

# RUSSIAN AND BELARUSIAN ACADEMIC SCIENTIFIC COOPERATION

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## Scientific collaboration between Russia and Belarus at the first stage of allied relations: the restoration of a single research area

*The article characterizes the current collaboration between the scientists from the academic institutions of Russia and Belarus. It shows the stages of this cooperation within the Union State and points out the main directions of the development of its common research space.*

*Russia, Belarus, scientific and technological cooperation, the problems of effectiveness increase, control mechanism.*



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The brief history of integration of Belarus and Russia is rich in difficult and contradictory events. Without going into the analysis and consequence assessment after the collapse of the Soviet Union, it's necessary to point out a very important fact from a historical point of view that less than 5 years after this event Russia and Belarus prepared to unite in the fundamentally new geopolitical situation.

Treaty on the Union between Belarus and Russia was signed in Moscow 16 years ago, on March 2, 1996. This treaty became the cornerstone in the legal foundation of the Union State, as the main provisions of the treaty, the statements of its purposes and objectives were kept and developed in the successive bilateral legal acts adopted by Russia and Belarus, including the Treaty on the Creation of the Union State as of December 8, 1999.

In order to introduce the discussion of the recovery of the common scientific space in Russia and Belarus, we would like to point out the provision of the Treaty of 1996, which stresses that a major function of the Commonwealth is “all possible assistance to the development of a common scientific, educational and cultural space”. The InterAcademy Council for Problems of Development of the Union State (IAC) has been operating in this direction for eight years.

This Council as a new form of cooperation between the Russian and Belarusian academies was established by the National Academy of Science of Belarus and the Russian Academy of Sciences with the assistance of the Standing Committee of the Union State in 2004, based on the Decision of the Council of Ministers of the Union State as of December 10, 2002.

The Council consists of leading scientists of the Russian and Belarusian Academies of Sciences, as well as the representatives of the Standing Committee of the Union State. Three co-chairmen lead the InterAcademy Council; they are from the National Academy of Science of Belarus, the Russian Academy of Sciences and the Standing Committee of the Union State.

The main objectives of the Council include the coordination of the scientific activities of both academies in order to develop the Union State, studying the development problems of the Union State during individual and joint programs, determining the actual problems of science jointly with the government executive bodies of Russia, Belarus and the Union State.

The results of the Russian and Belarusian researches devoted to the developmental problems of the United State are discussed regularly during the meetings of the InterAcademy Council, as well as during the international scientific and practical conferences and round-table discussions that are run under the auspices of the IAC. There were seven meetings of the Council over the period of its activity.

They were held by turns in the cities of Belarus and Russia: in Moscow, Minsk, Veliky Novgorod, Vitebsk, Vologda, Cherepovets.

The most distinguished scientists from Russia and Belarus research such acute problems as a mechanism of Belarus and Russia’s accession to the WTO, the development of common principles to provide the member-countries of the Union State with agricultural subsidies, the formation of a single innovative area of Belarus and Russia, the achievement of sustainable anti-recessionary condition of trade and economic cooperation between Russia and Belarus, the harmonization of national Belarusian and Russian legislations, the formation and implementation of scientific and technical programs of the Union State.

The scientists of both academies have repeatedly stressed that there are highly integrated components in the long and firmly established scientific and technical relations between Belarus and Russia, whose destruction is unacceptable. In the period, when the development of global science is moving towards the integration and consolidation of efforts, it is absurdly to divide the things that work successfully. In this case it’s impossible to ignore the fact that our countries should have high-tech systems to ensure their own and public security. It was noted at the joint meeting of the Presidium of the National Academy of Sciences of Belarus and the Presidium of the Russian Academy of Sciences in Minsk on April 27, 2011 that the bilateral collaboration between our academies was developed effectively, the themes and geography of this relations were expanded, and the collaboration was one of the most powerful incentives for the integration of Russia and Belarus.

In this regard, it was emphasized at the meeting that, in particular, the InterAcademy Council should play an important role in focusing on the priority dimensions of the researches conducted by scientists from the RAS and NASB and on the expertise of their joint programs and projects.

The Standing Committee of the Union State, the Russian Academy of Sciences and the National Academy of Sciences of Belarus understood the urgent necessity for the IAC to get an opportunity to expertize target and thematic research programs of the Union State.

