THE INSTRUMENTS OF RUSSIA-EU RESEARCH AND TECHNOLOGICAL COOPERATION IN THE SPHERE OF INNOVATIONS

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The article focuses on the basic tools of Russia-EU international cooperation, co-funded by the EU and Russia, such as cross-border, trans-border, and trans-national co-operation programmes, which can contribute to innovative, scientific and technological development. The author gives an overview of large-scale Russia-EU international cooperation projects in the field of innovations and comments on the cooperation programme running until the end of 2013. Special attention is paid to a special financial tool — the Framework Programme — one of the most important tools of financial support for joint projects in the fields of science and innovation with the EU participation. The article emphasises the opportunities for career growth and professional development for individual researchers in the field of innovation.

Key words: innovations, international co-operation, tools for Russia-EU cooperation, European programmes, Russian foundations

The research and technology cooperation between Russia and the EU is an example of rather successful interaction. The Partnership and Cooperation Agreement (PCA), which came into force on December 1, 1997, became the legal framework for Russia-EU relations. The agreement was initially for ten years, but, since 2007, the PCA has been annually renewed under the condition that none of the party wishes to terminate it [1]. This agreement formulates and regulates the principal common goals and the organisational structure of bilateral agreements and specifies initiatives and features of dialogue in a number of cooperation fields. It is the first bilateral international legal act that regulates Russia-EU cooperation in more than 30 different areas: industrial cooperation, investment, R&D, agriculture, energy, nuclear technologies, post and telecommunications, informatics, space, environmental protection, regional development, etc.

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The foundation of Russia-EU research and technology cooperation is the Agreement on Cooperation in Science and Technology between the European Community and the Government of the Russian Federation signed in 2000 and twice renewed for a period of five years [1].

For over more than 10 years, Russia-EU international cooperation has been carried out with the help of instruments for financing different transboundary joint projects in the field of R&D.

Tables 1 and 2 present EU instruments (programmes) designed to finance joint transboundary and cross-border in different fields [10].

It is worth noting that each programme pays significant attention to the development of innovations. For example, the Baltic Sea Region transboundary cooperation programme (2007—2013) is meant to support projects aimed at the development of key innovations in the field of natural and engineering sciences, as well as "non-technological" innovations, business services, design, and other market-oriented knowledge and services. The initiatives relating to this priority strive to develop the sources of innovations and business, stimulate transnational knowledge and technology transfer, as well as prepare social groups and citizens to embrace and apply new knowledge and technologies [12]. This priority, especially, in the framework of cooperation with Russia and Belarus, supports projects aimed at a wider context of socioeconomic development at a regional level [3].

Let us focus on such instrument for supporting Russia-EU international relations in the field of innovations and research and technological development as framework programmes (FP). The EU framework programmes were launched in 1984. They are aimed to develop interdisciplinary research and support joint research initiatives in Europe and other countries. Russia has participated in framework programmes since 1994. So, the fifth framework programme financed projects developed by 20 research institutions and organisation from CIS, including Russia. Within the sixth framework programme (2002—2006), Russian scholars participated in 310 international consortia on research projects. The total project financing within this programme amounted to 2 bln Euro, including the 16 mln Euro of Russian contribution from the funds of the Federal Targeted Programme for Research and Development in the Priority Fields of Russian S&T Sector for 2002—2006 [1]. Within the projects of the sixth framework programme, 8600 connection were established with 130 countries. The seventh framework programme made it possible to expand cooperation and increase the number of partner countries to 185 [1].

Today, framework programmes are the main EU instrument for supporting research and development in almost all fields of science. International research cooperation is carried out through not only framework programmes, but also a number of bilateral agreements between Russia and EU states; however, the seventh FP is the main and most global instrument of financing research programmes in Europe in 2007—2013, which covers the whole territory of Europe, as well as Russia, China, Japan, and other countries.

