# DRAFT - Report 6

# Linking Russia to the ERA: Coordination of MS'/AC' S&T programmes towards and with Russia

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# Table of Contents

# 1 Introduction

This draft report summarises findings of several analytical reports prepared in the frame of Work Package 1 of the ERA.Net RUS[1] project. Work package 1 was dedicated to prepare the analytical ground for coordinating EU MS´/AC´ S&T and innovation programmes towards Russia or with Russian Programme Owners. The paper includes currently information from ERA.Net RUS report 1 on the Russian S&T system, report 2 on the Russian S&T funding system, report 3 on bilateral S&T cooperation between EU Member States (MS)[2] and Associated Countries (AC) [3] on the one hand, and Russia on the other hand, and finally of report 5 on experiences of Russian participation in ERA.Nets and of other international ERA.Nets.

The main findings of the different reports are compiled in separate chapters. In a concluding chapter several points of the reports are taken up to briefly discuss "Opportunities and Needs for advanced cooperation of S&T and innovation Programme Owners in EU MS/AC and Russia". A workshop with the same title will be held in Moscow on 27 January 2010; this short paper shall give a brief introduction and orientation for this workshop. The document will for the moment only be made available to workshop participants.

# 2 The Russian S&T system

As a global player on the political and economic stage and as the European Union's largest direct neighbouring country, Russia is considered as one of the main strategic international partners of the EU. According to the Country Strategy Paper 2007-2013 of the European Commission for the Russian Federation, "EU cooperation with Russia is conceived in terms of, and is designed to strengthen, a strategic partnership founded on shared interests and common values."

One of the main objectives of the EU-Russia roadmap for a common space of Research and Education is "to support joint efforts in elaboration and harmonization of the approach towards the creation of a EU/Russia common space in the field of research." The EU-Russian S&T agreement which was renewed on 30 March 2009 is one of the major legal frameworks on Community level. The 7th Framework Programme for Research and Technological Development (FP7), and especially its ERANET scheme of the specific programme "Capacities", also provide useful instruments for addressing joint interests of EU and Russian S&T programme owners and for planning a sustainable S&T programme for mutual benefit.

The ERA.Net RUS analytical report 1 provides an overview of the structure of S&T in Russia, Russian strengths and national priorities in S&T; main S&T institutions, present state of international cooperation with emphasis on EU MS/AC. The main conclusions of the report are the following :

[1] www.eranet-rus.eu

[2] EU MS: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

[3] AC to FP7: Albania, Bosnia and Herzegovina, Croatia, FYR of Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Serbia, Switzerland, Turkey

## *1. Economic background*

Russia's economic structure is very different from most European countries – there is a predominance of large companies, concentration on mining and heavy industry, and an almost complete lack of high-tech and consumer goods industries. Therefore Russia's innovation system also has quite distinctive characteristics. Historically, Russia, as part of the former Soviet Union, has been characterized by a well developed system of public R&D institutes. During the transitional period, this sector of the innovation system experienced severe troubles: low level of financial support from the State budget and industry, decreasing salaries for scientists and engineers and *de facto* stagnation of R&D activity.
Overall, the major characteristics of the R&D system in Russia are[4]:

- 61% of the funding comes from the federal budget (2006). Starting from 2002, its share is growing annually.
- 73% of organizations conducting R&D are state-owned (they are in federal property).
- 77% of all personnel in R&D work in state-owned R&D organizations.

Therefore domination of the government-owned budget-funded institutions in the Russian S&T sector remains the main distinction from the science systems of EU Member States and other major industrial countries. It is also one of the major challenges in terms of the future restructuring of the Russian science system on the way of making it more competitive at the international level.

## 2. *Research expenditures*

In 2006, the share of R&D expenditures was 1.08 % of GDP, which is low in comparison with the EU (1.76 %), the USA (2.62 %), and Japan (3.39 %). Nevertheless, the financial input into the development of the Russian R&D system from the government was significant in relative terms during the latest years and reached 0.66 % of GDP in 2006 (including 0.36 % for civil science). In comparison this indicator was slightly above the EU level, which reached 0.61 % of GDP, and only slightly below the USA with 0.77 %. In contrast, low funding for R&D from business is an issue often raised by top officials of the Russian Federation.

Three bodies control most of the civilian State R&D budget: the Russian Academy of Sciences, which is still the major R&D actor, the Federal Space Agency (Roskosmos), and the Federal Agency for Science and Innovation.

