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SUSTAINABLE ENTREPRENEURSHIP: AGRARIAN POLICY IN SOUTH KOREA

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Abstract. This paper focuses on the issues of sustainable entrepreneurship using an example of South Korea (also known as the Republic of Korea). Mainly, it is tackling the problem of preserving the vulnerable agricultural sector and its social structure according to South Korean general course for increasing the openness of the economy. We build upon the historical approach, economic and comparative analysis in order to classify and formulate the features of the South Korean agrarian model. Moreover, we analyze how this model is applied for the stages of the state agricultural policy, including the foreign trade component, domestic support measures for agriculture. Our results reveal the importance of the gradualness and flexibility of the transition to a market efficiency model with the active use of non-market methods and the preservation of selective protection of the domestic market from commodity imports. It becomes apparent that following the FAO approaches to the concept of food security, South Korea uses the policy of combining self-sufficiency and imports, increasingly diversifying the structure of consumed food products.

Keywords*:* agrarian policy; sustainability; entrepreneurship; cooperation; foreign trade; agricultural products; South Korea

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JEL Classifications: R5, Q1

1. Introduction

South Korea (also known as the Republic of Korea) has long been an example of well-functioning market forces and impeccable merge of sustainable development and entrepreneurial growth. One of the keys to its success is the agrarian policy that is worth of further studying, analyzing and adapting for other countries wherever it might be useful and relevant (Janda et al., 2013; Chamberlin, 2015; Abrham et al., 2015; Niño-Amézquita et al., 2017, Zemlickiene et al., 2017; Tvaronavičienė, Razminienė 2017; Skrypnyk et al., 2018, Suleymanova, 2009). The relevance of our paper is determined by our interest in the Asian mode of production in the context of studying the most traditional sphere of activity - agriculture in the transition period of economically developed countries to a new technological order and a dynamic change in the rules of operating in a foreign trade environment. Rapid industrialization and development of the service sector leads to a change in the structure of Korean GDP, not in

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favor of agriculture. This creates an impression of the insignificance of this field of activity, of its retreat into the background of the strategic priorities for the development of South Korea. Meanwhile, Koreans, who have survived the period of wars and occupation, trade blockade, hunger and poverty, are familiar with the geopolitical aspects of the country's food security. This makes South Korea both similar to some countries (such as for example Central and Eastern European countries (see e.g. Koudelková et al., 2015; Cieślik et al., 2016; Vojtovic, 2016; Vasylchak and Halachenko, 2016; Simionescu, 2016) and unique in its peculiarity and the way of life.

The natural factors of South Korea are such that historically the country is dominated by the land-saving technological method of agricultural production. Less than 20% of its land is arable (Korean Statistical Information Service, 2017). Industrialization and urbanization have intensified the problem of land shortages. In this regard, the most important development of agriculture in South Korea was initially the increase in land productivity, not the growth of labor productivity. Micro-farms are specific for the agro-sphere of this country: the average area of cultivated land per 1 worker is 1.4 hectares. By the value of this indicator, South Korea is between Japan and China, respectively, 3.4 and 0.3 hectares (Table 1). The number of employees per 100 hectares is 70 people, while in China the number is 395 people. In all the countries under consideration, especially in China, there are problems of agrarian overpopulation. The industry has relatively high capital intensity: in Korea, 9.5 thousand dollars of fixed assets account for 1 hectare, 7.6 - in China, and 53.2 thousand dollars in Japan. In the countries of classical labor saving this level is fundamentally different. For example, in Canada, the employee's assets stood at 317.8 thousand US dollars in 2013 (Rastyannikov and Deryugina, 2017) The level of labor productivity in South Korea is higher than China's average values: 25.1 and 1.2 thousand dollars per capita, but almost two times lower than in Japan - 46.5 thousand dollars. The productivity of land (for all crops), on the contrary, in the Republic of Korea has a higher value: 17.6 and 13.6 thousand dollars per hectare respectively.

Table 1. Indicators of agricultural production in Japan, South Korea and China, 2013

Indicators	Japan	**South Korea**	China
Workable area per 1 worker, hectare (ha)	3,4	**1,4**	0,3
Number of workers per 100 ha, people	29	**70**	395
Fixed assets for 1 worker, thousand dollars per capita*	182,3	**13,5**	1,9
Fixed assets per 1 ha, thousand dollars	53,2	**9,5**	7,6
Fertilizers per 1 ha, kg	236	**316**	484
Labor productivity, thousand dollars per capita*	46,5	**25,1**	1,2
Gross productivity per 1 ha, thousand dollars	13,6	**17,6**	5,0

Note: *in 2005 prices
Source: FAOSTAT, UNCTADSTAT (2017)

Initially, South Korea was formed as an agrarian country. The share of agriculture (including fisheries and forestry) in GDP exceeded 30%. The share of employed in this sphere is more than half of all employees, and not less than 80% if employed in related industries are included. Industrialization, and then outstripping the growth of services, radically changed the economic structure of the country of morning freshness. By 2017, the share of agriculture has fallen to 2.2%, the share of employed – up to 5% (10 times) (World Bank and OECD National Accounts data, 2017), see Figure 1.