Table 1

EU-Russia transboundary cooperation programmes [8; 11]

Programme	Priorities	Participant countries
INTERREG III B Neighbourhood Programme (2000—2006) *(concluded)*	***Priority 1.* The development of spatial development concepts and planning initiatives for specific territories and sectors** *Priority 2.* The establishment of territorial structures supporting the sustainable development of the Baltic Sea region (BSR) *Priority 3.* Transnational and bilateral cooperation aimed to support institutional and regional development in the Baltic region countries *Priority 4 (North).* Cross-border cooperation. Estonia — Latvia — Russia priority	Belarus (Baltic Sea basin), Denmark, Estonia, Finland, Germany (Baltic Sea basin), Latvia, Lithuania, Norway, Poland, Russia (Baltic Sea basin), Sweden
Baltic Sea region (2007—2013) *(active)*	*Priority 1.* Creation of condition for the development and dissemination of innovations in the BSR *Priority 2.* Increasing internal and external accessibility of the BSR *Priority 3.* Solutions to the environmental problems of the Baltic Sea in a wider context of sustainable marine resource management *Priority 4.* Support for cooperation projects between capital regions, cities, and rural areas aimed at an increase in their attractiveness for residents and investors	All EU countries: Denmark, Estonia, Finland, Latvia, Lithuania, Poland and Sweden, as well as the northern states of Germany. Other territories: Norway, Russia (northwestern regions), and Belarus

Table 2

Russia-EU cooperation programmes

Interreg III A/TACIS cross-border programmes		
	Priorities	**Participant countries**
Lithuania — Poland — the Kaliningrad region of the Russian Federation neighbourhood programme (2004—2006) ***(concluded)***	1. Facilitation of economic and research and technology cooperation 2. Improvement of cross-border infrastructure for the development of border territories 3. Environmental protection, increase in energy efficiency, promotion and use of renewable energy sources 4. Development of cross-border tourism and recreation activities, modernisation of tourist infrastructure, maintenance of cultural objects of cross-border significance 5. Support for local communities 6. Unique culture and regional cultural heritage	Klaipeda, Tauragė, Alytus, and Marijampolė counties of Lithuania with constituent 21 municipalities. Poland is represented in the programme by the Słupsk and Gdansk, as well as the Gdansk-Gdynia-Sopot sub-regions of the Pomeranian voivodeship, Elblag, Olsztyn, and Ełk sub-regions of the Warmian-Masurian Voivodeship, and the Białystok-Suwałki and Łomża sub-regions of the Podlaskie Voivodeship. The Kaliningrad region
Karelia (2000—2006) ***(concluded)***	*Priority 1.* Commerce *Priority 2.* Transfer of experience and regional cooperation *Priority 3.* Transport communications	The Kainuu, North Karelia, and Northern Ostrobothnia regions (Finland), as well as the Republic of Karelia (Russia)
South-East Finland (2000—2006) ***(concluded)***	*Priority 1.* Development of transport connections and environment *Priority 2.* Development of commerce and favourable conditions for its growth *Priority 3.* Transfer of experience and improvement of cooperation conditions	Main territory: South Karelia, Southern Savonia and Kymenlaakso (Finland), Saint Petersburg and the Leningrad region (Russia). Additional territory: Eastern Uusimaa and Päijät-Häme (Finland); the Republic of Karelia (Russia)
North Calotte/Kolarctic **(2000—2006)** ***(concluded)***	*Priority 1.* Business cooperation *Priority 2.* Competence and welfare *Priority 3.* Infrastructure	Lapland (Finland), Norrbotten (Sweden); Finnmark, Troms, and Nordland (Norway), the Murmansk and Arkhangelsk regions, Nenets autonomous okrug (Russia)