## 3. *Legal and policy framework*

The Russian S&T system is still policy-driven at the national level. The Ministry of Education and Science (MES Russia) works out the federal strategy for the scientific and technological development. The most recent strategy making document is the "Strategy for the development of science and innovation in the RF for the period up to 2015."
At the implementation level, two main agencies are in charge of supporting R&D by means of Federal Targeted Programmes, which are the new tools designed for funding R&D in a competitive way:

- the Federal Agency for Science and Innovation (FASI),
- the Federal Agency for Education,

FASI implements especially the main competitive funding programme for S&T, the "Federal Targeted Programme R&D in Priority Fields of the S&T Complex of Russia 2007-2012".

*4. Scientific excellence*

The cross-country comparison shows that absolute figures of S&T human potential bring Russia to the fourth place in the World, right after China, Japan and the USA. Russia also ranks among the leaders by certain relative indicators like scientific publications. But for important comparative indicators such as citations or patents, Russia is obviously not at the forefront. Despite the considerable scope of human potential, its dynamics show an overall decrease of R&D personnel, although the pace of decrease has slowed down in the past years. Russia disposes still of scientific excellence in basic research fields such as physics, biology, etc. and in certain applied research areas such as nuclear or space research.

*5. Higher Education and Research*

Russia has a particular division between organisations that conduct research and education. Research was historically performed at research institutes of the Russian Academy of Sciences (RAS), and higher education at universities. The new "Federal law on integration of science and education" (2007) aims at boosting S&T and innovation activities in Higher Education Institutions and establishing of close linkages between HEIs and research institutions. One of the recent achievements here is the new statute of National Research Universities assigned to leading Universities on the basis of a call for tenders.

6. *Innovation policy*

The number of federal and regional ministries and agencies, and public corporations involved in the formulation and implementation of innovation policy has increased over the last years.
At the same time, the National System of Innovation (NSI) suffers from the heritage of the Soviet Union and the social, political and economic transition of the nineties. According to the MES itself, the main NSI weaknesses are:

- Insufficient coordination between public and private sectors in development of priorities and measures of financial support for R&D.
- Low level of implementation of adopted measures aimed at promoting innovation activity in the enterprise sector to solve the problems of technological backwardness of industry.
- Fragmented nature of policy aimed at improving inter-agency transfer of knowledge and technology, low level of inter-ministerial coordination of innovation activity.
- Low level of support for small innovative enterprises at all stages of development, lack of large innovative companies in the country and as a consequence, lack of promotion of real life experience of innovative entrepreneurship.

Therefore Russia has to overcome a large scope of problems and barriers to introduce and develop an efficient and competitive NSI. The effect of the practical measures provided by the Government on reorganisation of national S&T during the last 15 years are visible, but still too limited. Changes of the situation will strongly depend on the success of measures aimed at improving the overall business environment, the economic stability, and the rule of law.

7. *International cooperation.*

According to its national strategy for the development of science and innovation, Russia is willing to create favourable conditions for international S&T co-operation. Importantly, the Federal Targeted Programme "Research and Development in Priority Fields of S&T Complex

of Russia for 2007-2012" allows for participation of foreign entities.
The agreement on cooperation in science and technology between the EU and the Government of the RF, renewed on 30 March 2009, is a formal basis of the cooperation in S&T between the EU and Russia. Russia had the highest participation in the FP6 (2002-2007) of all Third Countries[5]. Entities from the Russian Federation participate in all thematic and sub-programmes of FP7, including in coordinated EU-Russia calls in several thematic priorities. Russia has signalled its interest in an associate status to the FP7.
Data for co-publications between Russian and foreign scientists exhibit a significant trend of bottom-up bi- and multi-lateral cooperation, especially in fundamental research. The Russian Foundation for Basic Research is the major player which provides support for international cooperation on a joint and competitive basis.

8. *Overall*, the Russian S&T sector shows an ambiguous picture: the Russian R&D personnel has stabilised and financial inflows into S&T have significantly improved over the last years. Important reforms have been achieved in that functioning independent Funds for R&D support have been established and competitive funding programmes have been introduced. Innovation support has been given a priority and several support measures been devised. But large parts of the S&T sector function still in an old Soviet mode, where funding is spread without or only limited competition and accountability.