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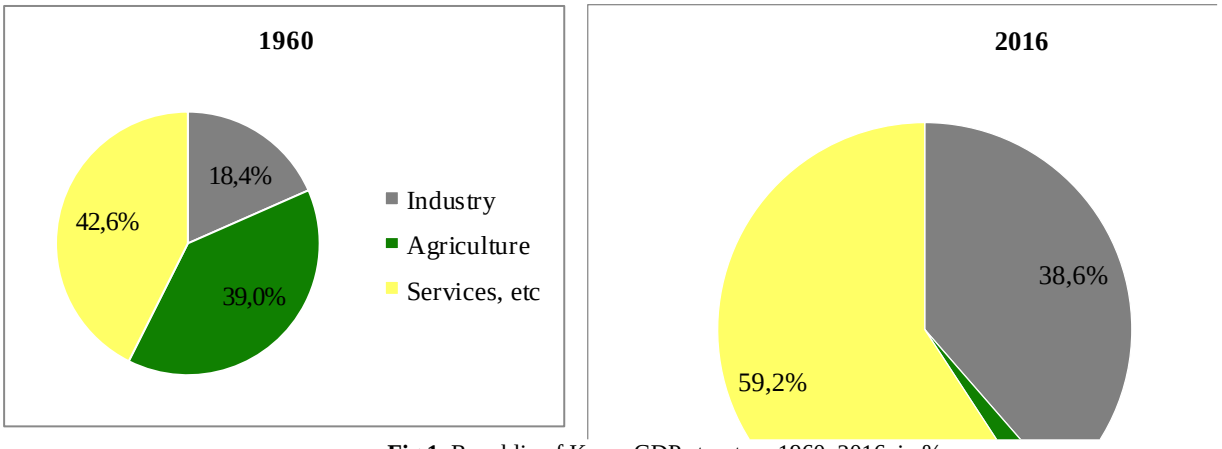

Fig.1. Republic of Korea GDP structure 1960, 2016, in %
Source: World Bank and OECD (2017)

Reduction of relative indicators was accompanied by a significant increase in absolute ones. In particular, the volume of agricultural production increased from 1.433 billion US dollars in 1950 to 28.153 billion dollars in 2017 (World Bank, 2017; OECD, 2017). On the productivity of rice, South Korea is in the top 10 countries of the world, ahead of Japan and China (Figure 2). The forecast of the productivity of rice grown in South Korea depends to a large extent on possible climate changes and related solutions to irrigation problems (Yoon and Choi, 2017).

