

The Direction of Effective Development of Economy of Nature Management in Russia

Alexey Aleksandrovich Tikhomirov^{1*}, Arsen Azidovich Tatuev², Violetta Valerievna Rokotyanskaya¹, Alex Lvovich Kuznetsov¹ and Shahlo Anvarovna Atabaeva¹

¹Moscow State University of Food Production, 125080, Moscow, Russian Federation;
Alexey.Aleksandrovich.T@gmail.com, Valerievna.Rokotyanskaya01@gmail.com,
Ale.tsov45@gmail.com, Atabaeva.kalibar@gmail.com

²Kabardino-Balkarian State University named after Kh.M. Berbekov, 360004,
Kabardino-Balkarian Republic, Nalchik, Chernyshevskogost, 173,
Russian Federation; Arsen.Azidovich.T@gmail.com

Abstract

The issues of value chains creation during the technological structure change, especially in bio-product specifics of environmental economics to overall spectrum of scientific problems of economic theory and practice are mostly relevant. The aim of the research as the organic value chain definition and creation in the domestic environmental economy, has been formulated by the authors. During to the research work the abstract, logical, deductive, inductive, monographic, economic and statistical research methods are used. The holistic scientific conclusions on bio value chains formation are based on the methodology mentioned above. On the basis, authors have systematized the findings of a common set of problems of bio value chain formation in the domestic environmental economics (Russia).

Keywords: Bio-Economy, Biotechnology, Environmental Economics, Policy

1. Introduction

Three issues such as biomedicine, agri-products and bio-fuel generated within the 6th technological mode are in highest priority¹⁻³. The deal is interested to the scientific problems in the analysis of their introduction into the educational process of higher education, as well as in the real economy (industry) and the financial segment of the economy⁴⁻⁶.

During to the period of tightening of competition in the market of biotech and natural resources products, the reasons is not only technological advances, but the development of the regional groups of an international character are important to review not only the aspects of improving the efficiency of the organization of production, but also issues in-depth study of marketing component in the analysis of existing and future value chains of organic products⁷⁻¹⁰.

2. Methods

During to the research work authors used the following methods: Abstracts, logical, deductive, inductive, monographic, economic and statistical research method. On this basis holistic scientific conclusions on the issues of formation of value chains of organic products are made.

3. The Main Part

3.1 Current State and Prospects of Development of Russian Pharmaceutical Industry

The analyses of existed and future value chains of organic products, authors decided to start from the biopharmaceutical and biomedicines markets.

* Author for correspondence

All implemented pharmaceutical projects are within the scope of a particular concept. It is obvious that the high fiscal burden that is formed by the need to purchase expensive foreign drugs, actualized the possibility to reduce costs by establishing domestic production of essential medicines, which is particularly true for bio-similar, the cost of reproduction of which is significantly lower than the creation of innovative products Class BioBetters. This situation clearly demonstrate how the guidelines “Pharma 2020”, and the profile of the projects consisting in organizing the production of bio-similar.

It must be noted that project enhancement in the BioBetters sphere, the domestic research in the current terms are not productive. As follow up to the main thesis the situation could be described as:

- The current system is currently providing healthcare which is not conducive to the initiation of the demand for innovative medicines national development, because it is formed in accordance with international standards of therapy. Thus, the market was initially allocated to the original products, successful in the world market in the future, such drugs can be replaced by local bio-similar.
- Technically, the initiation of projects for the development and market launch of innovative drugs (active players) is associated with a number of difficulties specific to this group of drugs in general - need serious evidence of use, large-scale clinical trials and the like, which requires a very large financial investments (1 billion. €, taking into account the risks of a single sales channel, the risk of failure in the inclusion of a new drug in the structure of the software completely eliminates the commercial potential of the drug in the Russian Federation.

Thus, the current state and prospects of development of the domestic biopharmaceutical industry associated with the direction of development and production of bio-similar. Factors that contributed to the development of projects level BioBetters (especially “First in class”) currently are not allocated.

3.2 Agrobiotechnology

Aggravated at the beginning of the 21st century the problem of global food crisis has forced many foreign countries to seek innovative technologies. One of the most promising and widely implemented technologies today is the agricultural biotechnology and biotech farming.

Their achievements of agricultural biotechnology allow to develop and grow new varieties of genetically

modified crops (hereinafter - GM crops) with reducing needs for conventional crop protection products that are resistant to pesticides, capable of adapting to climate change, a shortage of moisture, with increased yield, improved nutritional properties and a longer shelf life.

