number of L/Y, the significant decline in the number of S/Y, and the sharp increase in the number of L/O.

- It is assumed that the increase in L/O was attributed to the fact that the previous group of L/Y became old to be included in elderly farmers with aging population trend in the industry, along with the fact that part of S/Y expanded their farming scale and entered the group of full-time farms in a medium or a larger size.
- The proportion of medium- and large-sized farms jumped from 20.3% in 2010 to 33.1%, and that of farmers aged 65 or over also increased by 8%p, implying the aging population and the expansion of farming size in the industry.

○ In particular, the proportion of S/Y with less than 2 ha of the standard farming size significantly dropped from 2010.

- According to the changes in the distribution of farmland area analyzed in the Agricultural Census Report, the number of farms with 1-3 ha of farmland declined, leading to the expanded gap between small and large farms. The proportion of S/Y fell from 32.5% to 21.5%.

**Figure 3. Changes in Distribution of Farmland Area (Agricultural Census)**




Source: Kim Meebok and Park Seongjae (2014), Re-citation.

○ The proportion of L/Y increased, and also their farm household income and agricultural income jumped quite significantly, making them play a leading role in the agricultural industry.

○ The farm household income of S/Y grew, but mostly in the category of nonfarm income, while the proportion of agricultural income is very small.

○ The agricultural income of S/O declined, but their farm household income seems to have been made up for by the increase in transfer income.

○ Despite the rise in the agricultural income of L/O, the increase rate of their average farm household income was the lowest among the four groups.

**Table 3. Structural Changes in Types of Farm Households**

Unit: KRW 1,000, %

| | Percentage | | Average farm household income | | | Average agricultural income | | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2010 | 2015 | Rate of increase | 2010 | 2015 | Rate of increase |
| Group 1, medium/large-sized farms run by young and middle-aged farmers (L/Y) | 12.5 | 15.7 | 58,500 | 69,800 | 19.3 | 30,300 | 36,600 | 20.8 |
| Group 2, small-sized farms run by young and middle-aged farmers (S/Y) | 32.5 | 21.5 | 38,000 | 44,100 | 16.1 | 8,830 | 5,900 | -33.2 |
| Group 3, small-sized farms run by aged farmers (S/O) | 47.2 | 45.5 | 22,100 | 24,700 | 11.8 | 5,690 | 5,160 | -9.3 |
| Group 4, medium/large-sized farms run by aged farmers (L/O) | 7.8 | 17.4 | 35,500 | 37,500 | 5.6 | 14,800 | 16,900 | 14.2 |

# 4. Income Structure of Each Type of Farm Household and Challenges

## 4.1. Medium/large-sized farms run by young and middle-aged farmers (L/Y)

□ **The agricultural income is on the rise thanks to the policy for strengthening competitiveness, including the expansion of farming size.**

○ In terms of medium/large-sized farms run by young and middle-aged farmers at the age of 65 or lower with the standard farming size (2.0 ha) or larger, who are the core target of the agricultural policies, the farm household income reached KRW 69.8 million, a 19.3% increase from 2010 (12.1% based on real income).

- The agricultural income takes up the largest part in the total income of this group, recording KRW 36.6 million as of 2015, a 20.8% increase from 2010, contributing to the increase in the total farm household income (13.5% based on real income).

* Rate of increase in agricultural income: 4.0% (2013) → 11.7% (2014) → 27.5% (2015)

- In the total farm household income, agricultural income, nonfarm income and transfer income account for 52.4%, 29.8% and 12.4%, respectively.

