



NÁRODNÍ KONVENT

Participation of the Czech Republic in the European Research Area: The imperative of current development and opportunities that have not yet been made use of

A summary and recommendations based on a roundtable discussion about
Science and Research held within the National Convention on the EU
on 11 December 2015.

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Introduction

The European Research Area (ERA) is *“a unified research area open to the world based on the Internal Market, in which researchers, scientific knowledge and technology circulate freely and through which the Union and its Member States strengthen their scientific and technological bases, their competitiveness and their capacity to collectively address grand challenges”*¹. The Czech Republic has participated in the process of ERA formation in relation to its obligation to achieve the objectives set out in the Lisbon Strategy since 2003, when the government approved the structure of the Lisbon Process in relation to CR, including the assignment of responsibilities for monitoring and evaluation of achieving the Lisbon Strategy objectives in CR.

The support of cooperation among the Member States in research and innovation is a significant element of European research policy. There are several instruments at the EU level for this purpose, the most substantial ones being the EU Framework Programmes for research and technological development. The Czech Republic has participated in the Framework Programmes projects since 1999, i.e. since the start of FP5; however, in terms of engagement intensity it still belongs among the EU Member States with low participation. The low level of involvement of the Czech Republic in the Framework Programmes indicates to a certain extent the level of the international research cooperation of CR in general and demonstrates insufficient internationalization of the Czech research environment.

As the formation and execution of research and innovation policy in the EU is predominantly within the competence of the respective Member States, it is an important prerequisite for fulfilling the goals and social challenges the EU faces that the national priorities in the relevant research areas sufficiently reflect such challenges. In this respect, the considerable concord between the set European and national research priorities represents a certain positive foundation for increased involvement of CR in ERA. Both sets of priorities are identified in relation to the existing and future societal challenges, which is reflected by the current trend of research and innovation policy. On the other hand, implementation of national priorities might sometimes be too closely focused and limited to a discussion concerning fields in which CR achieves truly excellent results or in which it strives to achieve a significant status within global R&D competition. Besides, however, it is necessary to concentrate on support of research aimed at addressing the identified priority needs of the society, which we are not able to deal with successfully by ourselves and that thus require the engagement of partners within international cooperation.

Another important element of efficient ERA functioning is the development and sharing of research infrastructures. The efforts toward a more even distribution of research infrastructures in Europe are supposed to contribute to circulation of researchers and reinforce European cohesion. The jointly built infrastructures integrate European regions and provide the opportunity even to less developed regions to actively participate in ERA. CR

¹EC (2012): *A Reinforced European Research Area Partnership for Excellence and Growth*.COM(2012) 392.

has a relatively good position in terms of conditions for research infrastructure development and their incorporation into the European network of research infrastructures. Presently the principal goal is to ensure efficient operation of the established centres and to develop research infrastructures in order for them to become an integral part of ERA.

Roundtable Framework

The roundtable discussion of the National Convention on the EU, which was moderated by **Michal Pazour** of the Technology Centre of the ASCR, focused on the following question: how to improve conditions for a successful integration of the Czech Republic into the ERA, so that we would be able to efficiently utilize the benefits offered by the ERA and by our participation in it. An emphasis was placed on the following areas, which formed the framework of the discussion:

- 1) What is the cause of the existing low rate of participation of the Czech Republic in European research collaboration, and how to contribute to improving it?
- 2) Are the Czech Republic's thematic priorities in accord with the European Union's priorities?
- 3) How to ensure the integration of research infrastructures into the European Research Area?

The roundtable discussion was opened by introductory remarks from the deputy state secretary for European affairs, **Ms. Lucie Šestáková**, who reminded the participants that science and research are among the government's priority areas, which is evident not only from the growing state R&D expenditures but also from the ongoing restructuring of the state administration in the area of R&D.