One of the most important tasks of the Russian and Belarusian scientists is the Concept for the development of the Union State of Russia and Belarus. The undisputed conceptual nature of the problem determines a high level of scientific understanding of not only the integration experience of two countries, but also the characteristics of the current integration processes in the former Soviet Union. First of all, it will be necessary to carry out a profound analysis of a qualitatively new character of interstate relations, which are formed in the former Soviet Union after the Agreement on the Customs Union and the Common Economic Space officially come into effect.

This comprehensive analysis will help to correlate the integration development within the scope of the Union State and the processes in the EurAsEC and the CSTO in the context of the European and global relationships. Therefore, the Concept for the development of the Union State was considered as a priority task at the Presidium sessions of the RAS and the NASB. It is also included in the operating plan of the InterAcademy Council.

There is no need to discuss the close relations between the academies that have common roots, history, scientific schools and traditions. All this lays the foundation of their cooperation, which helped to sail through a difficult period of serious transformations in the 1990s. The current development stage of the bilateral relations between Belarus and Russia allows them to expand and strengthen this foundation. The traditions, which are typical for the collaboration between Russia and Belarus, can be naturally and logically combined in the present conditions with modernization and innovative approaches to the most difficult problems of fundamental and applied sciences.

In recent years Russian and Belarusian scientists have been interacting closely within the most modern scientific fields: space research, nuclear energy, computing machinery, organic synthesis, oil and gas geology, biology and genetic engineering. They achieved the results in their joint research that meet the highest standards of the world level.

However, it should be recognized that the collaboration in the field of engineering, exact and natural sciences had the priority growth rates during the last few years as compared with social and humanitarian studies. It is a question of the pace and level of research. It is obvious that such objective prerequisites for the stimulation of the integration processes as common culture and history, confessional community and traditional close relations allow us to bring up the establishment of research and educational space along with common economic and innovative spaces. So, joint integrated research programs in economics, law, sociology, history and literature are necessary to do this. Strengthening of the integration basis requires the development of specific historical, philological, cultural projects and research programs in the near future.

Comprehensive analysis of the collaboration between the regions of our fraternal nations is very important to stimulate the integration processes. For example, in order to execute the decisions of the 5<sup>th</sup> meeting of IAC, in 2009 the scientists began to conduct the joint social studies and to research the problems of international trade integration between the regions of the North-West Federal District in the Russian Federation and the Republic of Belarus. The Institute of Socio-Economic Development of Territories of RAS, which is located in the Vologda Oblast, is carrying out a significant part of these studies within the scope of three joint projects funded by the Belarusian Fund for Fundamental Research and the Russian Humanitarian Science Foundation. In 2011 there was the International Exhibition that was devoted to

the 20th anniversary of the Commonwealth of Independent States; it had the exposition of the Union State with the stands that demonstrated the activity of the InterAcademy Council, including inter-regional cooperation. And the business program of the Union State Day included the extended meeting of the IAC and a scientific debate – a roundtable discussion on the science integration within the scope of the Union State.

Academic science has an important social role because it is systematically integrated into the socio-economic complex of the states. Joint studies have contributed a lot to the development of computer science, mechanical engineering, optics, electronics, metallurgy, energy and resource-saving, preservation of natural and cultural heritage. They have been appreciated internationally.

The objectives of the Union State of Belarus and Russia, as well as a lack of visa and customs barriers create favorable conditions for the wide research and innovation cooperation between the Belarusian and Russian partners.

The scientific and technological development in Russia and in Belarus is carried out within the statutory priority dimensions. The similarity and coincidence of some priorities offer additional opportunities for the integration of scientific and technological activities. First of all, this applies to such priority directions of scientific and technological activities in Russia and Belarus, as power engineering and energy-saving, biotechnology and pharmaceuticals, information and telecommunication systems, nanosystem and new materials industry, conservancy and others.

Today an innovative component of the countries' cooperation is in the forefront: the National Academy of Sciences of Belarus and its partners from Russia have increased their activities in establishing the joint research laboratories and scientific and production centers, based on the subdivisions of the RAS and the NASB, working in close and complementary fields; they study the possibility to establish

joint ventures and the organization of production within the scope of technological park zones, formed in Russia and Belarus. There are such organizations as the Scientific and Research Center for Oil and Wood Chemical Technology (at the Institute of Chemistry of New Materials of NASB and the Boreskov Institute of Catalysis of the Siberian Branch of RAS) and the Russian-Belarusian laboratory of electromagnetic and ionizing radiation (at the Institute of Radiobiology of NASB and the Emanuel Institute of Biochemical Physics of RAS). Joint studies are conducted in the international research centre "Joint Institute for Nuclear Research" in Dubna.