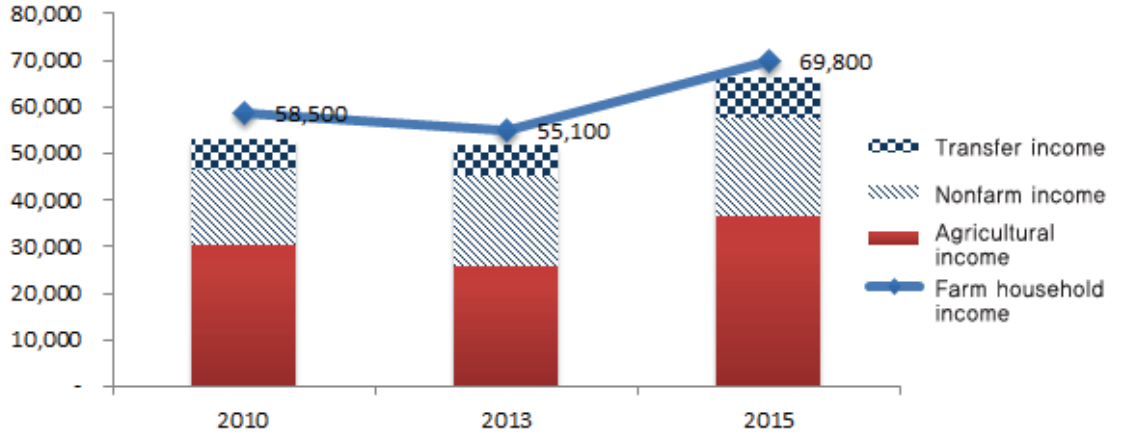
○ The farm household income of L/Y has been on the steady rise, highly dependent on agricultural income (52.4%), meaning that this type is farm households closely connected to the growth of agriculture.

* The proportion of agricultural income of average farms: 30.2% (2015)

- The government policies for stabilizing the operation of farming business, including disaster insurance and the interest rate cut, and those for reinforcing the competitiveness of farms, including the organization of collective paddy management entities, support for modernization of facilities, and improvement of the distribution structure, worked successfully.
- Since smooth financing is an important factor for this group, it is necessary to consider policies for facilitating policy financing and preventing inadequate business management.

**Figure 4. Income Composition of Group L/Y**

Unit: KRW 1,000




○ The effect of the policies for strengthening competitiveness and improving the structure seems to have been reflected in the increase in the income of L/Y, and the proportion of this group grew from 12.5% in 2010 to 15.7% in 2015.

- The increase in the number of farms in this group, which has potential to grow into competitive leading farms, is largely attributed to a growing number of livestock, vegetable and fruit farms. Compared to 2010, the number of livestock farms soared, while those growing fruits and vegetables increased to a certain degree.

**Table 4. Changes in the Number of Farms in Group L/Y by Farming Type**

Unit: Farm household, KRW 1,000

| | 2010 | | 2015 | |
|---|---|---|---|---|
| | No. of Farms | Agricultural Income | No. of Farms | Agricultural Income |
| Rice | 70 (9) | 26,600 | 72 (11) | 30,700 |
| Fruit | 47 (3) | 55,200 | 54 (13) | 37,500 |
| Vegetable | 72 (3) | 31,200 | 82 (12) | 35,600 |
| Flower | 3 (0) | 39,400 | 3 (0) | 7,782 |
| Dry Field | 13 (1) | 21,200 | 11 (3) | 45,400 |
| Livestock | 50 (11) | 108,000 | 103 (6) | 101,000 |
| Special Crops + Others | 22 (1) | 59,900 | 18 (2) | 81,000 |
| Part-time | 53 (20) | 10,600 | 65 (24) | 10,400 |
| Total | 330 | | 408 | |

Note 1) The categories of special crops and others are integrated because several commodities in these categories overlap.
2) Farm households with a negative figure of agricultural income are excluded in the calculation of the average income of farms for each farming type. Such farm households are concentrated in particular categories (livestock, Type 2 part-time farms).
3) The figures in brackets indicate the number of farm households with a negative figure of agricultural income.

## □ Increase in the number of farm households earning equal to or more than their counterparts in urban areas, and concerns for risk of management

○ In Group L/Y, the number of farm households who earn more than the average working households (2 or more people) in urban areas is on the rise, and their average income is also growing, implying that the competitiveness of this group is strong.

**Table 5. Proportion of Farm Households Earning More than Urban Households (2 or More People)**

Unit: Farm household, KRW 1,000

| | 2003 | 2010 | 2013 | 2015 |
|---|---|---|---|---|
| No. of farm households earning more than urban working households (A) | 58 | 142 | 175 | 180 |
| Group L/Y (B) | 83 | 330 | 449 | 408 |
| Proportion in the group (A/B) | 69.9% | 43.0% | 39.0% | 44.1% |
| Average income of A | 77,400 | 86,400 | 93,600 | 113,000 |

○ However, the income polarization is observed in Group L/Y, and over a half of the farms in this group still earn less than their urban counterparts, implying that investment and supports are needed for this group to stably settle in professional farming communities.

