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Agricultural education using space technologies

Stefany F. Levek

PhD in Technology,
Illinois Institute of Technology,
60616, 10 West 35th st., Chicago, Illinois, United States of America;
e-mail levek@mothe.edu

Abstract

The agro-industrial complex is the main component of the Russian economy, where the country produces products that are urgently needed for the country, and a considerable economic potential is concentrated. Agriculture, undoubtedly, is a complex multifunctional system of macroeconomics, in which industry and agriculture are narrowly combined. The core basis of Agriculture is the connection of manual, non-mechanized labor with automated and mechanized production methods. This determines the socio-economic importance of agriculture, consisting in the combination of rural and urban life, in the difference of mentalities, cultural traits that form the preferences and needs of people working in this complex. The organization of work of machine-building direction in agricultural sector and satisfaction of demand of agricultural producers with technical mechanisms - the main priorities of material and technical part of agroindustrial complex. The fullness of agricultural machinery complexes is reduced. Over the past five years, there has been a decrease of 20% in the provision of tractors, harvesters for harvesting crops, special mowing plants, units for ensuring milk yield, cultivators for plowing land. In addition over these five years by 25; the fleet of machines for harvesting sugar beet, seeding plants, harvesters for harvesting fodder crops, plows has thinned. In this regard, it is urgently necessary to slow down this trend. For this purpose it is required to buy more than 20 thousand units of tractor equipment, equipment for harvesting grain crops in the region of 8 thousand units, combines for harvesting fodder crops in the amount of 2 thousand units. This is many times higher than the volume of procurement that is carried out today, but if this problem is not solved, then tomorrow it may reflect on the fall in crop volumes and food production.

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Education, development, space, agricultural sector, formation.

Introduction

Let us examine in detail the policy measures on import substitution on the main characteristic features.

1. By the nature of influence

In the most General sense, measures are all government influences directed at the implementation of import substitution policies. All measures are divided into protective and stimulating.

Protective measures are aimed at defending the interests of domestic companies and their protection from the strongest foreign competitors through the organization of restrictions in trade or influences aimed at reducing the competitiveness of foreign goods in the domestic market. These measures are divided into compensatory and protectionist.

Compensatory measures are used to neutralize the negative impact of the protectionist policy of a foreign state. They contain antidumping tools, compensating duties, trade quotas and other measures of protection of domestic producers.

Protectionist measures are a deterrence of foreign activity and the organization of conditions that ensure economically unprofitable delivery of products to the customs zone because of the fallen competitiveness.

Stimulating measures are used to raise the competitiveness of their goods relative to foreign ones (for example, the inclusion of special tax and trade procedures, the introduction of subsidies to producers). They are divided into supporting and developing:

- supporting measures (subsidies, tax incentives, loans from budgets) are used to preserve national production, its modernization, the production of new products to achieve the competitiveness of local goods;

- developing measures are used when there is no national production of any commodity or commodity group at all and it needs to be founded from scratch.

The latter group is divided into measures that have an internal or external funding center. The internal center of financing is often the budget, and this applies to key areas (for example, the military-industrial complex). In the commercial environment, it is more reasonable to use investments from outside when organizing the latest production, because they are usually accompanied by foreign technologies and highly qualified specialists.

2. By the power of influence of economic entities

Here, import-substituting tools can be rationally divided into formed mechanisms and used tools.

Mechanisms are measures that cause the strongest participation of the state at the initial stage and affect in an "automatic" manner all the following, until the time of their stop (the inclusion of special taxation, the introduction of barriers at customs, zones with a special economy).

The Toolkit is a set of actions that indirectly affect economic entities and are based on the constant work of state bodies, verification and correction of acts (subsidies, financial assistance, lending).

3. By breadth of influence

According to this feature, measures are divided into General and goal oriented. General measures consist in the organization of the necessary social and economic circumstances for the organization of the case and the formation of production. These include compliance with political stability, effective financial platform, the fight against corruption, increasing the level of education and science. Special measures are aimed at individual territories, regions and organizations, the production of unique goods.