Although some obstacles regarding internal regulations remain to be tackled, Russia has the research potential, the resources, the instruments, and eventually the willingness to make a new step to strengthen S&T cooperation with EU Member States and Associated Countries to FP7 for a mutual benefit.

# 3 The Russian S&T funding system

During the period of reforms, the Russian R&D sector became one of the areas negatively affected by the transformation to a market economy. The key evidence is an unprecedented decline in funding and R&D staff (until the mid-1990s). It has led to worsening of the institutional environment of the R&D organisations, deterioration of their resource base and their position in international R&D and on high-technology markets.

An important international benchmark is Gross Domestic Expenditure on Research and Development (GERD) expressed as a share of Gross Domestic Product (GDP). In the years after the dissolution of the Soviet Union, Russia saw a sharp decline of this indicator from slightly over 2% to a low of 0.74% in 1992. The indicator started then to grow again and in the period 1995 - 2003 it increased from 0.85% to 1.28% and stayed the following years above 1%.
The size of Russian GDP itself changed: in constant prices of the year 2003 it stagnated or decreased from in RUB 10361,7 billion in 1995 till in 10193,4 in 1999 and since 2000 it was steadily growing reaching 18552,5 in 2008.
In 2008 GERD reached in Russia RUB 431.07 billion, which is expressed in € 11.8 billion. (EUROSTAT Database, 2010). Expressed as a percentage of GDP, Gross Domestic Expenditure on R&D amounted to 1.03%, which meant a decline as compared to previous years (in 2007 GERD amounted to 1.12% of GDP).

[5] The term "Third Countries" relates in the context of the EU Framework Programme to countries, which are neither EU Member States, nor Associated Countries to the Framework Programme.

In absolute comparable figures (USD by PPP[6]) of GERD, Russia ranks among top ten countries in the world. However, all major performance indicators (international publications, international patents, etc.) have been steadily declining in the past few years and, with the exception of absolute numbers of researchers, Russia has not been among the leaders.

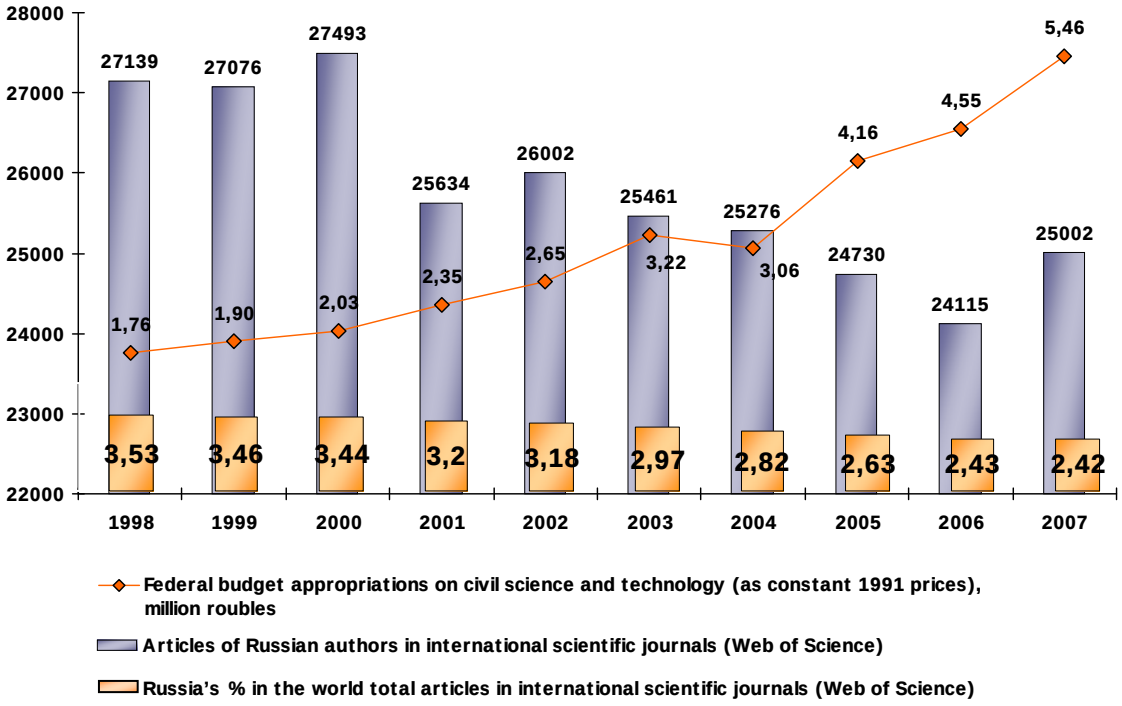
**Table 1. Gross domestic expenditure on R&D, researchers – an international comparison**