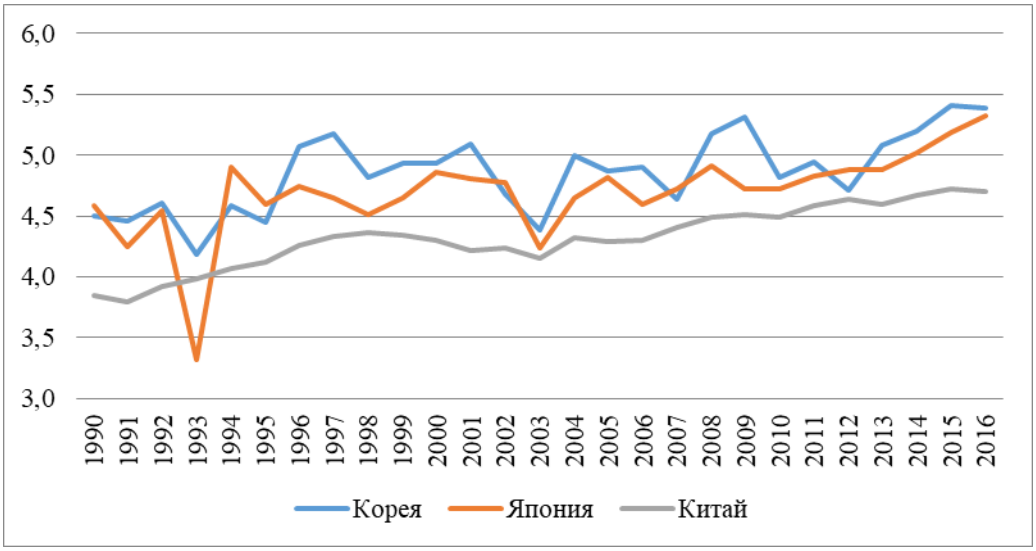

Fig. 2. Rice yields, ton / ha
Source: OECD-FAO Agricultural Outlook 1990-2027

The social and economic importance of the agrarian sphere is measured not only by quantitative, but also by qualitative indicators (see e.g. Chiabai et al., 2014; Jiroudková et al., 2015; Ehrenberger et al., 2015; Vojtovic, 2016; Simionescu et al., 2016). The multifunctionality of agriculture predetermines the constant focus of the state on this sphere of activity.

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2. Agrarian policy transformation in South Korea

It is important to consider the transformation of the agrarian policy of South Korea, including its foreign trade component. In the 1950s and 1960s, the legal framework for reforming agriculture was being created. According to The Farmland Reform Act of 1949 and The Basic Agricultural Law (1967), the central link in the transformation was the redistribution of agricultural land in favor of self-employed farmers (the principle of self-tilling). To prevent the accumulation of agricultural land in the hands of speculators, the purchase of land with an area of more than 3 hectares by non-agricultural entities was limited.

The world energy crisis of the 1970s, connected with the growth of world prices for oil imported by the Republic of Korea, negatively affected the financial state of agriculture. A number of measures are implemented to increase the incomes of those employed in agriculture. In particular, the system of public procurement of rice operates at prices higher than market prices (including world prices); farmers are subsidized. The expansion of farm households is supported due to reclamation and land restoration. A policy is being pursued for the co-operation of small family farms, the creation of local processing cooperative and private industries, and rural infrastructure.

From 1986 to 1997, the problem of increasing land prices was solved, which overtook the growth in the efficiency of agricultural production and constituted a constraint on the consolidation of land. In this context, the Law on Regulation of Land Plots Lease (1986) is adopted. The limit of land ownership was raised to 10 hectares. Conditions for the acquisition of agricultural land have been simplified. The term "agricultural development zone" is introduced. The growth of agricultural production is accompanied by an increase in government spending 1 centner of output on subsidizing. The accumulation of deficits forces to change the policy of state support to farmers. In 1986, with South Korea joining the WTO, the period of "soft" liberalization of the Korean agricultural market continued. Structural reforms in agriculture aimed at diversifying cultivated crops and increasing the marketability of farms. In 1996, the Farmland Act was adopted, which became the basic legal document regulating agricultural activities.

In the period of 1998 - 2017, a number of external events influenced the state policy of the Republic of Korea. In 1998, South Korea was involved in the Asian financial crisis. It caused a significant devaluation of the national currency, a series of bankruptcies on the Korean Stock Exchange (KSE), a decline in GDP in general and in the agricultural sector in particular. The way out of the crisis is connected with obtaining loans from the IMF. In 2008, the economy of South Korea sank under the impact of the global financial crisis.

Within the framework of the export-oriented model of South Korean economy development, imports dominate in the foreign trade turnover of agricultural products that correspond to the trends of China and Japan (Figure 3). The values of the foreign trade balance of this group of goods are in the negative zone. In South Korea, the excess of imports over exports tends to increase comparing to the data of the 1980s and 1990s.

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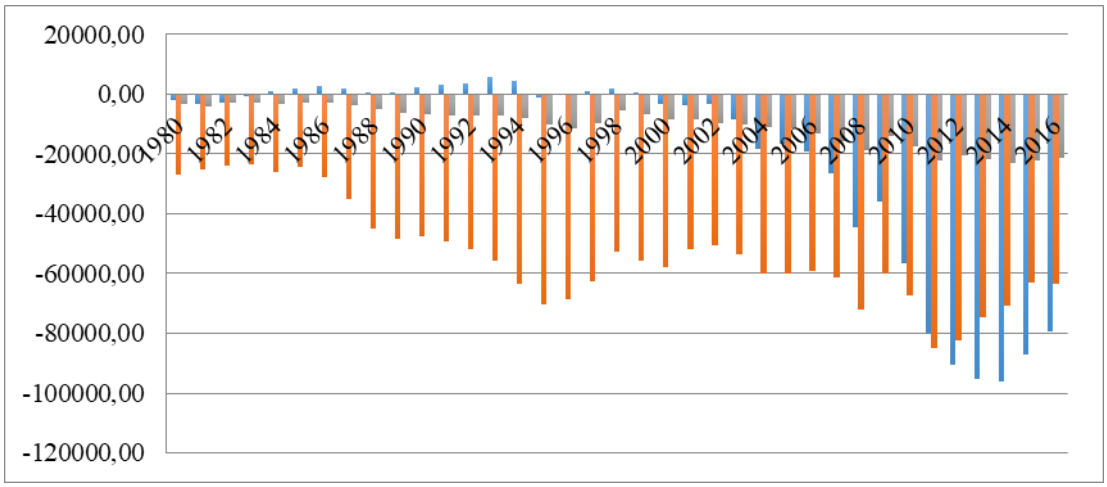

