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SYNERGIES IN THE EUROPEAN R&I FUNDING

**SIGNS OF THE TIMES FOR RESEARCH INFRASTRUCTURES
IN GENERAL AND ERICS IN PARTICULAR**

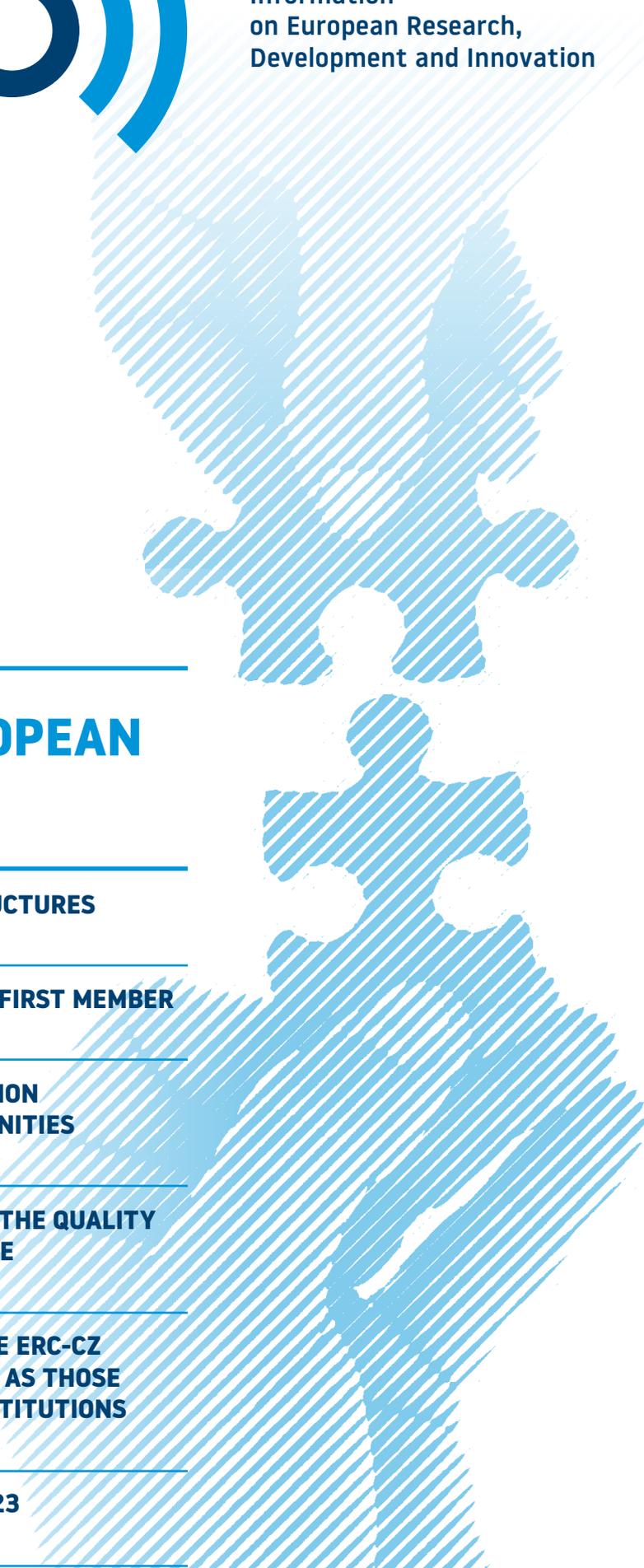
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**HOW BRITISH UNIVERSITIES HELP TO ENHANCE THE QUALITY
OF PROJECT PROPOSALS AND THE SUCCESS RATE
OF COUNTRIES IN FRAMEWORK PROGRAMMES**

**HAVE THE PUBLICATIONS PRODUCED UNDER THE ERC-CZ
PROGRAMME THE SAME BIBLIOMETRIC QUALITY AS THOSE
FROM THE ERC PROJECTS INVOLVING CZECH INSTITUTIONS
IN THE FP7 AND H2020 PROGRAMMES?**

**THE CZECH DAYS FOR EUROPEAN RESEARCH 2023
CONFERENCE PREPARATION**





Information on European Research, Development and Innovation

DEAR READERS,

we find ourselves in the middle of our Presidency of the Council of the EU. It is still too early to evaluate its progress, either in general terms or from the point of view of the research and innovation agenda. However, the perceptive observer will not miss the fact that the first Czech Presidency in 2009 faced a situation very similar to today's. In response to that, journalists and political commentators have come up with the simple headline „Two Presidencies, Two Gas Crises”. It is impossible not to recall the vigorous efforts of the Czech Republic, as the presiding country at that time, to solve the problems of Eastern European energy dependence on Russian gas and to promote alternatives to Russian fuel. We now know that these proposals have not met with success. The current “gas” crisis is worse because it is accompanied by a post-covid situation, and especially by the Russian invasion of Ukraine. It shows how important all research activities addressing renewables, alternative fuels and drives are for EU countries. We would like to devote space to these topics in the forthcoming issues of our magazine.