- In this group, quite a large number of farms are in risk of business management in that the debt ratio of the group is 13%, which is four times higher than that of Group S/O, and about 25% of the farm households in this group have 20% or higher debt ratio.
- In 2015, the average farming size of farm households in this group earning more than their counterparts in urban areas reached 5.7 ha, a 0.5 ha increase from 2013 based on the same samples.

**Table 6. Average Debt Ratio of Each Group**

| | Group L/Y | Group S/Y | Group S/O | Group L/O |
|---|---|---|---|---|
| 2015 | 0.13 | 0.10 | 0.03 | 0.05 |

## 4.2. Small-sized farms run by young and middle-aged farmers (S/Y)

### □ The proportion of nonfarm income increased due to the decrease in the number of full-time farms (including Type 1 part-time farms)[1].

1) The definition of full-time and part-time farms in the agricultural economic statistics is

○ The farm household income of this group is KRW 44.1 million, a 16.1% increase from 2010, which is on the steady rise thanks to the growth of nonfarm income.

- As of 2015, the proportion of agricultural income of this group is 13.4%, a significant decrease from 23.2% in 2010. On the contrary, the proportion of nonfarm income rose from 55.5% to 67.6%, and transfer income also increased to KRW 5.25 million, similar to agricultural income (KRW 5.16 million).

○ Nonfarm income is divided into subsidiary business income and non-business income, and non-business income is classified into earned income and capital income.

- Non-business income takes up a whopping 81.8% in the nonfarm income of Group S/Y. 75% is from nonfarm salary, and a small amount of agricultural wage and other capital income are included.

* Non-business income: KRW 24.64 million (2015)

* Earned income (nonfarm salary): KRW 22.4 million (2015), Earned income (agricultural wage): KRW 0.61 million (2015)

different from that in general. The general meaning of full-time farms includes the concept of farming scale, while full-time farms in the agricultural economic statistics are classified as specialized farms in the category of professional farms.

| Category | | Criteria |
|---|---|---|
| Full-time | | A farm household that has no member engaged in non-farm business for 30 or more days in that year in the pursuit of profit |
| Part-time | | A farm household that has a member engaged in non-farm business for 30 or more days in that year in the pursuit of profit |
| | Type 1 | A part-time farm whose total agricultural income is higher than nonfarm income (income from other job, non-farming-business income) |
| | Type 2 | A part-time farm whose total agricultural income is lower than nonfarm income |

**Figure 5. Income Composition of Group S/Y**

Unit: KRW 1,000

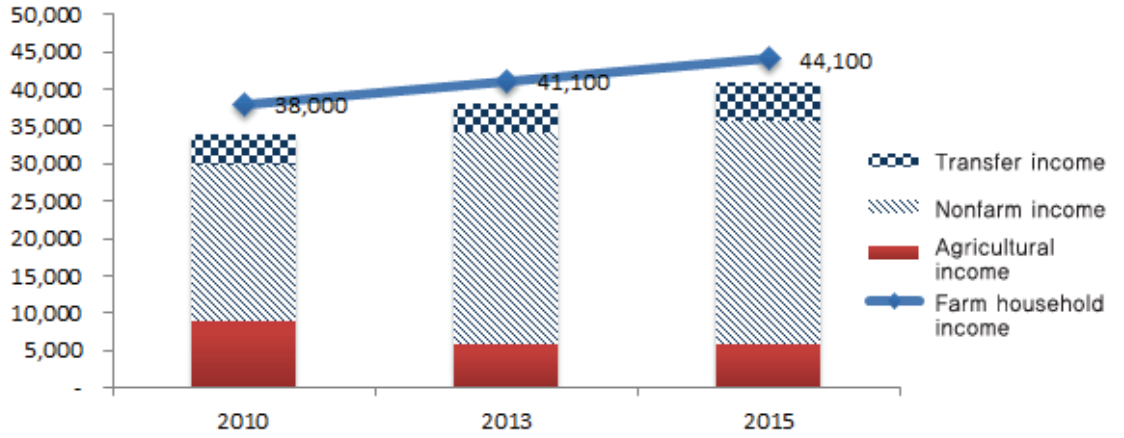
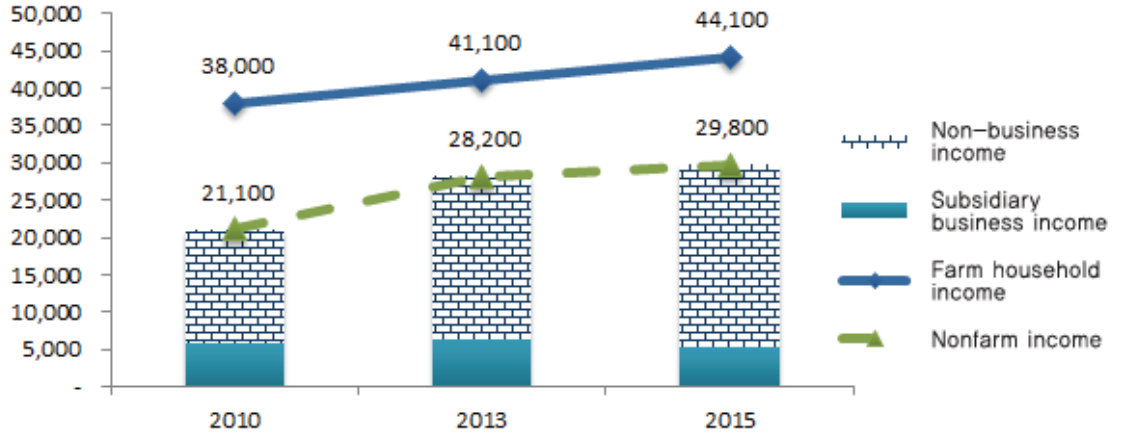