The expansion of cooperation with the regions of the Russian Federation mentioned above is an important aspect of the scientific and technical collaboration between Belarus and Russia. The National Academy of Sciences of Belarus is included as an executor in the Plans and Protocols of arrangements to promote the cooperation with 18 regions of the Russian Federation approved by the Council of Ministers of Belarus.

The Cooperation Program of NASB and the St. Petersburg Scientific Center of RAS was formed. It included 6 projects besides the projects funded by the Intergovernmental Agreement and RFBR BRFFR programs. They are planned to be implemented within the scope of the Union State program "Heterostructures: microwave radars, lasers, light emitting diodes" (Pramen), aimed at the development of the scientific and technological basis in order to improve geterostructural micro- and optoelectronics devices in the Union State and to manufacture a number of devices that meet the modern world standards, and that are suitable for the implementation in production.

A list of 25 joint research issues has been formed to develop the new technologies in the manufacturing sector in order to implement the Agreement on Scientific Cooperation between the National Academy of Sciences of Belarus and the Ural Branch of RAS.

Active interaction with the Belarusian Republican Foundation for Basic Research, the Russian Foundation for Basic Research and the Russian Humanitarian Science Foundation contributed a lot to the development of inter-academy cooperation.

The cooperation between the Councils of Young Scientists of the RAS and the NASB has been formed. The themes and geography of scientific and technical cooperation are being expanded, so the leaderships of the Russian and Belarusian academies must focus on the coordination of their researches, and they should be oriented to the priority tasks for Russia and Belarus. Thus, the preconditions for the formation of a common scientific and technological space in the Union State are being created.

The partnership of the National Academy of Sciences of Belarus and the Russian Academy of Sciences within the scope of scientific and technical programs of the Union State is also positive.

11 programs, funded from the budget of the Union State, have been already implemented and are being carried out now by the National Academy of Sciences of Belarus. They are: "Space BR", 1999 – 2002; "SKIF", 2000 – 2004; "BelRosTransgen" 2003 – 2006; "Space SG", 2004 – 2007; "Triad", 2005 – 2008; "SKIF-GRID", 2007 – 2010; "Space NT", 2008 – 2011; "Nanotechnology-SG", 2009 – 2012; "BelRosTransgen-2", 2009 – 2013; "Stem Cells", 2011 – 2013; "Standardization – SG", 2011 – 2014.

It is obvious that the growth rates of the common scientific and innovation space between the Republic of Belarus and the Russian Federation and other countries of economic integrated unions should be increased under the conditions of the intensive development of economic integration, the establishment of the Customs Union and the gradual formation of the Common Economic Space. So, it will be possible to modernize quickly the economies of partner countries, to ensure the competi-

tive growth of businesses based on the innovative development and to form new integrated research and production structures.

In our opinion, in order to solve these problems successfully, first of all it is necessary to understand clearly the essence of two main objectives of the CIS countries in their innovation activity: the creation of the Common scientific and innovation space and the formation of the Interstate program for innovation cooperation between the CIS countries.

"Common space" means the common "rules" in the innovation sphere: tax remissions for developers and producers, the rules of technology transfer, the terms of intellectual property turnover, etc. In the end, it is a single configuration of national innovation systems of the CIS countries. It is believed that the efficient innovation system in the market competitive conditions will provide inevitably an intense stream of innovation, because competitiveness is the mother of innovation. In fact, it is a question of harmonious conditions for the economic activity that is inevitably confronted with the natural differences between the economic interests of states due to the different structures of their economies.

All the problems of the conciliation of the interests, as well as some solutions to these problems can be seen in the complicated establishment of the Union State, the Customs Union and the EurAsEC. In addition, the transition to innovation is a very complex process that requires systemic changes in the economic mechanism that causes a conflict of interest within the economic system of each country.

In this regard, we assume that the creation of the common scientific and innovation space is the most important task in future. This space corresponds to the fundamental interests of all countries. The most important positive result will be the achievement of a synergistic effect that will allow us to increase significantly innovation potential and strengthen the competitive positions of some scientists, scientific societies and academies, and, finally, of countries in whole.

This task solution involves the search for common interests and the harmonization of national legislations on this basis.