Fig. 3. Export and import balance of agricultural products, millions USD (in current prices)
Source: WTO Statistics Database (2017)

The export of Korean agro products is limited by the relatively high level of state support for the domestic producer, especially the rice farmers' households. Agrarian reform in recent years is aimed at reducing the overall support to agriculture (TSE) of South Korea in percentage of GDP: from 8.6% in 1986-1988 to 1.7% in 2014-2016 (Figure 4).

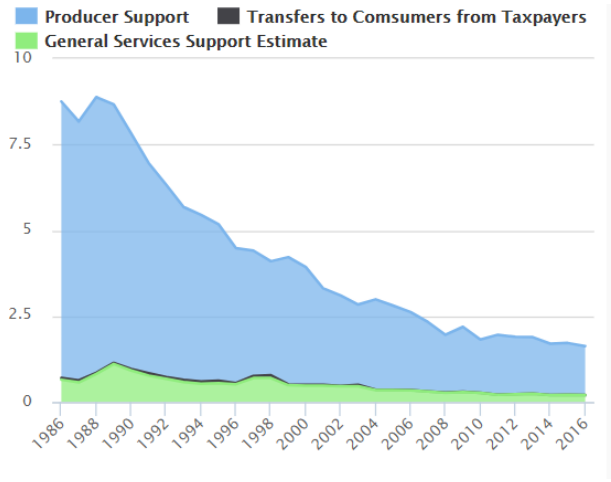

Fig. 4. Korea's Total Support Estimate, % of GDP
Source: OECD (2017)

However, at 49% producer support expressed as a share of gross farm receipts (% PSE) is still 2.5 times higher than the OECD average. The market price support (MPS) has been the dominant element in the support to farmers. Even though the ratio of producer price to border price has declined from 3.3 in 1986-88 to 1.9 in 2014-16, the share of the MPS in the PSE shows only a very moderate decrease from 99% to 92% for the same period. The transfer to individual farmers represents 87.4% of the TSE, while support to general services (GSSE) takes up 12.5% of the TSE. The expenditure on the development and maintenance of infrastructure accounts for 52% of

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the GSSE, followed by the agricultural knowledge and innovation system. For South Korea (the same as for Japan), state support for the development of agriculture is combined with the support of rural residents and rural settlements, which brings together the strategies for modernizing the village of the two Asian countries (Xin, S., Chaoyang, S., Mo, L., 2017).

In the Republic of Korea, the agrarian reforms are implemented against the backdrop of increased participation of the South Korea in the regional integration of countries in the format of free trade zones (FTAs). By 2017, South Korea has signed sixteen free trade agreements, which cover more than 70% of its exports. Meanwhile, South Korean agriculture has relatively low competitiveness. Mutual opening of borders creates significant risks for Korean farmers. During the ratification process of the Korea-Chile FTA in 2004, a Law for Implementing Free Trade Agreement established a W 2.1 trillion fund to compensate some retiring fruit producers (of grapes, kiwis, peaches) who affected by the Korea-Chile FTA, had to close their farms, as well as to enhance competitiveness so as to enable the fruit industry to respond rapidly to the changes in consumption patterns. Between 2004 and 2007, W 698.8 billion was disbursed, of which W 642.2 billion (53.5% of total fund) was used).

The impact of accession to the FTA on agriculture is the subject of research by a number of authors in South Korea (see e.g. Jeong et al., 2017). In March 2012, the Free Trade Agreement between the United States of America and the Republic of Korea (KORUSFTA) entered into force, which fits into the strategy of "rebalancing" U.S. forces in favor of strengthening its influence in the ATR zone. For more details on the policy of "rebalancing" (see Manyin et al., 2012). Negotiations were long, partially because of the tough position of the U.S. regarding the liberalization of the Korean agrarian market. In 2007, the average customs tariff for imported agricultural products in the Republic of Korea was 49% or about 4 times higher than in the U.S. (Country Profile for Republic of Korea, 2017). In the search for mutual compromises, rice was removed from the obligations of South Korea to liberalize the agrarian market. In turn, the US side insisted on lifting the ban on beef import to South Korea, introduced by Seoul in December 2003 to defeat spongiform encephalopathy virus. The skeptical attitude of the new US President D. Trump to the regional institutions was reflected in his assessment of the results of the KORUS agreement. In particular, in September 2017 D. Trump resumed attacks on a bilateral FTA with South Korea, considering it to be disadvantageous for the United States (U.S. policy in East Asia during the administration of Donald Trump, 2017).