The rate of agricultural biotechnology introduction is well illustrated by the continuous increase in the acreage set aside for the cultivation of GM crops. So, from 1996 to 2013 they have increased every year by approximately 31% and in 2013 reached a level of 175.2 million ha. Moreover, the number of countries engaged in the commercial production of GM crops has increased over the same period from 6 to 27 growers of GM crops annually increase its gross margin by reducing operating costs and increasing productivity of new varieties. It should be noted that in 2013 generally modified crops: 79% of soybeans, 70% cotton, 32% corn and 24% of canola produced in the world.

In Russia for many years the question of the GM crops production treated with suspicion, due to the scarcity of targeted applied research on issues of the safety of GM products, as well as complex of multi-disciplinary scientific research on the problem of defining approaches to assess the cost-effectiveness production. As a result, our country a negative situation involving are developed, on the one hand, unjustified from a scientific point of view, the ban on the GM crops cultivation and on the other hand, the legal import of GM products from foreign countries.

There resolution of the conflict in recent years, adopted a number of regulations that establish rules for handling GM crops, it become urgent problem to study and generalization of foreign experience in the field for organization and economic aspects of the GM crops production.

Every year around the world about 100 million tons of bread and bakery products, 100 million tons of beer, 40 million tons of wine, 10 million tons of pure alcohol, 8 million tons of cheese, 800, 000 tons of vinegar and over 1 million tons of baker's yeast with the participation of micro-organisms are produced. The “labor” of germs today is a huge share of these products have a high cost. The ancient biotechnological processes, that people used, gained no idea how and why they function the same way. Only our contemporaries thanks to advances in biology able to understand the causal relationships in most of these processes. Now, examined considerable detail what types of germs may be used for certain purposes as “functioning” microorganisms themselves, their

enzymes cause the minimum (cell) volume of complex transformation of substances.

Biological drugs are an indispensable element of an integrated system of growing plants. The transition of agriculture technologies with minimal risk to humans and the environment.

Segmentation of products for biotechnology industry planting consists of several basic segments:

- Plant protection obtained by biosynthesis: Microbial bio-pesticides and products based on metabolites.
- Biological growth stimulators, fertilizers and soil inoculants.

Study and generalization of world experience in production of genetically modified crops has shown that their production is characterized by dynamic development, which has provided a significant contribution to the production of major products of the food and technical purposes.

The analysis showed that the GM crops production, based on the principles of genetic engineering is the fastest growing segment of the world agriculture. Through techniques of genetic engineering of GM crops with new traits that have contributed to a substantial increase in the volume of agricultural production and generate additional revenue have been created.

During to the period from 1996 to 2013 the area under GM crops in the world has been increased by more than 100 times and reached a level of 175.2 million ha, and the number of countries engaged in the production of GM crops has increased from 6 to 27. The main countries-leaders of production of GM crops are the US Brazil, Argentina, India, Canada and China.

The rate of production of GM crops as evidenced by an increasing number of farmers engaged in the cultivation of GM crops. In 2013, their number was 18 million. People, which is 45 times higher than in 1996.

The development of agriculture, using the technology of genetic engineering, has stimulated rapid development of the market of genetically modified food products and technical purposes. The global market of GM products in 2012 was estimated at 160 billion. US dollars, whereas in 2004 it was only 44 billion. US dollars. The key importance for the development of the market of genetically modified agricultural products market of genetically modified seeds (including the provision of essential services and the payment of royalties collected through technology) in 2013 amounted to 15.6 billion. US dollars, whereas in 1996 it was only at the level of 90 mln. US dollars.

The most common legally allowed GM crops in the world use in food, feed for animals and processing, can be attributed GM soy, GM corn, GM cotton and GM oilseed rape. The largest amount of acreage today is GM soy. In 2013, actually under cultivation of GM soy was allocated - 48.2% (84.5 million hectares) of the total area occupied by the world's GM crops. The share occupied by crops of GM maize was 32.7% (57.4 million hectares), GM cotton -13.6% (23.9 million hectares) of GM canola - 4.5% (8.2 million hectares). Thus, as of 2013 79% of soybeans, 70% cotton, 32% corn and 24% of canola produced in the world is genetically modified. In accordance to the exist information, a special place in world production of genetically-modified agricultural products takes GM maize production - 362.5 million tones (62% of the total agricultural production accounted for GM crops); into the same culture in 2001-2011. It marked the highest average annual growth rate in production (18%). Overall, the average annual growth rate accounted for all GM crops is 14%.