Competitiveness is the main motive of innovation activity in economics. But this is a theory. And there are the following questions in practice. Is it reasonable to develop the competitiveness between the countries of the same integrated union? Was the purpose of the European Union to confront the United States and South-East Asia in the global competitiveness? Are the duplicative researches and productions efficient?

The obvious answers to these questions lead to the use of a program-target method of innovation processes management. This dimension is efficient in the countries, where the government intervention in their economies is relatively high. This tool has proven its effectiveness in Belarus. So, the second State Program of Innovative Development of the Republic of Belarus (till 2015) was started in 2011. The Belarus-initiated Intergovernmental Target Program "Innovative biotechnology" was developed; it was approved by the Interstate Council of EurAsEC in May, 2010. This program was the first one among the interstate programs of the EurAsEC that had been decided to be implemented by the supreme bodies of the Commonwealth.

However, a country is one thing, but the union of the countries with their procedures, hierarchy and specificity is something else. Hence, there are the difficulties in the coordination of common documents. And until now, despite the drafting of a new edition of the Procedure of the program development and implementation in the Union State, the joint projects coordination in the Union State still takes a long time; the matching system is cumbersome, and it is in the need of simplification.

There is a persisting need for inter-regional scientific cooperation, arranged interaction between young scientists from both countries, joint implementation of research, which should

form the basis of science, technology and innovation programs of the Union State and use their common knowledge in knowledge-intensive industries and technologies.

The National Academy of Science of Belarus includes scientific and practical centers and scientific and production associations, which join all the phases of innovative cycle on the basis on a single organizational structure. The structuring models, implemented in Belarus, have their analogs in Russia: science cities, technology parks and others. At the same time, Belarusian scientists are interested in the organization of an innovation process in such institutions of the RAS as the Ioffe Physical-Technical Institute of the Russian Academy of Sciences that is directed by the winner of Nobel Prize, Academician Zhores Alferov, or the Institute of Problems of Chemical Physics in Chernogolovka led by Academician S.M. Aldoshin.

In turn, in our opinion, Russia would be interested in the Belarusian experience in the concentration of intellectual resources within the scope of government complex target scientific and technical programs. 12 programs of such kind have been created since the last five-year period. Nowadays they include 18 Public Research Programs and 28 State Scientific and Technical Programs.

One of the key tools for achieving the goals can be the public-private partnerships in innovation sphere, whose implementation requires the special legislative basis. It's necessary to eliminate the Belarusian lag compared to the Russian Federation in the formation of the market economy (the main institutions, market relations) as a ground for the increase in competitive advantages.

The first step towards the successful cooperation between Russia and Belarus in the sphere of innovation can be the adoption of harmonized fundamental law of the Union State "On Innovation Activity" that should be followed by a series of normative and legal

acts governing intellectual property, technology transfer, the operation of innovation infrastructure's subjects, a single order to form and implement the programs of basic and applied researches.

The most severe situation in the field of scientific activity, the most important element of the knowledge economy, is turned out for the humanities. Today the bad financing of the humanities can be explained by the fact that they are generally believed to be useless because they don't provide for direct value added. At the same time, it is overlooked that humanitarian experts represent the largest part of most public and private administrative structures.

These people are usually responsible for the elaboration process of the strategic development programs for companies, society and state. In this regard, it's necessary to define the role and practical importance of the humanities in the society as the major transmitter and creator of the human (socio-intellectual) capital within the scope of integrated innovation system.

An important step in the development of humanitarian cooperation was the establishment of the Association of Research Philosophy Institutes of the CIS countries, Asia and Eastern Europe in Moscow in 2010, which was established by the organizations representing Armenia, Azerbaijan, Belarus, Kazakhstan, Russia, Tajikistan and other countries. The Executive Committee of the Association was formed. The decision to establish the International Institute of Philosophy destined to succeed the positive Soviet traditions of scientific dialogue and cooperation was made.

Joint work of philosophers has already produced significant results. Scientists from the Institute of Philosophy of the NASB jointly with their colleagues from the Russian Academy of Sciences and the universities of St. Petersburg, Tomsk and Perm have revealed an innovative potential of synergy methods in the diagnosis, synthesis and design of complex systems; they have carried out the philosophical

and methodological analysis of the problem of space-time dimension. The monograph about self-organization processes and systems' evolution, prepared according to the results of these studies, was published two times in Moscow.