On June 1, 2017, the People's Republic of China and the Republic of Korea signed an agreement on free trade. That will lead to an increase in mutual trade turnover, including agricultural products, and to the gradual involvement of the Korean economy into the yuan zone. The free trade zone (FTA) between the Eurasian Economic Union and South Korea will be created mostly for mutual investments in the economies of countries. The new regime will not work until 2019 (Grigoryeva, 2017).

Despite the government costs associated with farming in the FTA, South Korea remains committed to the values of multifunctional agriculture. We support the position of authors (Lee et al., 2017) about impossibility to introduce this sphere of activity into the framework of purely market relations in the future. The strategic direction of the agricultural policy is to improve the quality of rural life by developing social security for rural people, expanding social farming, creating jobs in rural areas, developing infrastructure and aesthetics of landscapes, decentralizing governance by strengthening the role of rural communities, introducing safe innovations of the new technological order into rural business, expansion of international, including inter-Korean, cooperation in the agrosphere. With regard to the above, the tendency to move people from the city to the countryside is interesting, because of a decrease in GDP growth rates and an increase in the craving for life in an environmentally clean territory. In addition, rural tourism is developing in the Republic of Korea. For example, MAFRA (The Ministry of Agriculture, Food and Rural Affairs) developed and launched a program of study tours for foreign tourists, including visits to farms and rural settlements, local markets, picturesque rural places to get acquainted with the

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traditional Korean culture. The tour program is linked to the 2018 Winter Olympic Games (Mafra, 2017). Some areas of the modern agrarian reforms of the Republic of Korea will be described later in this paper.

3. Transformation of business units of agricultural production

The main business units in agriculture in South Korea are family farms, farmers' cooperatives and cooperative associations. The Agriculture and Rural Communities Basic Act (1998) defines the owner of the farm as an entrepreneur if it meets one of the following criteria: it processes more than 1000 m2 of farmland; annual sales of agricultural products is more than 1 million Korean wons; engaged in agricultural activities more than 90 days a year.

Since 1970, there has been a process of reducing the number of farms and increasing the land plot for one farm. The differentiation of family farms in terms of land area and income has increased. The share of relatively large family farms of more than 3 hectares increased from 4.7% in the total number of farms to 8.7% in 2014. The share of small plots with an area of less than 0.5 hectares increased, respectively from 30.4% to 42.9 %. On the contrary, the share of plots with area from 1 to 2 hectares decreased significantly from 27.9% to 18.5%. It was these areas that became the base of growth for the other two groups. This process is directly related to the change in the share of leased agricultural land in the total volume of cultivated land: from 17.8% in 1970 to 50.0% in 2013 ("Agricultural Resources and Structure, Agriculture in Korea", n.d.). A large part of the leased agricultural land belongs to non-farmers.

Reproduction of the farmer's family is the most important element of sustainable development of the Korean agriculture. In this sense, the aging of the rural population, the imbalance in sex and age, the lack of a successor in many households remain a serious problem, mainly because of the outflow of youth to the city. The aging of the population, in addition to the deterioration in the quality of the labor force, raises the issue of a flexible retirement schedule and the creation of an acceptable pension system for older farmers. The direction of the migration flow is related to the increase in the income gap between urban and rural residents. Until the middle of the 1990s, the incomes of farmers accounted for 90% of the incomes of the townspeople, in 2016 – 63.5%. Changes in the structure of incomes of farm households are characterized by the predominance of non-agricultural incomes. So, as of 2016, the income from agriculture was only 27.1%, and non-agricultural incomes and transfers – 41.0% and 23.6% respectively. Differentiation of farm income is associated with high inequality in non-agricultural income, which is especially important for elderly farmers (Woo, B., Lim, S., Lee, D., Lee, H., Han, B., November 30, 2017).