| Country | GERD, mln USD PPP (2007) | Ranking | Country | Researchers, persons (2007) | Ranking |
|---|---|---|---|---|---|
| USA | 343747.5 | 1 | USA | 1,387,882 | 1 |
| Japan | 138782.1 | 2 | China | 1,223,756 | 2 |
| China | 86758.2 | 3 | Japan | 709,691 | 3 |
| Germany | 66688.6 | 4 | Russia | 392,849 | 4 |
| France | 41436.2 | 5 | Germany | 282,063 | 5 |
| Korea | 35885.8 | 6 | France | 204,484 | 6 |
| UK | 35590.8 | 7 | Korea | 199,990 | 7 |
| Canada | 23838.9 | 8 | UK | 183,535 | 8 |
| Russia | 23486.1 | 9 | Canada | 125,330 | 9 |
| Italy | 17827.0 | 10 | India | 115,936 | 10 |

Sources: *Higher School of Economics, S&T Indicators, 2009*; *Science in the Russian Federation, 2005*.

[6] Purchasing Power Parities

**Diagram 1. Performance of R&D expenditure**




Sources: *Higher School of Economics, S&T Indicators, 2009*; *Science in the Russian Federation, 2005*.

**Expenditure Structure**

In difference to most EU countries, expenditure in Russia is largely dominated by the government, which provides 63% of GERD. However, most of R&D is performed in the Business & Enterprise sector. This specificity of the Russian S&T system can be explained by the fact that a substantial range of research institutes are organised as fully or partly state owned companies and that several research intensive companies are publicly owned.

The Business Enterprise sector provides 29% of R&D expenditure, while funding from abroad counts for 7%.

The Higher Education sector accounts only for a minor contribution to R&D funding and performs in comparison to competitor countries a much lower share of R&D.

The Private Non-Profit sector is marginal in Russia, what concerns funding as well as performance of R&D.

Key government agencies are in charge of large parts of the civil S&T budget: the Russian Academy of Sciences, which is still the major actor in Russian R&D, the Federal Space Agency (Roscosmos), and the Federal Agency for Science and Innovation (Rosnauka).

**S&T funding trends**

R&D in Russia is de facto overwhelmingly publicly funded, mainly from the federal budget, but also from regional budgets or from publicly owned companies. Thanks to strong economic growth with GDP growth rates of around 6% over recent years, Russia was able to invest in absolute figures substantially more funds in the S&T sector.

Foundations for distributing R&D funding through competitive calls were established in Russia in the 1990s and are well functioning and recognised bodies meanwhile. Three Foundations need to be mentioned here: the Russian Foundation for Basic Research, the

Foundation for Assistance to Small Innovative Enterprises and the Russian Foundation for Humanities.
New competitive funding programmes, so-called Federal Targeted Programmes, were introduced for stimulating specific thematic priorities (e.g. nanotechnologies) or socio-economic priorities (e.g. human resources). The economic situation helped to strengthen a policy shift to more competitive and project based allocation of R&D funding in Russia.
In 2005 around 25% of the civil governmental R&D funding was allocated competitively. The share of competitive funding is constantly increasing, with a tendency towards 50% of civil governmental R&D funding in current years and a planned further increase up to 70%. These are ambitious goals, but it should also be noted that effective competition is in some sectors still rather limited.
Federal Targeted Programmes are conceived multi-annually and come with substantial budgets. Funds are spread over the programme period, whereby budgets are usually planned with annual increases. The spending peak is then foreseen at the end of the period. Programmes were calculated on the basis of steady and substantial economic growth. But as the financial crisis has also hit Russia, cuts of up to 30% had to be implemented for the 2009 R&D budgets. Effects of cuts on programme implementation remain to be seen.
Recent legislative changes have been laid down in key strategic documents (such as Strategy 2020, Anti-crisis programme 2009) and are aimed at facilitating R&D and innovation. This concerns for example universities, which may commercialize their R&D, tax exemptions, and large public companies, which are obliged to put up innovation strategies.