The importance of cooperation results in the humanities is proved by only the titles of some joint publications: "The social consolidation of society: A comparative analysis on the materials of Russia and Belarus" (Moscow, Minsk, 2004); "The formation of national and state interests in the context of increasing globalization: A comparative analysis on the materials of Russia and Belarus" (Moscow, Minsk, 2008). The analytical and predictive model of social transformation of post-Soviet societies in the case of Russia, Belarus and Kazakhstan was developed in cooperation with the philosophers of the Siberian Branch of RAS and the Institute of Philosophy and Political Science of Kazakhstan.

The cooperation between Belarusian and Russian scientists must rely on the strengths of its members and minimized parallel high-cost operations. It is necessary to create the common scientific and technological space of Russia and Belarus based on the principals approved in the formation of the Customs Union; it's important to coordinate the researches taking into account the specialization of prevailing scholar schools and their place in the global hierarchy, as well as to connect to the system of international scientific and technical cooperation (including the projects of the 7th EU Framework Program), if there are visible benefits to all participants, and a hidden leak of competitive domestic R & D results shouldn't be encouraged.

This article is published in the journal "Economic and social changes: facts, trends, forecast" that is a new ground for the Inter-Academy Council. The journal is published by the Institute of Socio-Economic Development of Territories of RAS, located in Vologda, one of the oldest cities in Russia.

The journal is published both in Russian and English, and it has an open web-site that allows the authors to share their ideas with a wide range of experts, who are interested in the development of interregional and international cooperation. At the same time it is an invitation to discuss and work together, because large-scale practical activities can be common only in real integration.

It is necessary to correct the approaches to the attraction of foreign investments in Belarus under the conditions of the common market. Firstly, it's necessary to create the conditions for the multinational corporations that produce high-tech innovative products and provide their exports to other countries of the Customs Union. Secondly, a special decree should specify that such corporations couldn't use the usual for Belarus economic management, which consists in the final adjustment of targets, the government regulation of tariff policy, the prohibition of surplus labour dismissal, etc.

During the period from 1956 to 1991 more than 150 Belarusian specialists were participating in the study and exploration of Antarctica with the Soviet Antarctic expeditions. They conducted hundreds of studies and created dozens of scientific papers. Today it is necessary to focus on the joint multi-disciplinary complex projects on the geophysical monitoring of Antarctica. Belarusian scientists can offer unique research tools to study ozonosphere and assess the voids in the ice massif, as well as lidar systems to study atmosphere. It is possible to form a joint project to study the Arctic within the Union State programs.

The Belarusians have already made a number of concrete steps. The Ministry of Natural Resources and Environmental Protection of the Republic of Belarus and the National Academy of Sciences of Belarus have approved the State Draft Program "Monitoring of the Earth's polar regions and maintenance of the Arctic and Antarctic expeditions in 2011 – 2015" on the complex of issues associated with

the implementation of measures to ensure the work in the Antarctic. The National Academy of Sciences of Belarus is now in charge of the Republican Center for Polar Research. It will be responsible for the study of this little-explored region of Earth. The position of Belarus in the Arctic is a political issue, which provides benefits to both parts.

Scientists from Belarus and Russia will be able to combine their efforts in studying the unique nature of neighboring countries. So, there is the largest lake Narochny, the chain of Braslav lakes, the forest reserve Belovezhskaya Pushcha and the unique wetland of Polesia in Belarus. Such projects are widely implemented in Belarus, including the joint projects with the colleagues from Russia.

For example, the Institute of Experimental Botany of NASB, the Kholodny Institute of Botany of NASU, the Institute of Ecology of the Carpathians, the Komarov Botanical Institute of RAS developed the Concept on the establishment of trans-boundary protected areas in Belarus, Ukraine and Russia. They have defined the trans-boundary natural complexes that are perspective for the biological diversity protection. The biospheric trans-boundary reserve "Western Polesia" has been established. It will be the fourth in the world and the second in Europe trilateral protected area (it is being established by Belarus, Russia and Poland) after the creation of a single protected territory.

The list of objects and the aspects of collaboration between the scientists from Russia and Belarus, mentioned above, isn't exhaustive. But it proves that the inter-academy cooperation between the RAS and the NASB, the expanded and intensified relationships with the research centers is a powerful incentive for the integration of two fraternal nations. The establishment of a common innovation space of Russia and Belarus could become a model for modernizing mechanisms in the economies of the Eurasian Community, based on their own scientific and technological potential.