Cross-border cooperation programmes for 2007—2013 within the European Neighbourhood and Partnership Instrument (ENPI)		
	Priorities	**Territory**
Lithuania — Poland — Russia (2007—2013) ***(active)***	*Priority 1.* Solutions to common problems *Priority 2.* Facilitation of social, economic, and spatial development	**In the Republic of Lithuania**: the Klaipeda, Marijampolė and Tauragė counties and — in the position of adjacent territories — the Alytus, Kaunas, Telšiai, and Šiauliai counties. **In the Russian Federation**: the Kaliningrad region **In the Republic of Poland**: the Gdansk-Gdynia-Sopot sub-region, the Gdansk, Elblag, Olsztyn, Ełk and Białystok-Suwałki sub-regions, and — in the position of adjacent territories — Słupsk, Bydgoszcz, Torun-Włocławek, Łomża, Ciechanów-Płock, and Ostrołęka-Siedlce sub-regions. These subregions (NUTSIII) belong to five Polish regions (NUTSII): the Pomeranian, Podlaskie, Warmian-Masurian, Kuyavian-Pomeranian, and Masovian voivodeships
Kolarctic (2007—2013) ***(active)***	1. Economic and social development 2. Solutions to common problems 3. Cooperation between people and development of national identity	Lapland (Finland), Norrbotten (Sweden); Finnmark, Troms, and Nordland (Norway), the Murmansk and Arkhangelsk regions, Nenets autonomous okrug (Russia). Adjacent regions: Northern Ostrobothnia (Finland), Västerbotten (Sweden), and the Republic of Karelia and the Leningrad region and Saint Petersburg (Russia)
Karelia (2007—2013) ***(active)***	*Priority 1.* Economic development *Priority 2.* Standards of living *Priority 3.* Horizontal priority	Regional unions: Kainuu, North Karelia, and Oulu (Finland), the Republic of Karelia (Russia). Adjacent territories: Lapland and Northern Savonia (Finland), Saint Petersburg, the Leningrad, Murmansk, and Arkhangelsk regions (Russia)
South-East Finland — Russia» (2007—2013) ***(active)***	*Priority 1.* Economic development *Priority 2.* Common challenges: problems of cross border territories, environmental protection *Priority 3.* Social development and civil society	South Karelia, Southern Savonia, and Kymenlaakso (Finland), Saint Petersburg and the Leningrad region (Russia). Territories participating in the programme as adjacent regions: Uusimaa. Päijät-Häme, Northern Savonia, and the Republic of Karelia
Estonia — Latvia — Russia for 2007—2013 ***(active)***	*Priority 1.* Socioeconomic development *Priority 2.* Common problems *Priority 3.* Promotion of cooperation between people	Latgale, Vidzeme; adjacent territories: the city of Riga and Pieriga (Latvia) Kirde-Eesti, Lõuna-Eesti, Kesk-Eesti; adjacent territory: Põhja-Eesti (Estonia) The Leningrad region, the Pskov region, Saint Petersburg (Russia)

The seventh framework programme consists of four sub-programmes relating to the principal research areas (table 3).

Within the seventh framework programme, as well as other framework programmes, Russia is the "third country", but also a partner in international cooperation within joint studies with EU member states. As of the end of 2011, Russian organisations took part in 302 grant agreements of the 7th FP and received funding of 59 mln Euro. It is worth noting that Russia ranks first in terms of the number of participants and the amount of funding among the "third countries" [9].

Alongside the 7th FP, Russia adopted the Federal Targeted Programme (FTP) for Research and Development in Priority Fields of Russian S&T Sector for 2007—2012; in April 2011, it was extended to the end of 2013. It covers five priority areas: living systems, nanotechnologies and new materials, information and communication technologies, nature conservation, energy efficiency. This FTP allows all interested organisations, first of all, research — including international — ones, to take part in research and development projects funded through the budget of the Russian Federation [1].

The new international cooperation mechanism, which brought together the financial resources of the 7th FP and Russian FTP, was launched in 2007. It consists in holding so called "coordinated calls" for research proposals in the framework of joint financing from EU and Russian foundations. Coordinated calls are parallel calls for research projects announced by the EU and Russia with a common research subject; a necessary condition is that both research teams establish contacts and submit individual but mutually complementary applications to corresponding financing bodies in the EU and Russia. In 2007—2011, a total of eight coordinated calls were held in the following fields [1]:

2007—2008 — two coordinated calls for research on energy, foodstuffs, agriculture, and biotechnology;

2008—2009 — three coordinated calls for research in the field of healthcare, nanotechnologies, and new materials, energy and nuclear fusion;

2009—2010 — one coordinated call for research in the field of aeronautics;

2010—2011 — two coordinated calls for research in the field of information and communications systems and new materials.

Thus, the organisation of coordinated calls is a proof of that Russia-EU research and technology cooperation is moving in the direction of equal partnership based on joint distribution of costs and trust.

Moreover, European scholars are given an opportunity to take part in Russian research and technology programmes. The key mechanisms of accessing Russian programmes for financing research and technological projects are as follows:

— Russian federal targeted programmes;

— Bilateral and multilateral programmes;

— New Russian initiatives.

Table 3

The structure of the seventh framework programme for 2007—2013 [1]

Sub-programme	Content	Funding. bln Euro
Cooperation	The sub-programme supports all types of research activities — from joint research projects and network partnerships to the coordination of national research programmes. The priority themes of the sub-programme are healthcare, food, agriculture, and biotechnologies, information & communication technologies, nanosciences and nanotechnologies, materials and new production technologies, energy, environment, transport, socioeconomic sciences and the humanities, space, and security.	32.4
Ideas	Its objective is to reinforce excellence, dynamism and creativity in European research and improve the attractiveness of Europe for the best researchers from both European and third countries, as well as for industrial research investment.	7.5
People	This sub-programme is aimed to facilitate the career development of researchers.	4.7
Capacities	The sub-programme aims to enhance research and innovation capacities throughout Europe and ensure their optimal use. The Capacities Programme operates in the following broad areas: research infrastructures, research for the benefit of SMEs, regions of knowledge and support for regional research-driven clusters, research potential of Convergence Regions, science in society, support to the coherent development of research policies, international cooperation.	4.1
Euratom	It is aimed at research in the field of energy, predominantly nuclear. There are two associated specific programmes, one covering indirect actions in the fields of fusion energy research and nuclear fission and radiation protection, the other covering direct actions in the nuclear field undertaken by the Commission's Joint Research Centre.	5.25