In the medium term, provided that the trends in world agricultural production of GM crops will continue to increase the size of the acreage occupied by these crops and their production volume. Forecast of development of global production of GM crops (GM soy, GM maize, GM oilseed rape and GM cotton) until 2020 on the basis of trend forecasting model using predictive software complex "FAR-FOOD-AREA" (FFA), developed and test the All-Russian Scientific Research Institute of Economics and standards, it showed that the amount of acreage could reach 250 million hectares Share acreage of GM crops in relation to the traditional reach 100% of GM soy and GM cotton, and scored on GM maize and GM oilseed rape. The main increase in the acreage of GM crops is expected in the North American and Latin American regions, by increasing the acreage of GM crops in countries such as the US, Brazil and Argentina - the world leaders in the production of GM crops. Predicted estimates show that on the whole, the total production of GM soy and GM maize GM canola in the period of 2010-2020. Will increase from 557.8 million. Tones to 1012 million tones, or 1.8 times.

For the consumers of GM products throughout the world, in the absence of research-based evidence of the safety of these products for the health, its consumption should be provided with the necessary information about the origin of the product (or product ingredients) so that they can freely choose what kind of food to purchase

products: Made on the basis of industrial technology, biotechnology, environmentally-oriented or any other technology.

In countries with import substitution problems, the production of genetically-modified agricultural products opens up new possibilities for food self-sufficiency and diversification of exports, and for the poor in developing countries - an effective solution to the problem of hunger.

The economic efficiency of agricultural production of GM crops should be determined by taking into account a variety of complex factors associated with the specifics of how the acquired crop plants agro-biological characteristics and with changes in the technology of their cultivation.

Based on the study it was found that the economic efficiency of agricultural production of GM crops is achieved by the fact that they provide:

- Reducing the financial costs for the purchase of pesticides, as well as the volume of their entry by one of the cultivated area.
- Reducing the loss of useful biomass (associated with resistance to pesticides, plant diseases, insect pests and weeds, as well as to a variety of stressful situations: Drought, frost, etc.).
- Increasing the productivity of agricultural GM crops on their traditional counterparts.
- Reduction of energy and labor costs while reducing the treatment of crops against weeds, pests and diseases and the use of subsurface tillage.
- The possibility of an alternative use made of GM products (for example, the use of GM maize, GM soya and GM oilseed rape for the production of liquid biofuels).

The economic effect of the introduction of biotechnology in comparison to conventional technologies of cultivation of agricultural crops is characterized by a trend of steady growth. For example, the total growth of gross profit (taking into account changes in productivity, the cost of pesticides, seeds, and in some cases, fuel and labor), in 2012, amounted to 18.7 billion \$ and more than 3 times higher than in 2004

Since the beginning of commercial production of GM crops the accumulated value of the total growth in gross profit of farmers engaged in the production of the product concerned amounted to around 117 billion \$ (1996-2012 gg.). With the largest contribution to growth in total gross profit made the production of GM herbicide-tolerant soybeans (37.0 bln \$), resistant to insect pests GM cotton

(36.3 billion \$) and resistant to pests GM maize (32.3 billion \$).

In recent years, the highest values of growth in gross profit of farmers linked primarily to the production of GM corn resistant to insects - pests, as well as resistant to insects - pests of cotton and GM herbicide-tolerant GM soy. Economic indicators are depending to the species and varieties of GM crops, as well as on the country, technology, and the availability of measures to combat pests and/or weeds in the country. It should be borne in mind that farmers in each country pay different largest technology fee (into the price of purchased genetically modified seed, respectively, affect to the production cost of GM products) that biotech companies charge as compensation for expenses for the development, testing, implementation and marketing of GM crops are incurred.

For instance, the main economic indicators, shows the advantage of the production of GM corn resistant to insects - pests in some foreign countries on 2012.

3.3 The Agrobiotechnology: Foreign Experience

The analysis of the study's results in foreign countries with a high level of commercial agricultural biotechnology showed that for GM maize resistant to insects - pests and other major GM crops are noted positive changes in the level of gross profit margin of farmers, as opposed to the traditional techniques of similar crops planting.