The existing problem of the CR's low rate of participation in European research collaboration was outlined by **Mr. Vladimír Albrecht** from the Technology Centre of the ASCR. Using data from the 7th Framework Programme, he demonstrated, among other things, that based on the number of participations per 1 million of inhabitants, the CR is one of the ten EU states with the lowest rates of participation. Also, these states invest a significantly lower portion of their GDP into R&D than the CR. In relation to that, he also demonstrated that even though the CR has the second highest gross domestic expenditures on research and development (GERD) *per capita* among the new Member States, it receives by far the lowest FP7 support per EUR 1 million of the GERD (compared to the other new Member States). Because of the low rate of participation in research projects supported from this programme, the CR loses approximately CZK 800 million per year, which corresponds to about one fourth of the budget of the Czech Science Foundation (GA CR) or 3% of all funds invested into R&D from the state budget.

Causes of the CR's low rate of participation in the Framework Programmes of the EU were discussed in statements from the central state administration bodies responsible for R&D, which were presented by their representatives. In the first presentation, **Mr. Lukáš Levák**, the director of the Department of Science and Research at the Ministry of Education, Youth, and Sports of the CR, emphasized that despite the Ministry's supportive measures in recent years (such as increasing institutional support to participating institutions up to project expenses), there had been no success in the effort to increase the number of project proposals submitted by Czech research teams to programmes of European research collaboration. One of the reasons for that is a missing system of incentives for research organizations in the form of a system for evaluating and institutional funding of research organizations.

The position of the Ministry of Industry and Trade of the CR regarding the participation of the CR in the ERA was presented by **Mr. Martin Štícha**, the director of the Department of Research, Development, and Innovation. He emphasized three areas that need to be paid special attention – introduction of system motivation to increase the rate of the CR's participation in the ERA, creation of a quality and stable legal environment, and, last but not least, development of human resources, both in research itself and in the parts of the state administration responsible for R&D.

The presentation of **Mr. Jan Marek**, the head of the Department of Government and Parliament Agenda, offered the position of the Department of the deputy prime minister for science, research, and innovation of the Office of the Government of the CR. In addition to the missing system incentive, his presentation mentioned the average quality of Czech research as one of the potential factors of the low rate of the CR's participation in international collaboration. The average quality results in the limited interest of foreign teams in collaborating with some Czech research institutions. Other factors include the underestimation of preparations and long-term building of teams for collaboration on international projects, and the overall closed nature of the research system in the CR.

The follow up discussion was mostly about a more detailed evaluation of the causes of the low interest of research teams in participating in the Framework Programmes of the EU. The discussion was joined by representatives of the state administration, the Senate of the CR, universities, research centers, enterprises, and trade unions, which helped with the sharing of various outlooks on the matter of the low participation of the CR in the ERA. The following attendees participated in the discussion: **Ms. Rut Bízková**, chairwoman of the Technology Agency of the CR, **Mr. Václav Hampl**, chairman of the Committee for European Union Affairs of the Senate of the CR, **Mr. Arnošt Marks**, deputy of the Vice-Premier for science, research and innovation and Vice-Chairman of the R&D&I Council, **Mr. Petr Očko**, director of the Department of Support for Financial Tools and Project Management at the Ministry of Industry and Trade, **Mr. Miroslav Louma** of BIOCEV, **Ms. Anna Mittnerová** from the University of Chemistry and Technology Prague, **Mr. Tomáš Weiss** from the Charles University in Prague, **Mr. Martin Trtílek**, director of Photon Systems Instruments, **Ms. Eva Kupsová** of CEITEC, **Mr. Jaroslav Šulc** from the Czech-Moravian Confederation of Trade Unions, and **Mr. Milan Pospíšil** from the University Council.

During the discussion, it was mentioned that a big benefit of European research is that it opens the opportunity for Czech teams to collaborate with the most prestigious European institutions and to participate in investigations of problems whose demandingness exceeds the potential of Czech research. Among the reasons for the low rate of participation, some debaters listed the common complaint that taking part in projects means a substantial administrative burden for the participating team. Despite the almost twenty years of the CR's participation in the Framework Programmes of the EU, administrative support provided by Czech participating institutions to research teams still has not been improved. The discussion also revealed that the administrative burden is made even worse by financial controls by Czech authorities. Therefore, any improvements in this area will likely not come before relevant legal measures are amended. By contrast, the strengthening of synergies between operational programmes funded from ESIF funds and community programmes (especially the Horizon 2020 programme) presents an existing opportunity for a greater participation in European collaboration. One of the possibilities is, for example, the Seal of Excellence instrument, which allows for the funding of excellent projects of small and medium enterprises, for which there are no funds in the SME Instrument, from resources of the respective ESIF programme.