4. On costs

You can see measures that cause spending from the Federal budget and do not need such. The measures of a costly nature should include those that require direct financing (subsidies, public investments) and those that do not cause direct costs (an increase in trade duties or a trade embargo can lead to a reduction in the revenue side of the budget) [46; p.144].

5. In the direction of impact

Measures taken to replace imports are aimed at both domestic and foreign producers. Most often, the policy of import substitution is based on the position: to stimulate their producers, from foreign - to isolate.

6. For the territorial division

The methods used are divided into borderless (affecting the whole country) and limited (measures, the impact of which extends only to the designated territory).

Summing up, it should be concluded that APCO acts as a system of branches of the state economy, containing agriculture and industrial areas, closely connected with agricultural production, realizing transportation, preservation, processing of agricultural products, delivering it to customers, supplying agriculture with machinery, fertilizers, organizing service in agricultural production. This definition describes the entire structure and specifics of the agro-industrial complex as a complex that contributes to the formation of the Russian economy.

Substitution of imports in agriculture should be considered a national strategy of economic development of the industry to optimize imports by helping and supporting their producers of agricultural goods, the organization of advanced production on the lands of the state, including with the involvement of foreign capital, to create or expand production of products that were previously imported from abroad. To reduce imports, a variety of tools are used for state regulation of who food imports to Russia.

Main part

In contrast, they are closely interrelated with each other, and for the productivity of the whole complex in General, the effective functioning of all its elements, i.e. any industry, is essential. The Russian agro-industrial complex includes four branches:

1. Areas making means of production for agriculture.
2. Agriculture.
3. Industries engaged in the processing of products of the rural sector.
4. Industries supplying the infrastructure of the above sectors.

Thus, the agro-industrial complex of the Russian Federation unites sectors for the production of raw materials, its conservation, processing, production of food and non-food areas: crop production, animal husbandry, fodder production, processing and food industries. The production of agricultural machinery, the harmless and efficient use of fertilizers and agrochemicals, as well as the fisheries sector are the border industries with the agro-industrial complex. The powers of the Ministry of agriculture of the Russian Federation according to the current Regulations on the Ministry are related to agriculture and the food industry, as well as to the fisheries sector. Some frontier industry, a systemic significance for the development of agriculture, do not fit the group polnomochiya Ministry that requires interdepartmental coordination of actions with the Ministry of industry and trade, the Ministry of energy, Ministry of natural resources and order other Federal organizations of the Executive, and in part of nanotehnologicheskogo formation and educational activities - Ministry of science and education of Russia.

Resolution of the Government of the Russian Federation No. 717o of July 14, 2012 adopted the State Program for the development of agriculture and regulation of markets for agricultural products, raw materials and food for 2013-2020. The project participants are the Ministry of culture of the Russian Federation, the Federal road Agency, the Federal service for veterinary and phytosanitary surveillance. The objectives of this project are as follows:

1) achievement of product independence of the country;

2) forced import substitution concerning meat (pork, poultry, cattle), milk, vegetables and fruit and berry products;

3) raising the competitiveness of domestic agricultural products in domestic and foreign markets within the borders of Russia's accession to the world trade organization;

4) the rise of financial stability of agribusiness organizations;

5) striving to eradicate poverty in the territory of the Russian Federation;

6) sustainable development of rural entities;

7) reproduction and increase of efficiency of application in agriculture of agrarian and other resources, and still ekologizatsiyao productions;

8) stabilization of the marketing sector of agricultural products, increasing its marketability by creating conditions for its seasonal conservation and part-time work.

The program is believed to reduce costs and increase profitability provenio that will raise the volume of manufactured products, increasing production to oust imported produkciya and create suitable soil for stimulating interest of investors, and this can be done using the tools of federalnogo budget and regional consideration of the purposes and help of established sub-sectors rural sector.

During the execution of the State program, an increase in the output of the rural sector and the production of food products was achieved, the economy of agricultural complexes improved, the activities of large agro-industrial sectors improved, work on the social development of rural entities began to be actively carried out. Thanks to significant investment injections and the use of innovative technologies, the recovery rate of pork production has increased significantly, and the pre - reform index has been surpassed in poultry meat.