The key to successful reform of agriculture is in the transformation of business units of agricultural production. Overcoming the limitations of a self-sufficient growth model and ensuring market competitiveness of family farms is done through their voluntary and multilateral cooperation. The role of mutual lending is especially high. Cooperation in this area allowed overcoming the enslaving conditions for financing peasants and significantly expanding the opportunities for agribusiness (Nikolaeva, 2014). The integration of the financial market and the development of Internet banking created preconditions for banking operations on a national scale through the system of the National Agricultural Cooperative Federation (NACF) (Kotova, 2014). There has been a trend to include farm households and their cooperatives in larger production organizations and corporate systems. It is caused by a reduction in the advantages of manual labor of the family farm under conditions of mechanization and automation; the need for managerial skills and flexible marketing strategies in an environment of volatile business conditions. The farmer should focus on creating added value in agriculture. He is surrounded by service organizations and business structures that support the production process and sales of products. "Agricultural sectoral clusters" are being formed, which include related industries, universities and research institutes, local government. With the support of the state, local distribution and shipping organizations are set up for joint

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storage, processing, transportation, sale of farm household goods. NACF forms a marketing system, including product branding.

4. State regulation of agricultural production

Currently, the conjuncture of the domestic rice market is characterized by excess of supply over demand. For this basic culture, complete self-sufficiency was achieved by the end of the 1990s (Table 2 that follows).

Table 2. Ratio of Food Self-Sufficiency in Korea (Overall), %

Years	Average	Rice	Barley	Wheat	Corn	Soybean	Potatoes	Others
1995	29.1	91.4	67	0.3	1.1	9.9	98.4	3.8
2000	29.7	102.9	46.9	0.1	0.9	6.4	99.3	5.2
2005	29.4	102	60	0.2	0.9	9.7	98.6	10.0
2010	26.7	104.6	26.6	0.8	0.8	8.7	98.7	7.8

Source: APIP-APEC (2018)

The level of food consumption of rice per capita in South Korea has reached its medical standard (Figure 5). Further, based on the growth in income of the Korean population, there is an almost twofold decrease in consumption of this product from 119.3 kg per capita in 1990 to 61.6 kg in 2016, and approaching the level of consumption in Japan. There is a process of diversification and westernization of the diet of Koreans. The consumption of meat and meat products, vegetables and fruits is increasing (Figure 5).

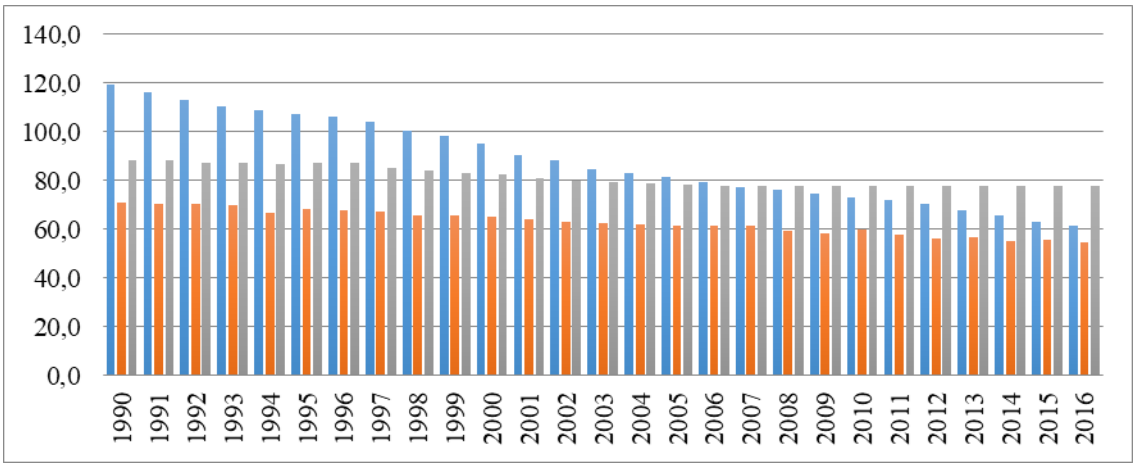

Fig. 5. Consumption of rice per capita, kg
Source: OECD-FAO Agricultural Outlook 1990-2027

Based on the described above, rice production was stabilized with a gradual decrease in the area of land allocated for sowing this grain crop (Figure 6).