**Figure 6. Nonfarm Income Composition of Group S/Y**

Unit: KRW 1,000




○ Type 2 part-time farm households take up over 50% of Group S/Y (57.2%), a 10%p increase from 2010, and the proportion of full-time farms in this group decreased compared to 2010, which is mostly comprised of vegetable growing farm households.

**Table 7. No. of Full-time & Part-time Farms in Group S/Y**

| | 2010 | | 2015 | |
|---|---|---|---|---|
| | No. of farm households | Percentage | No. of farm households | Percentage |
| Full-time | 235 | 27.36 | 144 | 25.81 |
| Type 1 part-time | 237 | 27.59 | 95 | 17.03 |
| Type 2 part-time | 387 | 45.05 | 319 | 57.17 |
| Total | 859 | 100 | 558 | 100 |

## □ Significance of jobs in rural areas

○ For farm households with small farmland in rural areas to continue economic activities, they need fixed income sources by having the farm manager or any member of household be engaged in non-agricultural activities.

- The number of full-time and Type 1 part-time farm households in the group of farmers aged under 65 with less than 2 ha of the standard farming size significantly decreased (see Table 9). Type 1 part-time farms indicate those that have members engaged in non-farming activities but with agricultural income higher than nonfarm income, so the decrease in the number of such farms implies that farming is hard to be a main income source in a small-scale farming business less than 2 ha.

○ In Group S/Y, Type 2 part-time farm households who have fixed jobs in rural areas earn 87% of urban household income (KRW 57.79 million), which is relatively high. The nonfarm income of Type 1 part-time farm households is KRW 15 million, showing how a fixed job can affect the total income of farms.

- In 2015, the income of Type 2 part-time farm households reached KRW 50.3 million, an 18.9% increase from 2010, including KRW 42 million of nonfarm income (11.8% based on real income)

- In the same year, the income of Type 1 part-time farm households with nonfarm income sources slightly increased from five years ago to KRW 40.9 million, thanks to the rise in agricultural and nonfarm income.
- In 2015, the income of farm households with no member engaged in nonfarm activities decreased from 2010, reaching KRW 28.5 million.

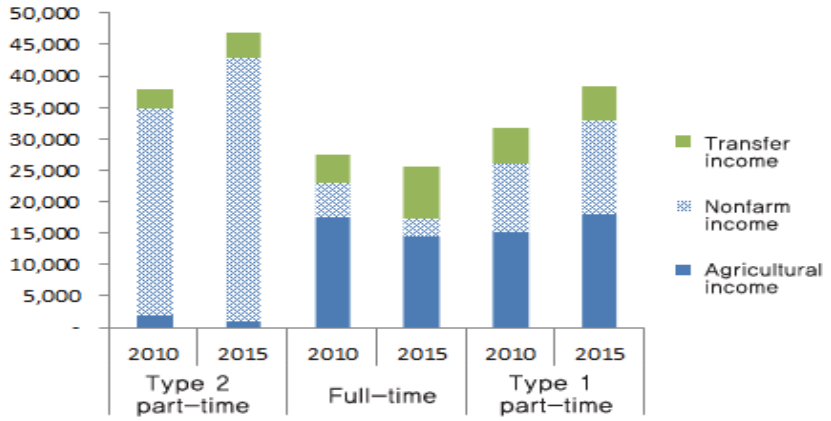
* Nonfarm salary of S/Y: KRW 13.6 million (2010) → KRW 20.1 million (2013) → KRW 21.8 million (2015)