Agro-industrial complex of the Russian Federation today in reality has become one of the few industries of the economy, which shows progress. And largely began to act as the engine of growth of the industrial sector.

Agriculture plays an important role in the country's economy; its share is brought to 6% o of the GDP of the state and 9.5%o of the number of employees. The output of the agricultural sector in 2017 reached 5.1 billion trillion. the agro-industrial complex brings significant multiplicative effects for the economy as a whole: it is estimated that each ruble invested in the agro-industrial complex, gives in the border areas in the range of 4-5 rubles.

In the current period, the agro-industrial complex is characterized by significant resistance to crisis governments, constant development. The increase in agricultural output in Russia (more than 40%o between 2007 and 2017) is comparable to the signs of countries such as Brazil and India. In 2016, the index of production output of the agricultural sector in all categories of farms was 103%, including crop production-102.9%, livestock-103.1%. And in situations of economic stagnation in 2017 it shows the growth rate of output up to 3%, which allows us to talk about its place as a socio-economic buffer, weakening the effects of cyclical functioning of the economy. As a result, the share of unprofitable associations in the rural sector decreased from 40% in 2007 to 12% in 2017

G., this is less than the average for the economy in the country (33%). Profitability of agricultural complexes (including subsidies) amounted to 22.3% in 2017; excluding subsidies-10.9%. In terms of

gross agricultural output, the domestic agro-industrial complex is at the forefront among the largest in the world. Russia produces annually more than 100o million tons of grain, more than 30 million tons of sugar beet, 30 million tons of potatoes, 15o million tons of vegetables, 8 million tons of sunflower. More than 8 million tons of cattle and poultry meat, 30 million tons of milk, 40 billion eggs are produced. According to estimates for 2015, almost 99% of o demand from the population in grain, and 84% in vegetable oils, 84 - sugar, 97 - potatoes, 81 - dairy products, 85% o - meat products.

Therefore, the country has achieved a significant level of food security, by most criteria exceeded the planned values of the Doctrine of food security of the Russian Federation.

The advantages of the agro-industrial complex of Russia over its competitors are substantially ensured by the rare agro-climatic and agro-soil potential associated with the presence of black earth soils and a fairly high index of marked temperatures in the southern part of the country. It is in the southern regions that a significant share of agricultural production is brought. The core agricultural regions of Russia are the Krasnodar region (the volume of agricultural production of the region - 366 billion rubles. in 2017), Rostov region (245), the Republic of Tatarstan (217), Belgorod (221) and Voronezh (202) regions, Stavropol Krai (188), the Republic of Bashkortostan (160), Volgograd region (130.5 billion rubles). The specifics of the agricultural complex of Russia is a significant part of private farms of residents and a small part of peasant farms in the total production. A little more than half of the total product quantities of the agricultural sector was produced in agricultural complexes (more than 2o billion rubles). A slightly smaller share (1.75 o billion rubles) - in personal structures, and a small part (0.4 o billion rubles) - in peasant (farm) farms.

Agricultural complexes now produce more than 70%of the total amount of cereals, sugar beets, sunflower seeds, eggs, livestock and poultry, while households are focused more on the intake of potatoes, vegetables, fruits and berries, as well as a number of niche products with a narrow market coverage, such as, for example, honey. Milk is produced in approximately equal shares in these two types of farms.

The core and forming basis of the agricultural complex in Russia is agriculture, which consists of a crop branch and animal husbandry within the approximate limits of 52: 48, at the same time the share of animal husbandry is gradually increasing. The volume of investments in fixed capital in animal husbandry is approximately twice as high as in crop production. Another acute link of APCO is the food industry, focused on the detailed processing of products of the agricultural sector and fisheries.

Agriculture produces more than 13% of the gross social product and more than 15%of the national income of the country.

Russia has a huge area of agricultural land, which in fact should have a positive impact on the production of agricultural products. Unfortunately, hardly 13%o of the total area is taken over by agricultural land, i.e. those territories that are used in agriculture. A significant proportion of the land is exposed to adverse conditions, 60% o arable land and 95% o pastures need protection. A considerable number of irrigated areas need rapid reconstruction.