# 4 Bilateral S&T cooperation between EU MS/AC and Russia

In the ERA.Net RUS report the state and perspectives of bilateral S&T and Innovation programmes between Russia on the one hand, and EU Member States (MS) and Associated Countries (AC) to the FP7 on the other hand have been described. The report facilitates understanding major activities of S&T and Innovation Programme Owners of EU MS/AC towards Russia and of Russian Programme Owners towards the EU MS/AC. Under the term “Programme Owner” we understand here governmental and non-governmental organisations, which finance and/or manage S&T funding programmes. In most cases these organisations are ministries, research or innovation funds, or R&D organisations (such as Academies of Science).

Information and data on the bilateral S&T cooperation programmes were gathered by means of a survey. Around 140 Programme Owners in Russia, and in nearly all EU MS/AC were contacted in summer and autumn 2009 for responding to a questionnaire covering a broad range of aspects of their cooperation programmes, such as S&T agreements, programme management, funding instruments, evaluation procedures, budget, thematic priorities, funded projects, etc. Preliminary results of the survey were discussed at an ERA.Net RUS workshop in Tallinn, Estonia end of June 2009.
In this draft version of the report have been included survey data of a solid sample of 39 Programme Owners from EU MS/AC and data of 10 Russian Programme Owners. Survey data were further enhanced by in-depth interviews with 8 Russian and 14 EU MS/AC Programme Owners.

The analytical basis provided with this report shall facilitate finding common ground to build a joint multilateral S&T cooperation among Programme Owners of EU MS/AC and Russia.

The findings of survey and interview data analysis on the bilateral S&T cooperation are the following:

1. An **impressive wealth of S&T cooperation exists on bilateral as well as multilateral level between Russia on the one hand and EU Member States and Associated Countries to the FP7 (EU MS/AC) on the other hand**. Countries that do not have a bilateral cooperation programme with Russia and even rather small EU Member States cooperate with Russian teams at least in the frame of EU funded projects.
   On bilateral level several countries stand out with comprehensive cooperation. This concerns above all the big EU countries **Germany and France**. Several smaller countries have a remarkable tradition of cooperation with Russia too; this concerns for example the Nordic countries **Finland and Norway**, which have as Russian neighbours also financially substantial cooperation programmes. But also **Austria, Greece, Italy, Israel, Poland, Switzerland, and United Kingdom** have traditionally good and comprehensive S&T cooperation with Russia. Interestingly, the Netherlands, which have long had a cooperation programme with Russia, which generated positive results, have reduced their cooperation.

2. **Programme Owners** involved in S&T cooperation with Russia **are mostly governmental organisations** as compared to non-governmental. In Russia all Programme Owners are governmental organisations.

3. **S&T agreements provide a formal framework, within which efficient cooperation programmes, can be implemented.** They are considered an important instrument to develop international S&T cooperation with Russia. The Russian Academy of Sciences has the most dense network of agreements in place with partners in 28 EU MS/AC, next follows the Ministry of Education and Science, which has concluded bilateral agreements with 21 EU MS/AC and third comes the Russian Foundation for Basic Research, which has agreements with organisations in 12 EU MS/AC in place.

4. **Funding programmes in basic research are obviously more substantial**, which reflects the strength of Russia in basic research. Further down the innovation pipeline, cooperation is beginning to develop more comprehensively: joint calls FASIE-OSEO, FASIE-IB; international participation in Rusnano or RVK programmes can be mentioned here.

5. Budgets for EU/AC funding organisations are difficult to compare, as only limited information is available from programme owners. In numerous cases there are either no budget figures available or only an overall budget for international cooperation is calculated, without specific figures for cooperation with Russia alone. Nevertheless the **front runners in budget size** from the preliminary sample can be singled out with organisations in AT (Austrian Science Fund), DE (Helmholtz Association, German Research Foundation, International Bureau of BMBF), FI (Academy of Finland), FR (CNRS), NO (Research Council of Norway).
   **Budgets for S&T cooperation with Russia have mostly increased over the past years** on the side of EU MS/AC Programme Owners and for some POs **further budgetary increases or relaunches of cooperation are foreseen**.
   On the side of the **Russian Programme Owners**, the Federal Agency for Science and Innovation has the highest budget for S&T cooperation with EU MS/AC, followed by the Russian Foundation for Basic Research and the Foundation for Assistance to Small Innovative Enterprises. **Budget figures show for all three organisations a strong increasing tendency for cooperation with EU MS/AC.** The budget of the Federal Agency for Science and Innovation is used for multilateral cooperation with the EU

Framework Programme for RTD mainly, while those of RFBR and FASIE are dedicated to bilateral cooperation mainly. For the Russian Academy of Sciences, no exact figures are available, but a multitude of cooperation programmes mostly with Academies of Sciences in EU MS/AC are in place.