This is affected by two factors: The reduction of operating costs of a number of positions (on pesticides, fuel, labor, etc.), as well as increasing productivity. In some cases it only saves money for the purchase of pesticides costs which significantly weakens or even outweigh the impact of technological collection to increase the cost of GM seeds. Studies in Germany, show that per hectare cost reduction amount of pesticide in the production of GM maize compared with conventional maize, 21% higher than the increase of costs associated with the purchase of genetically modified seeds.

Production of genetically-modified crops provides a stable development of agricultural production and improve food security in the world. The major global treat over the long term as restricting physical and economic access to food is posed.

The food physical access issues in the near future could not be solved through the involvement of new arable lands and technology of industrial agriculture. At the

same time, the GM crops production tools for improving the efficiency of agricultural production, by improving productivity and reducing losses in the field and during storage, the possibility of harvesting, as well as the shelf life of products extend and improvement of nutritional and taste properties are reliable. The largest contribution to obtain additional agricultural products in the world is carried out through the production of GM maize and GM soy.

The solution affordability is at ways to reduce the cost of production of GM crops, thereby reducing the price of the final product.

However, improving economic access to food can be achieved not only through the implementation of GM products at lower prices, but also to increase employment (and thus income) of the population at the expense of growing GM crops technical purposes, for example, GM cotton. An interesting example of India, which is due to the transition to the cultivation of GM cotton in 8 years, has evolved from a net importer to a net exporter of cotton.

3.4 Food Security

By treating of the “food security” concept, in our point of view, it is enough to talk only about the physical and economic access to food for population. Every year, food consumption enhancement and demand structure changing, influence to increase meat and dairy consumption and leads for faster growth of their production. An important factor is to ensure a reliable food supply. On 2021, the proportion of cereals for animal feed both developed and developing countries are increased.

Where as, GM crops production allows the crop enterprises as guaranteed feeding livestock in spite of climate change and weather anomalies, based on the needs to ensure the food security of the population on the crop production and safety feed of livestock to provide food security of the population with livestock products.

Biofuels allow converting sunlight energy into the high molecular weight of organic compound, as well as organic waste of agricultural and industrial production. There are a number of objective factors that could be driving forces to the development of industrial biotechnology and biofuel market in Russia:

- For intensive all-round development of the rural regions of the country (recognized at the highest

government level) to prevent the impoverishment and degradation of the Russian village are needed.

- To reduce fuel prices in Russia in order to increase the competitiveness of the Russian economy are needed. The development of alternative oil and gas energy sources - The basis of future energy security powers.
- To address environmental issues.

Let us consider each of these reasons in some detail.

One of the factors which affecting to the development of the biofuels market in Russia is to expand the domestic grain market and the consequent development of rural regions.

The intensification of agricultural technologies has led to a steady increase in the production of grain, mainly wheat, in Russia. However, the temporary ban exports in 2010-2011 led to an increase in carryover grain and pressure on the market.

There are growth limitations in exports:

- The existing infrastructure initially focused on imports.
- 98% of elevators do not have the equipment for shipment of large quantities of grain.
- 30% of elevators do not have their own sidings.
- 69% of export rail through a transport hub (the port of Novorossiysk).
- Retiring of grain hoppers fleet of cars. The average age of grain hoppers is 24 years, by 2015, 22,000 cars (77% of the park) will be displayed.
- Low wagon component in railway tariffs that do not generate income for investment in the construction of its own rolling stock.
- Lack of efficient logistics technologies.
- Dispersal of stations sending grain cargoes.

The transport tariffs for the export of grain for export will not solve the main problem - A glut of world grain market, and as a result, low world prices are subsidized. Nowadays market share will have to win over Russian dumping, a significant decrease in grain prices.

The production of biofuels from genetically-modified crops is economically efficient and helps to overcome inter-sectoral competition for agricultural raw materials.

The development of world agricultural production on an industrial basis is accompanied by increasing consumption of non-renewable energy resources (mainly oil) per unit area of cultivated land and per person employed in this sector of the economy. However, reserves of traditional energy savings are not limitless, and their

limited stocks available. Therefore, in various sectors, including agriculture, considered the possibility of using renewable energy sources, including for the agricultural sector of particular interest is the use of bioenergy.