Federal target programmes — as any other national programmes — are designed for Russian applicants; however, foreign organisations can also take part in the programme's calls. Moreover, EU researches and research organisations can participate in projects funded through the FTP as subcontractors of Russian grantee organisations. In the framework of a number of FTPs, commissioning organisations sometimes hold so called special calls aimed at the development of international cooperation in the field of science and technology. These calls encourage international participation. Sometimes FTPs use international marketing experience and invite international experts to participate in the evaluation process.

Bilateral agreements are the simplest form of Russia-EU cooperation, since the funding of the international partner is carried out, as a rule, through the budget of their home country. The access to such funding becomes simpler and reporting requirements more transparent.

As to new Russian initiatives, one can recall the programme entitled "Measures to Attract Leading Scientists to Russian higher Educational Institutions" or the so called Skolkovo project. These programmes aim to attract international experts.

Russian research programmes and foundations (federal targeted programmes, Russian Foundation for Basic Research, Russian Foundation for the Humanities, etc) created mechanisms that facilitate attracting EU partners to the activities of foundations and implementation of programmes.

Alongside the mentioned instrument of Russia-EU international cooperation in the field of research and technology cooperation and innovations, there are other forms of cooperation. Russia takes an active part in such large-scale international projects as CERN, ITER, the International Space Station, GLORIAD, etc., which go beyond EU framework programmes [1].

CERN stands for the European Organization for Nuclear Research, with whom Russia signed an agreement in 1993. The Large Hadron Collider project is the major achievement of the laboratory.

The international thermonuclear experimental reactor (ITER) project is a large-scale scientific experiment designed to demonstrate the possibility of using thermonuclear synthesis as an energy source. The project was launched in 1986. Project's base — Cadarache facility — is being erected in the south of France [1].

Moreover, Russia is involved in the development of a number of large-scale European research facilities. For instance, Russia co-funds the construction of the European x-ray free electron laser (European XFEL). In June 2011, a memorandum of understanding was signed by the European Synchrotron Radiation Facility and the Kurchatov Institute national research centre in Moscow; thus Russia is granted an opportunity to become a full member of this European organisation [1].

Let us draw conclusions from the above:

1) Russia-EU cooperation in the field of innovations is carried out in the framework of several co-funding programmes.

2) The existing transboundary cooperation programmes (for example, the Baltic Sea region programme for 2007—2013) cannot ensure full Russian participation in the projects implemented in the framework of such programme, since there are no financial mechanisms designed for Russia. How-

ever, these programmes make a considerable contribution to the development of Russia-EU international cooperation in the field of research and technology development.

3) Despite that the Russia-EU cross-border cooperation programme covers only those territories of Russia that belong to the Baltic, Barents, and North Sea regions, the financial opportunities of cross-border innovation projects are quite significant.

4) The most efficient programme of Russia-EU cooperation in the field of innovative development is the Seventh framework programme, which brings together various sub-programmes and priorities aimed at research and technology development in different fields. Recently, the Seventh framework programme has cooperated with Russian national foundations, for example, federal targeted programmes for innovative development, which facilitates the development of Russia-EU cooperation; however, there are certain obstacles, mainly, different financing periods of joint projects and, as a result, problems with reporting.

Despite the fact that Russia-EU cooperation has developed over a limited period, Russia occupies a paramount position among other partners of the EU in this sphere. There are a large number of joint international projects in the field of development of research and innovations implemented by Russian and EU organisations. Such cooperation is supported by a number of financial instruments facilitating international R&D activities in the field of innovations, science, and technology. Recently, a lot has been done to develop new, more efficient Russia-EU cooperation in the field of research and innovations based on equal distribution of responsibilities through introducing co-financing mechanisms and joint coordination of programmes. An important factor of Russia-EU cooperation is the fact that all innovative growth points emerging in our countries and concentrated, as a rule, at national research universities, federal universities, national educational and research centres, as well as small and medium innovative enterprises, place great emphasis on international cooperation.

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