The total cultivated land of agricultural crops in Russia is the largest in the world, but in view of the weak yield, our country breaks away at times in terms of gross output of key food crops of the agricultural sector from foreign countries, which are at the forefront here-the United States and China. The area sown by certain crops in Russia in 2017 extended to 80 million hectares, while in the United States - to 57 million hectares, in India and China - to more than 80 million hectares). In our country, in comparison with other States, there is a low yield, this applies to grain crops and legumes, it fluctuates within the boundaries of 18-24 C/ha of harvested area (in 2017, the average yield from 1 ha of harvested area was about 24 C in terms of grain) [46, p. 29]. This is one of the weakest indicators

among developed and major developing countries. The yield of such a major crop for Russia, as potatoes, is also located at the lower level-150 kg / ha, while in Brazil it reaches 278, India-228, Germany-398, USA-466 C / ha.

Plant diseases are a serious problem that causes a drop in the productivity of the crop industry, in addition to the lack of high-yielding seeds, small levels of application and lack of discipline in working with equipment during fertilization. According to the estimates of the Institute of plant protection, losses from year to year in crop production due to phytosanitary destabilization reach 303 million tons in grain equivalent. This is due to the insufficient level of application of plant protection products: in Russia, only 2/3 of all areas occupied by crops are subjected to pesticide treatment. In America and European countries, this share is close to 90 percent. At the same time, there is a significant import dependence on the influencing substances for plant protection products. The resulting global climate change, leading to the prevalence of diseases and pests, deepens phytosanitary risks. Cross-border transport of plant pathogens and pests, especially from China, Mongolia, Kazakhstan and Ukraine, poses certain risks. Another reason for the impact on the fall from year to year yields in the industry is crop instability, which stems from problems with the zoning of local varieties, their high sensitivity to extreme weather conditions, especially droughts. This seems to be a significant competitive disadvantage of the Russian agro-industrial complex on the background of countries actively applying biotechnology in crop production, in particular genetically modified varieties of wheat and other grains, highly resistant to drought.

The grain sector is the largest area of crop production in Russia and is characterized by considerable competition in world markets. Our country is in the group of the largest expotrers of grain and completely supplies its feed, processing and food industries, covering the production of alcohol and other products of biochemical processing of grain.

In General, wheat, corn and barley occupy the largest territories among the cultivated areas in our country. Leguminous and grain crops account for more than 46 million hectares or 60% of the total area sown, 22% of agricultural areas are occupied under fodder, technical crops have won back 16%, while vegetables got only 4% of the area. In spite of the fact that under vegetables such low percent of territories under sowing is allocated, in an Arsenal of plant growing they are extended in the form of the following types: beet which goes further on sugar production, potatoes and especially sunflower. A very small amount of space is devoted to fruit and berry crops and melons. Despite the fact that among the crops in vegetable production is dominated by beets and sunflowers, in General, the production of oil from it decreased by 1.1 percentage points and amounted to 84% in the whole volume. In view of the fact that recent attention in the food environment is focused on increasing the volume of domestic production, this trend has a negative color and creates risks. At the end of 2017, there was an increase in the production of sugar beet. According to VEB forecasts, sugar beet cultivation will reach 49-50o million tons in 2030 . Russia's sugar industry is mainly focused on processing its sugar beet. Production of granulated sugar from all types of raw materials in 2017 amounted to 6 million tons. All sugar beet and almost all sugar from it are consumed in the domestic market. Today, there are reserves for the growth of sugar supplies abroad, as its surpluses have formed in the country, the need for its importation from abroad is irrelevant and sometimes small. At the same time, there are systematically emerging sometimes risky situations associated with the expansion of sugar from cane to local markets, so that this does not happen, it is necessary to maintain the achieved high rates in the production of beet sugar in the territory of the state.