The modern bioenergy represents a new source of demand for agricultural products, which is simultaneously, enlivens the sphere of agricultural raw materials production and serves as a factor of destabilize the global food system. The volume of resources of crops for liquid biofuels production is already significant. In 2012, the production of bioethanol was sent to about 53% sugar cane in Brazil and 40% of the US corn crop, which represents about 14% of total world harvest of corn and feed grains. About 48% of the produced soybean oil and 75% rapeseed oil in the EU has been directed to the production of biodiesel. In the near term the biofuels will continue to increase, while in some countries it will increase by 2022 by almost 2 times. Also the volumes of replacement of traditional motor fuels with biofuels are increased. Thus, the proportions of bioethanol substitution are 15.2% of the world, biodiesel - about 5%.

The biofuel production development is very promising, due to the next decade the real alternative motor fuels from the other renewable energy sources is not likely to appear based to the economic point of view. Additionally, the stringent environmental requirements for traditional fuels will spur the biofuel market.

4. Summary

In our opinion, in the next decade, the productions of liquid biofuels (bioethanol and biodiesel) from GM crops are advanced. Firstly, the GM crops not for food and feed for farm animals, and for the production of biofuels are much less scientific discussions and concerns in the society. Secondly, the economic performance of the production of biofuels substantially improved. Nowadays energy efficiency (the ratio of energy content of useful product to the total energy consumption for its production) the production of biofuels (primarily ethanol) produced from agricultural crops is quite low, even with the utilization of by-products. If the energy content of a unit of traditional motor fuels by more than 4 times greater than the required total production costs, the ratio of energy output to bioethanol is usually 1.1-1.3, and biodiesel and other biofuels from oilseeds - 2.4-2.8. This is due mainly to the relatively high energy intensity of cultivation of agricultural crops themselves, that uses

either directly or indirectly non-renewable hydrocarbon resources. Recent developments are aimed at creating Agri special GM crops for use for energy purposes, with high content of sucrose, starch and cellulose. The production of biofuels from these GM crops is much more economical, as it allows to increase the yield of useful products both with a unit mass of the raw material, and with units of the sown area (by increasing productivity and reducing losses in agricultural raw materials), and finally, to reduce the production cost of biofuels by reducing consumption of pesticides, introduced under the energy crops.

Third, as follow up to the two above circumstances, the target energy crops for biofuels solves the problem of inter-industry competition for raw materials (with the production of food and fodder production).

Fourth, it is very promising to use for energy purposes of land unsuitable for cultivation of traditional food crops, abandoned agricultural land, allowing you to efficiently solve the problem of land-use areas and create additional jobs.

The analysis of international of genetically modified crops practices allowed to develop recommendations for the production and use of genetically-modified crops in Russia, under due consideration of the interests of producers and consumers.

For many years due to the lack of legislatively fixed mechanism for obtaining a permit for the commercial production of GM crops is a paradoxical situation, which is legally allowed to import GM crops and products to apply them in food and feed, but the law prohibits their production in Russia. In 2013 Russia allowed imports of 21 varieties of GM crops, including 11 varieties of GM corn, 6 varieties of GM soy, 2 varieties of GM potatoes, 1 variety of GM-rice and GM sugar beet.

Despite to the domestic production of soybeans and corn increasing, there are still in need of Russian imports. According to the Russian Ministry of Agriculture, imports of agricultural products in 2013 totaled 41.9 billion. USD, with annual imports of products containing GMOs, 1.5 bln dollars.

Until now, the Russian biotechnology has not been sufficiently developed, despite the fact that the importance of its achievements for the development of the Russian economy cannot be overestimated. Today, Russia's share in the market of biotechnology is less than 0.1%, and in some segments is practically zero. More than 80% of biotechnological products that are consumed in Russia is imported. The lag in the development and

implementation of biotechnology is an important limiting factor in the development of a competitive, sustainable national economy. In addition, it will not allow the country to increase the intellectual property in this area, receive the income from the export of relevant technology innovation and force to spend considerable resources on their imports.

The Comprehensive program of development of biotechnology in the Russian Federation for the period up to 2020 were approved to reduce the gap in the level of development of biotechnology in Russia and abroad, in 2012 and in accordance to the program, one of the priorities of biotechnology development in Russia is an agricultural biotechnology, which should help improve food security.

An important step towards the development and adoption of biotechnology in agriculture in Russia was the adoption of the Resolution of the Russian Government dated from 23 September 2013, №839 "On state registration of genetically modified organisms intended for release into the environment, as well as products derived from the use of such organisms or containing such organisms", but implementation of it has been postponed until 2017 due to the lack of a coherent policy on GM crops and to develop mechanisms for handling them.