○ For small-sized full-time farms with low income due to weak farming infrastructure, policy support is necessary to help them switch into part-time farms by expanding nonfarm income. It is also crucial to provide opportunities for increasing agricultural income to new starters, such as those returning to farming and startups, by expanding the scale of farming.

- The income of Type 1 part-time farms (KRW 40.9 million) is 70% of the income of working households in urban areas.

**Figure 7. Income Composition of Full-time & Part-time Farms in Group S/Y**

Unit: KRW 1,000



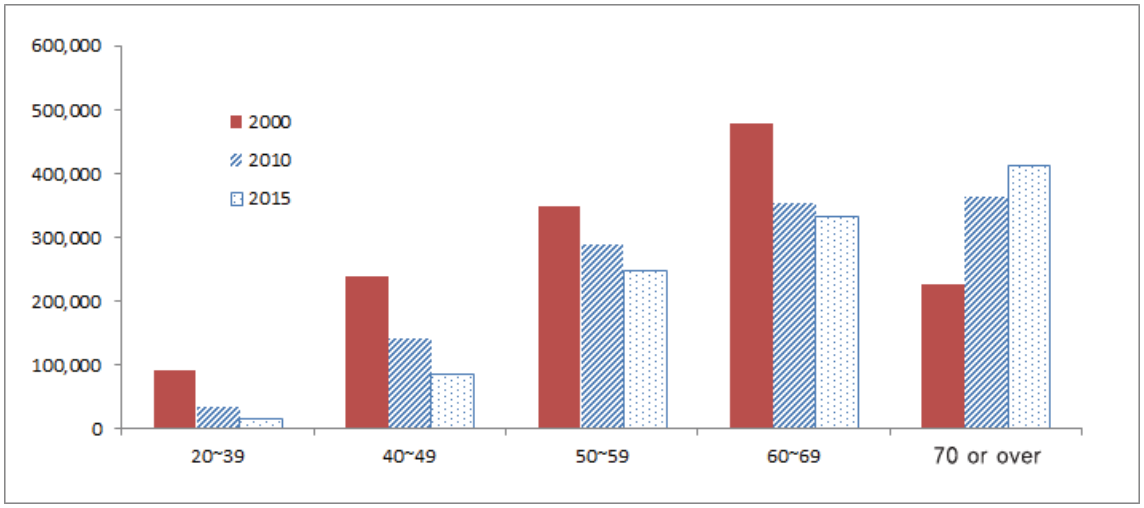
## 4.3. Small-sized farms run by aged farmers (S/O)

### □ Performance of welfare policy for small-sized farms run by aged farmers

○ According to the estimated results of Agricultural Census 2015, the percentage of the aging population at the age of 70 or over was 38.4%, a 6.7%p increase compared to 2010. The trend of a super-aged society is in progress.[2)]

- The mode of the farm manager age has changed to the age of 70 or over.
- The increasing percentage of farm households run by aged farmers with a relatively low income has an impact on the average farm household income.

**Figure 8. Change in the Age Distribution of Farm Managers**




2) The Agricultural Census 2015 is currently available for the age unit of 10 years.

○ Group S/O at the age of 65 or over with less than 2ha in the standard farming size of 2 ha accounts for nearly half the farm household population. With an increase in transfer income, their income rose by 11.8% compared to 2010 (5.0% based on real income).

- Unlike Group L/Y whose agricultural income is half of their income, Group S/O has income which is composed of 20.9% of agricultural income, 32.3% of nonfarm income and 34.8% of transfer income.[3)]

* Agricultural income: KRW 5.7 million (2010) → KRW 5.15 million (2013) → KRW 5.16 million (2015)
* Nonfarm income: KRW 7.7 million (2010) → KRW 8.69 million (2013) → KRW 7.97 million (2015)
* Transfer income: KRW 6.17 million (2010) → KRW 6.25 million (2013) → KRW 8.58 million (2015)

○ As nonfarm subsidies in the farm household income of S/O are not only large in size, but also their proportion has increased, it is estimated that the expansion of government welfare support policy took effect.