6. **Thematic priorities** dealt with in the S&T cooperation with Russia **cover a broad spectrum of science**. There are though some thematic limitations in the programmes: on the Russian side, while programmes of the RFBR are limited to the sciences, the RFH deals with humanities and social sciences. A majority of Programme Owners on the side of EU MS/AC follow a broad thematic approach, but several funding organisations have defined specific thematic priorities for their cooperation with Russia (e.g. Norway: Energy, Oceans, etc.). **Most frequently cited thematic priorities** in the cooperation are **nanotechnologies/materials, energy, environment/climate change, socio-economic sciences and humanities, ICT, biotechnology**.

7. A variety of **obstacles, such as legal problems, budgetary limitations, problems with transfer of funds and material, visa problems, cultural and language barriers**, have been mentioned by funding organisations, which do hamper the bilateral cooperation. But also **information deficits on bilateral cooperation programmes and on funding procedures** applied by Programme Owners do exist; information exchange provided for example within the ERA.Net RUS project should help to improve this situation.

8. **Evaluation procedures** for projects supported are mostly **well established** in EU/AC as well as in Russia. Evaluations are usually performed by 2-3 independent experts. The duration of the evaluation varies from 2 weeks to 8 months, whereby it tends to be shorter in timing in Russia. The most usual case is from 1 to 3 months. Programme Owners in EU MS/AC tend in around 50% of cases to perform their own separate evaluation procedures. Joint evaluation procedures are applied by 20% of Programme Owners; the rest is using some mixed forms of separate and joint evaluations.
   Programme Owners **focus on the scientific quality, suitability of applicants and feasibility of projects in the evaluation** of projects. The next most frequently used evaluation criteria are added value of the cooperation and participation of young scientists.

9. **Impact assessments of cooperation programmes are only rarely undertaken.** But that is often a general problem in international cooperation, which is valid also for FP funded projects. Impact assessments are planned for RFBR and EU/AC funding organisations. Some kind of self-evaluation is undertaken via annual reporting. But it goes only rarely into the substance of results: how many joint publications as a result of project, patents, technologies implemented, etc.

10. **Intellectual Property Rights (IPR) do for most Programme Owners not pose important problems.** The further cooperation moves to applied research and innovation, the more important become of course IPR issues. The current situation proves that S&T cooperation is mainly ongoing in basic research.

11. **Good practice examples** mentioned by Programme Owners concern **support for research and networking** activities among scientists: **Workshops, joint laboratories, training groups, science days** etc. The building of interpersonal relations and the increase of contacts is often a good means of furthering successful implementation of future projects.

12. There is **great interest on the side of Russian programme owners as well as on the side of several Programme Owners of EU Member States and Associated Countries of the FP7 to develop and deepen the cooperation**.

# 5 Experiences from Russian participation in ERA-Nets and from ongoing international ERA-Nets

In ERA.Net RUS report 5, experiences from Russian participation in ERA-Nets (Bonus, ERASysBIO, EUROPOLAR) and from ongoing international ERA-Nets (e.g. SEE-ERA.Net, COREACH) were collected by means of a phone survey among coordinators of these ERA-Nets and among the Russian participants. These experiences shall provide instructive "lessons learned" for the implementation of a joint funding programme in the frame of ERA.Net RUS.

**Lessons learned**

1. Coordinators of ERA-NETs with Russian participation (other than ERA.Net RUS) think there is a **lot of potential in EU-Russia cooperation**, **despite several problems** mostly related to the functioning of state-level authorities, bureaucratic barriers and differences in administrative cultures. Even though in all these ERA-NETs, Russia was an associate partner and its role and input were rather modest, most of the European coordinators considered that the **partnership between EU and non-EU partners was balanced and well functioning**.

2. According to the coordinators, taking part in an ERA-NET has **improved their knowledge and understanding of Russian state policies and funding instruments**, which can be considered as one of the main results of the cooperation, as it prepares ground for future joint actions. RFBR, as well, considers that the **ERA-NETs reasonably encouraged building scientific partnerships between Russia and EU/MS**.