Let's say a few words about potatoes, which is the basis in the diet of the population in our state. All potatoes planted in the territory of the Russian Federation are sold inside the country, there is a

small demand for imported packaged potatoes of the highest grade. But this demand is small, as evidenced by the analysis: in 2017, the import of this product fell by 20%.

Vegetable farming has traditionally been a strong industry in the crop sector of our country. The total volume of harvested vegetables, melons exceeded 16 million tons in 2017. All their cultivation falls on the shoulders of private households, this is about 70%, the remaining 30 percent fall on large business owners.

The basis of the livestock sector of the agricultural sector of the Russian Federation is formed by meat and dairy cattle breeding, sheep breeding, the functioning of poultry factories, the organization of pig farms. In addition to our traditional organization of the red deer farms, the construction of Kosovars, horse-breeding, organization of farms growing fur, breeding of rabbits, construction of apiaries. The cultivation of cattle and birds for further slaughter throughout the country has steadily increased over 10 sets and in 2017 amounted to 14 million tons in live weight [46; p. 67]. A significant share of imported pedigreed and highly hybrid cattle is a systemic problem of Russian livestock production. Now the fastest in the livestock sector of the country is growing the number of poultry factories, which increases the volume of livestock produced. By 2017, it reached 550 million head, showing uniform growth in all farms in the state. Our country now compensates for the previously unsatisfied demand in the domestic market, when poultry meat was imported from abroad a lot, we begin to establish and expand export channels in this direction. Official sources predict by 2030 the achievement in production of 9.2 million tons of poultry meat. Considering poultry farming, it should be noted that there is only an increase in meat, but the production of eggs can not be proud of such volumes, this sector showed an increase of only 15%.

Significant growth is demonstrated by the pig industry. The same official sources predict the result of the industry for 20130 5,1 o million tons. The number of animals is located mainly in agricultural complexes (about 80%). The risks for the further stable development of pig breeding are delivered by a dangerous natural focal epizootic-African swine fever.

Cattle breeding (dairy, meat, meat and milk) is an industry that does not differ in the dynamics of development and causes more problems than the breeding of pigs and the organization of poultry farming. Against this background, a decrease in the number of heads to 19.5 million heads is noted in 2017 [55]. The situation is similar to what is happening in the poultry sector: the number of heads of cattle is decreasing, and at the same time the total increase in the productivity of each animal is gradually increasing, namely, milk production in 2017 is approaching 6 tons, this indicator advances the industry to the indicators for milk yield in the European Union. At the same time, despite the high milk yield in 2017, there was a reduction of young animals in the context of dairy cattle breeding, breeding young animals from the group of meat cattle breeding on the contrary demonstrated the dynamics [55]. As we see dairy and meat directions in cattle breeding are heterogeneous, and in both sectors there are positive dynamics and negative indicators, one way or another they are influenced by the situation from outside. The main problem of dairy and breeding cattle - these are the diseases that affect these animals. The worst of them is the leukemia virus, which affects cattle. The importance of this problem brings the industry closer to the introduction of quarantine in certain territorial areas where herds with sick animals are concentrated. The problem is very acute and requires immediate action in terms of its resolution.

Goat and sheep breeding are small areas in the livestock sector of the agricultural sector of the agro-industrial complex. These areas are characterized by accurate territorial gradation, i.e. breeding of these animals is desirable only in the warm regions of the country, it has historically happened that mainly these are the Northern territories of our Caucasus. The number of livestock of these animals by

2017 has grown in all cattle farms in the country to 25.5 million heads. Over the past 10 years, the volume of wool production has increased to 57 thousand tons, and the production of lamb meat - by 33%. At the same time since 2011 meat direction in sheep breeding began to face difficulties that led to a halt in the growth of meat production, caused by the lack of demand for such a number of products in the previous markets and the search for new ones.

Conclusion

The volume of our food market in the top ten among the most successful countries in this direction with a volume of more than 70 billion dollars., however, like Japan in this ten for us is characterized by a high percentage of imported products from abroad in this category, which prevents its producers to increase production and sales of the agricultural sector. In terms of the prevalence of imported food in local markets, our country is among the leaders, we are surpassed by countries such as China, America and India, but for these countries staying in this list does not make negative sense due to the fact that their population in relatively small compared to Russia territories is many times higher than the Russian one. The share of food production in our country accounts for 5 trillion. RUB, which is comparable to the volume of production of agricultural sector.