- While nonfarm subsidies for all farm households in 2015 are KRW 5.56 million, which is 15% of farm household income, nonfarm subsidies for S/O are KRW 6.9 million, which accounts for 27.9% of farm household income.

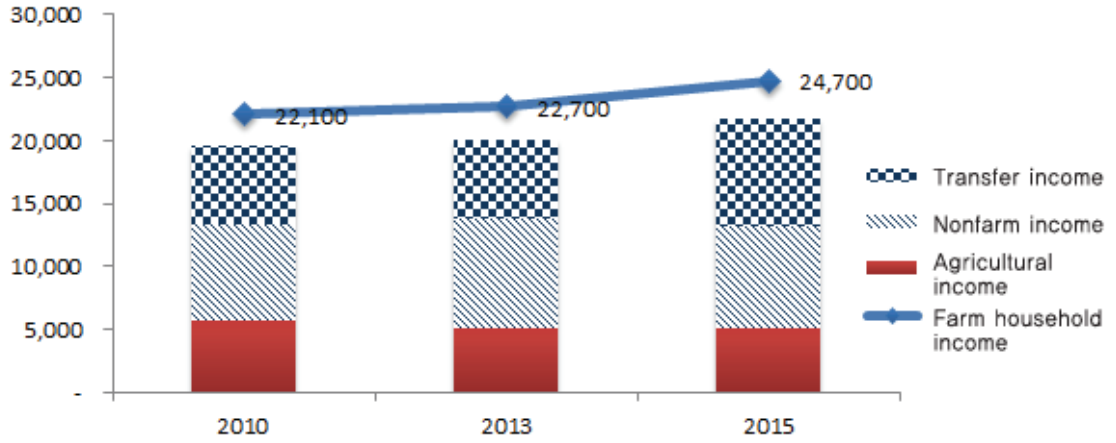
* Percentage of nonfarm subsidies in S/O: 15.7% (2010) → 21.0% (2013) → 27.9% (2015)

- Nonfarm subsidies include pension, unemployment benefit, basic old-age pension, allowance for low-income households, disability grant, industrial accident insurance benefit, etc.

3) Expenses for congratulations and condolences are non-current income and excluded from this analysis.

**Figure 9. Income Composition of Group S/O**

Unit: KRW 1,000




## □ Significance of agricultural income depending on the level of a small-sized farm

○ As there is a limitation in income expansion only by reinforcing welfare even for Group S/O, it is imperative to strengthen income sources in connection with agriculture.

- As shown in Table 8, the percentage of subsistence farming is 66.3%, which is higher compared to Group L/Y, and this indicates that some farms maintain small-sized farming. The fact that the percentage of lent site is 24.2% implies that farm households at the stage of retirement are included with reasons such as health issues.
- When the actual retirement age is estimated to be 75, farm household income at the age of under 75 is KRW 30.5 million, and agricultural income accounts for about 20%.

○ Farm households at the age of under 75 before retirement can maintain agricultural income by securing a stable market for small-sized farming or expand non-business income such as income from small-sized subsidiary business and non-business works such as short-term labor, which can contribute to maintaining income.

- As aged farmers find it difficult to make massive agricultural investment and secure a fixed nonfarm job, it is required to reinforce small-sized business in connection with agriculture in the region.

○ As the management capability of each individual farm household is weak, it is necessary to review the vitalization of local food and village-based joint 6th industrialization policies in detail so that regional and institutional supplementation can contribute to increasing farm household income of this group.

**Table 8. Proportion of Subsistence Farming in Each Group**

Unit: $m^2$, %

| | Group S/O | | Group L/Y | |
|---|---|---|---|---|
| | Average area | Percentage | Average area | Percentage |
| Subsistence | 5,206 | 66.3[1)] | 17,633 | 41.3[1)] |
| Borrowing | 2,652 | 33.7[1)] | 25,092 | 58.7[1)] |
| Lending | 1,665 | 24.2[2)] | 991 | 5.3[2)] |

Note: 1) Percentage for farmland (subsistence + borrowing)
2) Percentage for owned land (subsistence + lending)