3. It can also be seen that ERA-NETs have led to an **improved access to knowledge and expertise** necessary in tackling global problems or problems that the partner countries are facing.

4. Furthermore, all the respondents tended to think that the **ERA-NETs have clearly improved Russia's ability to participate in research activities funded under the FP**7 and created a **better ground for other joint research activities** between the EU and Russia.

5. A closer **integration of the Russian partner to the consortium management and tasks** as well as coordinator reacting to alarming signals would probably solve some of the problems occurred in other ERA-NETs with Russian participation.

6. Judging from the experiences of international ERA-NET partners, it can be said that the **targeted third country/ies need/s to be fully involved in the project already from the initial planning phase**, in order to build trust among the partners.

7. It needs to be taken into consideration also that when the targeted third country/ies is/are of huge strategic importance to all the European partners, they may be **less willing to cooperate multilaterally than bilaterally, and, as a consequence, are less ready to share their information and experience** among the network partners.

8. A **source of possible problems might be the relations between organisations coming from the same country**, since the potential national tensions are then reflected at the European stage.

9. Another lesson learned from international ERA.Nets is the importance of a **working connection between supervisory and executive bodie**s, so that there is less hierarchy and no breaks in the flow of information.

10. Overall it can be said that **equal treatment of the network partners is a key to success**. Everybody needs to be involved in the project from the start. However, variable geometry can be used so that only some of the partners participate in the joint action, such as a joint call, if it is not possible for all. In any case the information flow has to be ensured.

11. One of the **biggest challenges** for the network is **selecting the topic for joint activities** and it might be sensible to make a profound analysis of the possible themes considering for example the scientific strengths of the partner countries.

12. One could consider establishing a **scientific council**, composed of well renowned scientists, to support the project selection process. The council could screen the cases with high discrepancies in scores and check and adjust the ranking list of proposals.

13. The **expert potential of Russian Programme Owners** such as RFBR should be used.

14. Possibility of using a **call implementation agency** might be assessed.

15. The **work load and administrative burden** caused by arranging the call should be **kept in good balance with the call's budget and the estimated number of proposals**.

16. The **call text itself has to be written carefully** to avoid any confusions and it need to contain all the relevant facts concerning the call procedures, evaluations and funding decisions. The rules cannot be changed midstream, either.

17. Russia and the EU should consider to **further reduce the administrative and financial barriers to S&T cooperation**.

# 6 Opportunities and Needs for advanced S&T cooperation between Russia and EU MS/AC

The following points on opportunities and needs for advanced S&T cooperation between EU MS/AC and Russia shall give some first input for discussion at the workshop in Moscow, why such cooperation may be useful and which issues should be considered here. The following is certainly not an exhaustive list and the workshop shall serve to discuss and possibly add more arguments. The issues mentioned in the following are based on findings of the ERA.Net RUS analytical reports, of results of an ERA.Net RUS workshop on lessons learned of bilateral S&T cooperation (in June 2009), but take into consideration also other documents such as the RUSERA.EXE survey among EU MS/AC and Russian scientists on their cooperation experience within FP6 projects[7].

[7] RUSERA-EXE. Expanding the ERA over Russia. Spotlight on EU-Russia RTD cooperation. A snapshot of experiences on researchers' level. Vienna, 2009.

1. **S&T cooperation between EU MS/AC and Russia is in general expanding and willingness to further increase cooperation is obvious among Programme Owners.** ERA.Net RUS survey data show that budgets as well as funded projects within bilateral S&T cooperation programmes with Russia have increased over recent years. In addition several responding Programme Owners have stated that they intend to strengthen or relaunch cooperation. The ERA.Net RUS project with its planned Pilot Joint Call and its strong consortium further underpins the argument of a willingness to enhance cooperation.

2. The total amount of national S&T funding programmes of Russia, Germany and other EU MS/AC accounts for a multiple of the FP7 budget. This **immense national S&T funding potential is an indispensable source to enhance the multilateral S&T cooperation** between EU MS/AC and Russia.

3. ERA.Net RUS is composed of a **solid consortium including the leading Programme Owners of EU MS/AC** such as Research Council of Norway, Academy of Finland, International Bureau of BMBF, etc.; those Programme Owners invest substantial budgets in bilateral S&T cooperation with Russia. A joint S&T funding activity (Pilot Joint Call) with Russia is planned and will be started in 2010. The consortium welcomes and is open to participation in this funding activity of Programme Owners, which are not part of the current consortium.