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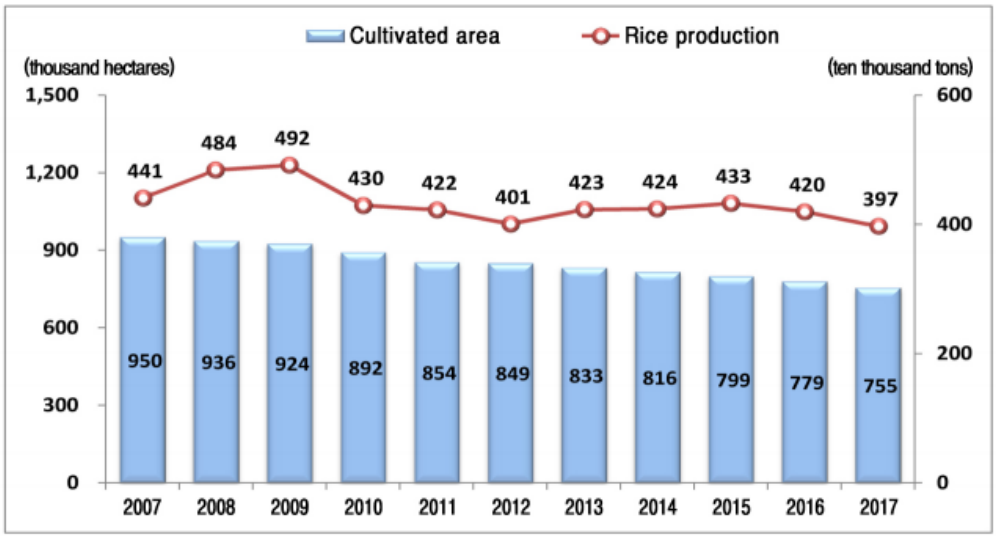

Fig. 6. Rice production in 2017
Source: Statistics Korea (2018)

For a long time, the domestic rice market was closed for import. As self-sufficiency is achieved, market access is being opened, but the quota system continues to operate, despite the charging procedures for other agricultural products. In terms of WTO membership, the RoK has postponed the reduction in import tariffs for rice and retained limited access to the domestic market between 1995 and 2004 through the quota mechanism: 1-4 % of the base year (1988-1990) of consumption at 5 % tariff rate. Since 1995, rice imports have increased from 121,600 tons to 305,700 tons in 2015 (OECD-FAO Agricultural Outlook 1990-2027, 2017). Deliveries were mainly from the PRC, as well as from the US, Thailand and some other countries. During the negotiations on rice issues with rice importing countries, the RoK has committed to expand the quota from 4% to 7.966% of domestic consumption, provided that the tariff reduction will be delayed for 10 years. The import procedure included a tender for public procurement, with reference to the import quotas of each supplier country. Since January 2015, the Republic of Korea has replaced non-tariff measures to regulate access to the domestic rice market at a tariff rate of 513%. The minimum tariff quota of 408.7 tons of imported rice is supported by a tariff rate of 5%. (Producer and Consumer Support Estimates database, 2017).

In the administration of the fullness of quotas, the role of the state is great not only in South Korea but also in Japan. At the same time, commercial considerations and the transparency of quota coverage are of concern (Choi and Sumner, 2000). In general, after joining the WTO, the amount of rice imported into the South Korea increased significantly. The balance of commodity turnover of rice (in physical terms), since 2006 has been steadily negative (Figure 7). According to OECD-FAO Agricultural Outlook 1990-2027, the excess of rice imports in South Korea over its exports amounted to 478 thousand tons. (2016) and is comparable to the magnitude of the balance in Japan.

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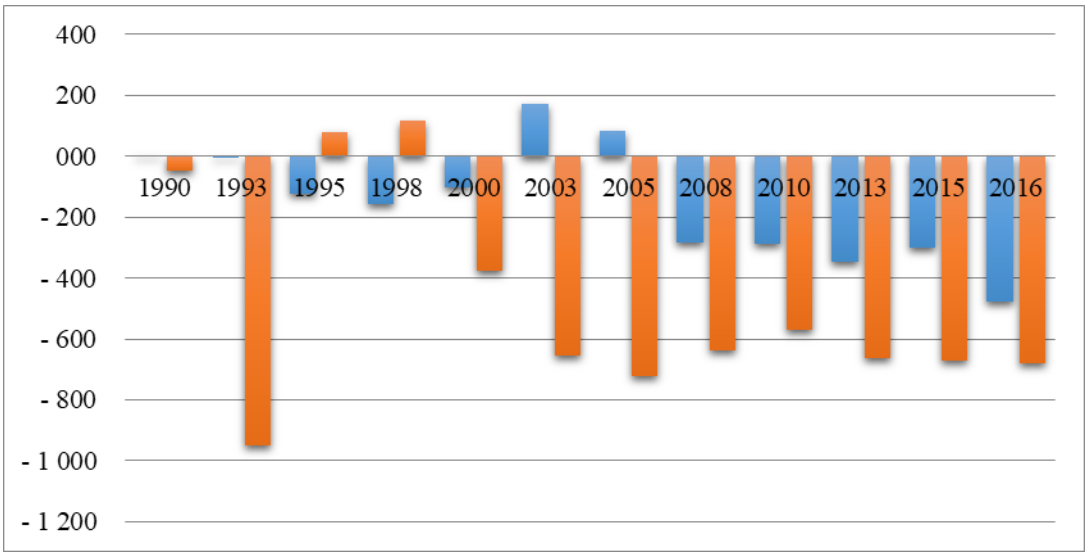