Our country is also in the top ten countries that produce feed for farm animals. The most popular products of feed orientation falls on the poultry industry, so it has always been and in all likelihood in the future there will be little change. The special feed base for poultry farms produced in our country covers the demand of farms by almost 60%. More than 20% of special feeds are produced for pig farms and only 13% are used to fatten cattle. Import substitution technologies are being introduced in the feed industry, especially where the industry does not cover the demand in the local market and there is a need to import feed from abroad. In General, the industry is significantly dependent on foreign supplies.

Next, let's see how the fishing industry operates in the country. Our country is on the fifth place in the marine capture of biological resources, there is a significant subordination of the industry to exports, which negatively affects the biology of the seas. In addition, Russia has poorly established processing of these resources, which contributes to the dominance of imports on the shelves, but the situation has improved after the introduction of sanctions and now our products occupy about 70% of the food.

The organization of work of machine-building direction in agricultural sector and satisfaction of demand of agricultural producers with technical mechanisms - the main priorities of material and technical part of agroindustrial complex. The fullness of agricultural machinery complexes is reduced. Over the past five years, there has been a decrease of 20% in the provision of tractors, harvesters for harvesting crops, special mowing plants, units for ensuring milk yield, cultivators for plowing land. In addition over these five years by 25; the fleet of machines for harvesting sugar beet, seeding plants, harvesters for harvesting fodder crops, plows has thinned. In this regard, it is urgently necessary to slow down this trend. For this purpose it is required to buy more than 20 thousand units of tractor equipment, equipment for harvesting grain crops in the region of 8 thousand units, combines for harvesting fodder crops in the amount of 2 thousand units. This is many times higher than the volume of procurement that is carried out today, but if this problem is not solved, then tomorrow it may reflect on the fall in crop volumes and food production.

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Сельскохозяйственное образование с использованием космических технологий

Левек Стефани Ф.

Кандидат технических наук,
Иллинойсский технологический институт,
60616, Соединенные Штаты Америки, Иллинойс, Чикаго, 10 West 35th st.,
e-mail levek@mothe.edu

Аннотация

Агропромышленный комплекс является основным компонентом российской экономики, где страна производит продукцию, которая крайне необходима для страны, и сосредоточен значительный экономический потенциал. Сельское хозяйство, несомненно, представляет собой сложную многофункциональную систему макроэкономики, в которой промышленность и сельское хозяйство тесно связаны. Основой сельского хозяйства является соединение ручного, немеханизированного труда с автоматизированными и механизированными методами производства. Это определяет социально-экономическое значение сельского хозяйства, состоящего в сочетании сельской и городской жизни, в разнице менталитетов, культурных особенностей, которые формируют предпочтения и

потребности людей, работающих в этом комплексе. Организация работы машиностроительного направления в аграрном секторе и удовлетворение спроса сельхозпроизводителей техническими механизмами - основные приоритеты материально-технической части АПК. Полнота сельхозмашиностроительных комплексов снижается. За последние пять лет на 20% сократились поставки тракторов, комбайнов для уборки урожая, специальных косилок, агрегатов для обеспечения урожайности молока, культиваторов для вспашки земель. Кроме того, за эти пять лет на 25; сократился парк машин для уборки сахарной свеклы, посевных растений, комбайнов для уборки кормовых культур, плугов. В связи с этим необходимо срочно замедлить эту тенденцию. Для этого необходимо закупить более 20 тысяч единиц тракторной техники, техники для уборки зерновых культур в районе 8 тысяч единиц, комбайнов для уборки кормовых культур в количестве 2 тысяч единиц. Это во много раз превышает объем закупок, который осуществляется сегодня, но если эта проблема не будет решена, то завтра это может отразиться на снижении объемов урожая и производства продовольствия.

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Ключевые слова

Образование, развитие, космос, аграрный сектор, образование.

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