However, the certain steps to further development of the agricultural technologies in Russia were set out in the "road map" of biotechnology and genetic engineering, and the subroutine "Ensuring the implementation of the State program of agricultural development and regulation of agricultural products, raw materials and food for 2013-2020" are done.

The analysis of international experiences GM crops production has allowed us to offer the consider GM crops production in Russia withdrawn to the circulation for the subsequent production of these biofuels.

Nowadays, the land and resource potential of Russia, especially arable land, are declaimed. The biofuel production in Russia practically does not developed due to the lack of government support and the monopolization of the oil and fuel industries. Despite to the existing obstacles, in Russia to find sources of income other than oil exports are needed. Based on the fact that the areas of crops for energy production in the European Union and a number of other foreign countries are limited in the next years, Russia can more effectively realize the potential of unused land withdrawn from agricultural turnover to establish of energy plantations.

The optimal raw material for biodiesel production in Russia can serve as rape, since it best meets growing agro-climatic conditions. In addition, biodiesel has several advantages: It is environmentally friendly and produced during the production of biodiesel meal can be used as cattle feed, which makes better use of the raw biomass.

Our calculations have shown that the use of GM canola instead of the traditional biodiesel production increases the yield of biodiesel with 1 ton of rapeseed by 27% and 2-fold increases profits.

In our opinion, Russia should continue steps to implement in agriculture, but very balanced and aware of the need to approach the issue of their use.

Significance the adoption of a unified program of agricultural biotechnology in the Russian Federation, which will clearly define the goals and objectives, make a list of coordinated measures to help reduce the technological gap of domestic biotechnology industry and the industry's transition to the innovative type of development. To develop the production of biofuels from GM crops is necessary to adopt a federal law on renewable energy sources and the federal law on alternative motor fuels to include them in the relevant sections of regulating the production of liquid biofuels from GM raw materials.

As follow up to the international practices, the financial and support mechanism for R&P in agro-technology sphere which would stimulate applied researches improvement in this sphere as well as financial support for the research to identify GM crops safety on human health and environment are needed.

In accordance to the international practices the creation of state structure for bio-safety and monitoring of GM crops in open air space, as well as creation of interagency committee of bio-safety, compliance control of law under genetic engineering and state registration of GMOs on the basis of science-based risk assessments are needed.

5. Conclusions

At the end authors concluded that in terms of volatility of external environment and changing of technological modes for effective development environmental economics in Russia aswell as solving problems in value added chain for bio products, the risk sharing between the different actors of the national economy as well as state guarantees for international cooperation improvement, as most viable scheme to attract financial resources for

successful implementation of the transition to the new technologic modes are needed.

6. References

1. Tatuev AA, Kerefov MA. Modern Russian specifics of gross regional product. *Kant*. 2011; 2:36–7.
2. Sklyarenko SA, Abubakar H, Lyapunsova E. The evolution of industrial development in the period of the new phase of International economic relations. *Economics and Business*. 2015; 5:93–5.
3. Tatuev AA, Kerefov MA. Factors increasing the energy efficiency of the Russian industry. *Bulletin of the North Ossetian State University of Costa Levanovich Khetagurova*. 2014; 4:649–55.
4. Tatuev AA. Population saving in Russia: Features of formation and use. *Science and Society*. 2014; 2:24–30.
5. Fasihi F. Examining the relationship between the benefits of using ITIL in E-banking and its role in creating value for customers. *Indian Journal of Science and Technology*. 2016; 9(7):75–82.
6. Tatuev A, Kundetova M. RIBA - duty or right. *Questions Modern Jurisprudence*, 2014; 37:65–70.
7. Tatuev AA. Structural priorities cash savings of the population. *Austrian Journal of Humanities and Social Sciences*. 2014; 7:299–304.
8. Tatuev AA. Exam as a requirement of the new economic relations. *Bulletin of the North Caucasus Federal University*. 2014; 5:94–9.
9. Sklyarenko SA, Abubakar H, Gerasimov AN, Liu G. Interaction of industrial complexes within BRICS. *Economy and Entrepreneurship*. 2015; 5:120–4.
10. Vasilenkova NV. Economic interests of national economic entities. *Indian Journal of Science and Technology*. 2016 Mar; 9(11):1–14.