Fig. 7. Export and import balance of rice, thousand tons
Source: OECD-FAO Agricultural Outlook 1990-2027

Since the foundation of the country until the first half of the 1990s, the government had encouraged the cultivation of rice in order to achieve self-sufficiency. Stimulation was carried out mainly due to high purchasing prices for rice, which exceeded the market level. The state purchased from 22 to 30% of the total domestic production. After joining the WTO in 1995 and overproduction of rice, the government intends to reduce domestic subsidies. In accordance with the five-year plan for 2016-2020 measures are planned for balancing supply and demand. These include the reduction of rice paddy fields, the promotion of diversification of cultivated crops, the use of high-quality seeds, the use of the mechanism of government intervention, the development of the Korean National Food Cluster focused on exports (Foodpolis). The cultivation of environmentally friendly rice, free of pesticides, and the non-use of GMO seeds were emphasized.

5. Sustainability of agricultural production

Since 1994, the legal framework for the development of ecologically clean agriculture has been formed in South Korea. The system of direct payments for the introduction of environmentally friendly farming practices was introduced in 1999. Minimization of the use of chemicals and the processing of livestock farm waste are encouraged. According to the data of the Korea Rural Economic Institute (KREI), about 30% of cereals are currently certified (without pesticides). Direct payments per 1 hectare are made for the production of an organic product; product grown without the use of pesticides and with low pesticide content. There is a program to combat pests of agricultural products based on the use of natural enemies (biological control of pests). Farms that use organic fertilizers are supported, as well as stores that sell environmentally friendly products (EFP). Financing is carried out from the federal and local budgets. Economic measures to stimulate EFPs include subsidies, regulations and environmental taxes. State ecological programs for the development of agricultural zones, cultivation of water-purifying crops, such as lotus, are being implemented. Environmental management in rural communities is purposefully developing. However, the level of ecologization of agricultural production in South Korea is insufficient. In the country it is forbidden to grow GMOs of plants and animals, but their import is allowed. The report on monitoring the environmental impact of the GMO (National Institute of Ecology, NIE) showed that in 2013 GM maize and cotton were found throughout the country. The danger of mixing and germinating GMO seeds, their possible harmful effects on the ecosystem and poor control over GMO products raises serious concerns for both farmers and consumers (Choi, 2015).

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6. Conclusions and discussions

In a generalized form, the main features and trends in the development of the agricultural sector of the Republic of Korea can be reduced to the following statements. There is an essential role of the state, which is developing agricultural strategies for the five-year plans, and local self-government bodies. Reforms of agriculture, taking into account the level of development achieved and the priority of preserving the fragile social structure of rural areas are flexible and gradual. Constant direct and indirect support of the domestic producer is done with a gradual shift in the emphasis of support: a shift from direct to indirect payments, from measures of the "yellow basket" to measures of the "green basket", which according to WTO rules do not require a reduction. Selective protectionism is applied with preservation of domestic rice market protection, which remains the basic culture of Korean plant growing. Reaching self-reliance in rice consumption and increasing self-sufficiency in a number of other grain and grain-bean crops is carried out along with the expansion of rice exports and imports of forage crops to develop the forage base of Korean livestock.

The main economic entities of Korean agribusiness are small family farms, united into multifunctional cooperatives of different levels, as well as cooperative associations integrated into the National Association of Agricultural Cooperatives (NAAC), supported by the state. The role of loans coming through the NAAC system to primary farm households is very significant. The most important trends in the development of agriculture in South Korea are: the enlargement of the area of a land plot that is farmed by one farm household, including through leasing, with a reduction in the number of family farms and the growth in their fund-raising ratio; segregation of industries using intensive technologies, environmentally friendly technologies and organic production. There is a decrease in the share of the land occupied by rice, in favor of growing other crops, vegetables (including indoor soil), fruits, as well as livestock development. The above-mentioned peculiarities made it possible to combine modern European technologies of production, storage, transportation, processing, sale of agricultural products with the traditional social structure of Korean rural communities and settlements.

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