**Table 9. Income Structure on the Basis of Age and Size**

Unit: KRW 1,000

| | Under 75 | 75 or over | 1 ha or over* | Under 1 ha |
|---|---|---|---|---|
| Farm household income | 30,500 | 18,700 | 28,400 | 22,300 |
| Agricultural income | 6,150 | 4,130 | 8,542 | 2,921 |
| Nonfarm income | 11,200 | 4,570 | 8,044 | 7,924 |
| Income from subsidiary business | 3,237 | 639 | 2,157 | 1,843 |
| Non-business income | 7,982 | 3,930 | 5,887 | 6,080 |
| Transfer income | 9,610 | 7,500 | 8,363 | 8,729 |

Note: * Farms with 1 ha or over mainly include rice- (31.2%), vegetable- and fruit-growing farms.

## 4.4. Medium/large-sized farms run by aged farmers (L/O)

### □ Need to foster successor farmers with an increase in medium/large-sized farms run by aged farmers due to a super aged-society

○ Most farms in Group L/O are rice-growing farms. As the trend of aging gets accelerated, the percentage of this group in the entire farm households is 17.4% in 2015, which is significantly increased from 7.8% in 2010.

- Farm household income in 2015 is KRW 37.5 million, which is increased by 11.9% compared to the previous year. The income is composed of agricultural income (45.1%), transfer income (24.8%) and nonfarm income (22.5%).
- The average farming area by Group L/O is 3.2 ha, which is large compared to small-sized farms run by Group S/Y (0.7 ha); however, farm household income of the former is rather lower than the latter.
- The percentage of subsistence farming in the farming area by Group L/O is 66%, which is the highest among four groups. The percentage of resources of agricultural production such as land is not low in Group L/O.

○ The farm household income of this group has increased, which contributes to increasing the entire income of the group.

* Farm household income: KRW 35.5 million (2010) → KRW 33 million (2013) → KRW 37.5 million (2015)

**Table 10. Proportion of Subsistence Farming Area in Each Group**

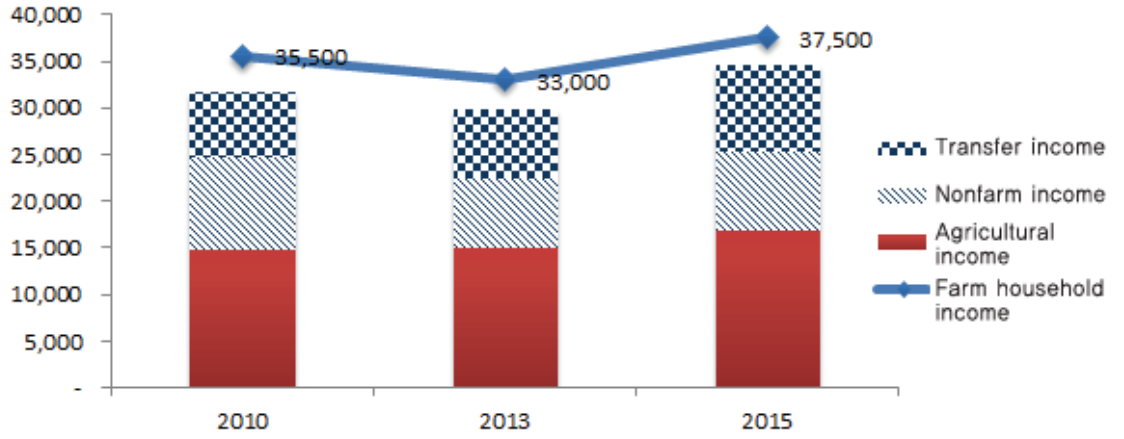
Unit: $m^2$, %

| | Group L/O | | Group S/Y | |
|---|---|---|---|---|
| | Average area | Percentage | Average area | Percentage |
| Subsistence | 21,521 | 66.0[1)] | 4,451 | 63.2[1)] |
| Borrowing | 11,065 | 34.0[1)] | 2,597 | 36.8[1)] |
| Lending | 1,826 | 7.8[2)] | 564 | 11.2[2)] |

Note: 1) Percentage for farmland (subsistence + borrowing)
2) Percentage for owned land (subsistence + lending)

**Figure 10. Income Composition of Group L/O**

Unit: KRW 1,000




○ Group L/O saw a decrease in nonfarm income by 14.0%, an increase in agricultural income by 14.2% and a significant increase in transfer income by 30% or over compared to 2010. Especially, agricultural subsidies more than doubled, which led to an increase in the percentage of public subsidies by 50% or over.