In conclusion, the roundtable participants agreed that the CR has currently very good conditions for the development of research activities, not least because of significant investments into the modernization of research capacities in recent years and because of the promising development of the segment of research-oriented small and medium enterprises. However, it is now necessary to efficiently utilize this potential and create a quality environment for the participation of the CR in European and global research collaboration, which will contribute to the improvement of competitiveness of the Czech economy and the quality of life of inhabitants.

Recommendations

Three main areas emerged from the round-table discussion, in which the government could help to facilitate a higher rate of participation of the CR in international (especially European) collaboration, a greater internationalization of Czech research, and thus an increase in the quality and subsequent impact of research activities realized in the CR.

1. Motivation for International Collaboration

One of the key factors that causes the low rate of participation of the CR in the ERA is the low motivation that research organizations have for taking part in projects of international collaboration. As was mentioned in each statement from the approached central state administration bodies and in a number of discussion comments, the current system of R&D evaluation and its related system for the distribution of institutional support to research organizations motivates the managements of these organizations and individual researchers to produce large numbers of publications, but the intensity of international collaboration is not factored into the evaluation. In view of the fact that institutional support accounts for a

significant part of the budget of research organizations, it is, from the perspective of the management of these organizations, rational to focus on maximizing results in evaluated parameters, while ignoring or even suppressing performance in non-evaluated parameters.

On the other hand, it is necessary for the CR to use international collaboration in European research to open the way to solving pressing problems whose difficulty exceeds local capacities. In addition to that, prestige and excellence in international collaboration on R&D is a prerequisite for having European institutions utilize our newly built research infrastructures in order to appreciate their high acquisition costs.

One of the key measures for increasing the motivation of research organizations and researchers themselves is the introduction of a new system for evaluating R&D that will shift from evaluating R&D results to evaluating research organizations. It will take into account overall activities of research organizations, including their participation in international research collaboration. The new system for evaluating research organizations should be followed by a new system of institutional funding, which will further increase the motivation of research organizations for greater openness toward international and multi-sector collaboration. Together, the new systems for evaluating and institutional funding of research organizations should contribute to an increase in the quality of research organization management, quality and relevancy of realized research, internationalization of research organizations, including mutual international researcher mobility, and more intensive participation in international research collaboration. Owing to this motivation, participation in international collaboration should become an integral part of the inner culture of research organizations. One of the existing starting points for the establishment of a new system for evaluating and institutional funding are the results of the IPN Methodology project, which include principles for comprehensive evaluations of research organizations and for a direct consideration of evaluation results in the system for institutional funding.

2. Friendly Administrative Environment

In addition to the strengthening of the motivation of research teams for a more intensive international collaboration, it is important to also take into consideration the administrative environment related to R&D project funding. With regard to the conditions of funding research projects from the Horizon 2020 programme, there is a prevailing criticism of the high administrative burden imposed by the European Commission in the Czech research community. Administrative conditions for participating in this programme are, however, identical for all research teams from all Member (and associated) States, and the CR has been a part to their stipulation (or at least could have been). The proper reaction on the part of research organizations thus should be to create a quality system of administrative support that would simplify and generally improve the process of submitting and realizing research projects in Horizon 2020. In this regard, it needs to be mentioned that the MEYS for a long time fosters the development of administrative support for the participation in projects of international collaboration, and additional funds for the development of these support

services in research organizations are ready in the OP Research, Development, and Education. Therefore, it is a task for all research organizations to create a quality system of project support for their institutions.

By contrast, the task for the state administration should be to create a unified environment for financial controls related to R&D project funding. At present, the matter is regulated by several laws, and R&D projects are controlled by a number of different control authorities, which adds an enormous burden for research organizations and enterprises. To a certain degree, it also decreases the legal certainty of the controlled entities. What is more, it leads to a non-standard situation in which financial authorities control even subsidies for R&D projects that are, by their nature, very specific. In such cases, a relatively deep understanding of the project's subject matter is required to judge the correctness, efficacy, and economy of the drawing of the subsidy. Financial authorities do not and cannot possess this knowledge.