4. **Multilateral S&T funding cooperation with Russia is successfully tested**: RFBR has trilateral cooperation established with Germany and France and has launched multilateral calls with INTAS. FASIE has also launched a call with INTAS and Rosnauka is funding the Russian teams in coordinated calls with the EU FP7.

5. **International ERA.Nets** such as the ERA.Net for the Western Balkan Countries (SEE-ERA.Net) have implemented joint calls and **have proven that such joint and coordinated procedures for call management, evaluation, funding and contracting can work** for the benefit of scientists. A survey among scientists participating in the SEE-ERA.Net Pilot Joint Call showed that more than 98% of responding scientists would participate again in such a Call of the SEE-ERA.Net consortium.

6. The ERA.Net RUS workshop in June 2009 in Tallinn, Estonia **confirmed a principally great interest of Programme Owners in multilateral joint funding activities** and that **multilateral funding activities would be a next logical step** from the well established bilateral level.

7. A **missing link in the S&T cooperation** between EU MS/AC and Russia is a programme for **small to medium scale multilateral R&D or innovation projects**. This would complement bilateral projects, usually small in consortia and funding, and FP7 projects, usually embracing big consortia and funding in million € sizes. By some programme owners it was mentioned in interviews that a funding programme such as INTAS, which provided such mid-size multilateral support, is missing now.

8. **Information exchange on bilateral funding programmes, procedures and results of cooperation is an issue frequently mentioned** by ERA.Net RUS survey respondents and scientists. ERA.Net RUS has taken here already several measures to cure this problem: two ERA.Net RUS workshops were held, information on bilateral programmes was exchanged, a database on bilateral and Russian S&T funding programmes is in the course

of being established, 6 analytical ERA.Net RUS reports are about to be finalised and will be disseminated widely. And further efforts are envisaged.

9. ERA.Nets bring national S&T funding organisations together with the aim to coordinate national programmes for joint, multilateral funding efforts. **Coordination of thematic priorities** is a useful purpose here. Several approaches are possible for this coordination:
    - Focus on thematic priorities with proven cooperation capacity; e.g. in the ERA.Net RUS survey, the following thematic fields were top ranked: nanotechnologies/materials, energy, environment/climate change, socio-economic sciences and humanities, ICT, biotechnology.
    - Focus on strengths of Russian S&T, e.g. physics, mathematics.
    - Stimulate topics, which are underrepresented in bilateral S&T cooperation.
    - Focus on thematic priorities, which are in line or complementary to topics covered in the FP7.

    A careful selection of topics is important, as otherwise this may lead to disappointments. In interviews it was mentioned for example that the limitation of the COREACH ERA-Net call to social sciences and humanities was not satisfying for some Programme Owners. (COREACH is the ERA-Net with China.)

10. A strong option for multilateral cooperation is the EU Framework programme. However, FP7 priorities cannot cover the entity of all S&T focal points of EU MS/AC and Russia. There remains a **broad potential of research topics beyond FP7**, both interesting for EU MS/AC and Russia.

11. The **orientation of research in a multilateral funding activity needs to be considered**: the ERA.Net RUS survey has shown that strongest and long lasting cooperation is ongoing in basic research, but that cooperation in applied research and innovation is increasing.

12. Financial and administrative obstacles (bank transfers, bureaucracy, visa, etc.) hamper S&T cooperation. A multilaterally coordinated and financially substantial funding cooperation can **facilitate financial and administrative procedures, and help reduce coordination costs** and stimulate scientific cooperation herewith.

13. Heterogeneity of Programme Owner consortia may lead to limited results of ERA.Nets. But **Russian participation in ERA.Nets** (Bonus, etc.) **has proven obviously successful**.

14. Participation of Programme Owners in multilateral funding activities **helps to single out the most competitive national research teams** through international evaluation procedures or at least internationally coordinated evaluation.

15. A multilateral funding programme allows through the pooling of resources for a **more substantial funding and provides for a single entry point to cooperation with a broad range of partners**. This **reduces the efforts for scientists**, as they do not need to submit to all different bilateral programmes or have new opportunities through broader consortia of Programme Owners.

16. Some **procedural and formal questions** may prove difficult for a multilateral S&T cooperation programme and **need to be well considered**. E.g. coordination of timing of a call (launch, deadline) has proved problematic in the past for Russian programme owners, as well as differences in evaluation criteria that are applied.