- The percentage of agricultural subsidies in public subsidies do not exceed 40%; however, it is on the increase due to the expansion of direct payment.

* Meanwhile, this percentage in Group S/O is on the continuous decrease－about 10% as of 2015.

## □ Enhancement of productivity and support for successors

○ Due to the elderly age of farmers, this group is expected to have difficulty in raising productivity despite the medium size of farming.

- Indeed, the farm household income of Group L/O is the average level of entire farm households; however, these farms run by aged farmers are vulnerable in terms of productivity.
- Compared to young farm households in the similar size, rice-growing farms have low land productivity and fixed capital productivity.
- In case of vegetable-growing farms, difference between groups expanded.

○ As Group L/O has a high percentage of resources of agricultural production, it is required to carry out policies to enhance productivity with organization and resolve difficulties in management.

**Table 11. Comparison of Productivity in Rice-growing Farms**

Unit: KRW 10,000, KRW/$m^2$

| | Rice-growing farms in Group L/O | | Rice-growing farms in Group L/Y | |
|---|---|---|---|---|
| | 2010 | 2015 | 2010 | 2015 |
| Agricultural added value | 1,820 | 2,500 | 4,340 | 6,310 |
| Land productivity | 671 | 717 | 1,187 | 995 |
| Fixed capital productivity | 606 | 665 | 1,021 | 932 |

**Table 12. Comparison of Productivity in Vegetable-growing Farms**

Unit: KRW 10,000, KRW/$m^2$

| | Vegetable-growing farms in Group L/O | | Vegetable-growing farms in Group L/Y | |
|---|---|---|---|---|
| | 2010 | 2015 | 2010 | 2015 |
| Agricultural added value | 2,580 | 3,380 | 5,830 | 7,070 |
| Land productivity | 691 | 1,179 | 1,922 | 2,276 |
| Fixed capital productivity | 751 | 1,065 | 1,652 | 2,003 |

○ In addition, 60% of Group L/O have no young household members in their 40s to 50s, who can succeed them, in 2015. In terms of the maintenance of farming basis, proper policies should be offered.
- 40% of this group have household members at the age of 25-65.
- Indeed, the average income of farms with young household members is KRW 45.2 million, which is about 1.4 times higher than farms without young household members.

○ As there is no household member who can be a farming successor in over 80% of super-aged farms in which farmers are at the age of 75 or over right before retirement in Group L/O, it is urgently needed to establish policies for successors.

# 5. Conclusion

○ The farm household economy has been in recession with the stagnant agricultural income for long years and the enlarged income gap between urban and rural areas due to the opening of the agricultural product market. The nonfarm income significantly contributed to the increase in farm household income until the late 2000s, but it has been stagnant due to the aging farming population and economic recession, leading to the slump in the farm household economy.

○ Nevertheless, the recent increase in agricultural income boosted the rate of increase in the income of Group L/Y, including specialized farms, and transfer income has also been on the rise, contributing to the recovery of the farm household economy.

○ According to the result of the analysis, which classified farm households into four groups based on farm managers' age and farming size, the proportion of Group L/Y increased by 3%p for the recent five years, taking up over 15% of the total farm households. Their high rate of increase in income is leading the growth of agriculture.

- The proportion of Group L/O remarkably increased due to the trend of the aging population, while the proportion of S/Y showed a noteworthy decline, calling for the examination of income stabilization policies for these groups.

○ Although the government policies for structural improvement and competitiveness reinforcement had a positive effect on Group L/Y, there still should be measures for business management stabilization for this group to gradually grow into large-sized, specialized farms, considering those in management risk with over 20% of debt ratio.

○ For Group S/O, various policies should be provided by strengthening welfare policies such as the basic living security system, securing stable markets for small volume of products, nurturing the joint 6th industry businesses for communities, and creating nonfarm income sources through local-level policies such as the promotion of local food.

○ For Group S/Y with weak farming infrastructure, it is important to support them to secure stable nonfarm income sources by creating jobs in rural areas, thereby maintaining the groundwork for rural communities, but it is also desirable to encourage part of farm households to increase their agricultural income by expanding their farming scale.

○ For Group L/O, it is crucial to organize producer groups to enhance productivity and increase agricultural income, and it is also necessary for them to find successors to maintain their production infrastructure.

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