Therefore, an important recommendation is to create an integrated system for financial controls that would ensure expert evaluations of controlled R&D projects, limit the administrative burden, and increase the legal certainty of controlled entities. In this regard, the new law on financial controls presents an opportunity.

3. Active Participation of the Public Administration

Public administration can also directly contribute to a greater internationalization of Czech research by participating more actively in pan-European and bilateral international collaboration between providers of support for R&D. The CR's current participation in such European initiatives, such as the Common Programming Initiative, ERA-Net, etc., is very limited, which lowers the potential for the participation of Czech research teams in international networks and consortia that prepare large-scale projects of international research collaboration (e.g. for the Horizon 2020 programme). It is, therefore, necessary for the funding providers to also increase their participation in collaboration with partner providers in other countries, thus creating better conditions for the participation of Czech research teams in international consortia.

Science diplomacy is also an important contribution of the government's policy to the development of international collaboration. It helps to promote the CR as a country with top-quality and attractive opportunities for R&D collaboration, and also helps to identify strategic partners for international research projects. Therefore, it would be useful to develop and continually strengthen science diplomacy in countries that are a priority for the CR with regard to the development of strategic research collaboration.

Last but not least, a more intensive participation of the CR in international collaboration can be contributed to by concerted support (not only financial) for research areas that are the priority for improving the competitiveness of the CR's economy and for fulfilling the needs of

the Czech society. That said, when implementing the national R&D priorities, the CR should use public funds to support not only the areas in which it excels and in which it has a chance to succeed in the global knowledge-based society – it should also invest in investigations of pressing societal challenges that would be difficult to satisfy using only our own devices and that, therefore, require an efficient participation in international collaboration. At the same time, the CR, being a Member State of the EU, should contribute to the investigation of problems that the Union needs to solve (typical examples include research in power production using fusion reactors, space research, transport issues, etc.).

Recommendations of the National Convention on the EU:

1. Introduce a system for evaluating research organizations that would take into account their overall operation, including their participation in international research collaboration.
2. Introduce a system for institutional funding of research organizations that would provide incentives for increasing the quality of the management of research organizations, quality and relevance of the realized research, internationalization of research organizations, including mutual international mobility of researchers, and for a more intensive participation in international research collaboration.
3. Create an integrated system of financial controls that would perform expert evaluations of controlled R&D projects, limit the administrative burden, and increase the legal certainty of controlled entities.
4. Reinforce active participations of providers of R&D support in collaboration with partner providers from other countries, thus creating more favourable conditions for the participation of Czech research teams in international consortia.
5. Develop and further strengthen science diplomacy in countries that are a priority for the CR with regard to the development of strategic research collaboration and promote the CR as an attractive country for international research collaboration.
6. When formulating national R&D&I priorities, do not limit the focus to areas and fields in which the CR is globally competitive, but identify also problems and needs whose effective solution exceeds the potential of the national R&D&I system and that therefore require a solution based on international collaboration.
7. Focus support on research areas that are the priority for improving the competitiveness of the Czech economy and for satisfying the needs of the Czech society.

This text is not a direct transcription of the individual presentations that were a part of the discussion. Therefore, it does not contain all that was said, and it does not express the views of all participants about all topics discussed. Instead, this text offers a summary of the most important points and formulates recommendations based on the discussion that took place. The text was prepared by Michal Pazour and Vladimír Albrecht from the Technology Centre of the Academy of Sciences of the CR.

The National Convention on the European Union, launched by the Office of the Government of the Czech Republic in November 2014, is a permanent venue for debate on European issues in the Czech Republic.

The project brings together representatives of the Government, state administration, both chambers of the Czech Parliament as well as European institutions, social partners, business, academia, NGOs, and other relevant stakeholders.

For more information about the National Convention on the EU go to www.narodnikonvent.eu and Twitter [@KonventEU](https://twitter.com/KonventEU).