The activities of the Czech Presidency of the Council of the EU (CZ PRES) in the field of RDI were launched by a major conference dedicated to synergies in the financing of research and innovation in Europe, which took place at the beginning of July in Prague. Needless to say that, consequently, well-thought-out synergy instruments, e.g. in the form of alternative financing for excellent non-FP projects, can provide a significant incentive for increased participation in these programmes. One of these instruments is the ERC-CZ programme, which supports high-perspective and high-quality frontier research projects that have not received funding from European sources. We found it useful to evaluate the quality of this programme in terms of the level of publication outputs of projects funded under this programme.

Just as synergies between FPs, EU/ESIF funds and national programmes for the Czech Republic can be a significant incentive for the participation of Czech research institutes in the international research environment, other factors may directly or indirectly threaten the desired higher participation of the Czech Republic in FPs. Such an example is the uncertain situation regarding the full participation of the United Kingdom in the HE programme, on which the success of Czech teams in this programme also depends to a large extent.

This editorial began with a look back at our Presidency of the Council of the EU in 2009, noting that our current situation as the EU Presidency country is similar. If we look at the past period through the eyes of the European Innovation Scoreboard (EIS), we find that even from the point of view of innovation performance, the current situation of the Czech Republic appears very similar compared to the situation in 2009. In the past period, the Czech Republic has been one of the EU Member States that have long been unable to transform relatively good conditions in the field of research and innovation into greater participation in FPs. Changes or attempts to change this situation have not yet led to an increase in the innovation index of the Czech Republic. However, the first published statistics of the Czech participation in the www.horizontevropa.cz give hope that the situation could still move in a positive direction. So let's try to ask, in a somewhat visionary fashion: “Will we be able, by 2030, to transform ourselves into a confident innovation leader in the light of the campaign The Czech Republic: The Country for the Future and get ahead of the 12 EU countries which are ahead of us today? Or will we read in the EIS as in his current edition, even in eight years from now, that... “Czechia is a Moderate Innovator?” And that, “over time, performance relative to the EU has remained the same? “

May I, on behalf of the ECHO Editorial Board, wish you a pleasant reading!

DANIEL FRANK

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NOTE THE DATE OF THE CZECH DAYS FOR EUROPEAN RESEARCH 2023 CONFERENCE

The 20th year of the traditional conference Czech Days for European Research, (České dny pro evropský výzkum) organized by the Technology Centre of the CAS in cooperation with the Ministry of Education, Youth and Sports, will take place on an unconventional date, which will be February 14, 2023. In particular, the conference will be an opportunity to look back and evaluate the results of the Czech Presidency of the Council of the EU in the second half of 2022 in the field of research and development. The Horizon Europe Framework Programme is already in full swing, the preparation of the Horizon Europe Strategic Plan for 2025–2027 will start soon, but at the same time a thorough impact assessment of the previous Horizon 2020 programme is also taking place. The conference will therefore present its successful efforts and achievements.

On behalf of the organizers of the CZEDER 2023 Conference
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In the subsequent thematic blocks of the conference, we will look back at the more than fifteen-year history of the European Research Council (ERC). The impact that ERC grants have on scientists' careers will be presented by several Czech scientists who have succeeded in the demanding competition. In the panel discussion, the members of the ERC expert group for the support of applicants, together with successful investigators of projects supported by the ERC, will reflect on how the Czech Republic could be even more successful in obtaining these prestigious grants.

The Marie Skłodowska Curie Actions to support the international mobility of researchers have an even longer history in the framework programmes. For more than 25 years, researchers—especially those at the beginning of their scientific careers—have been able to benefit from MSCA grants in order to be trained and develop their scientific careers

at top research institutes in Europe and third countries. The conference participants will be able to get acquainted with specific successful projects, and a discussion is also planned in this block, this time on the topic of the attractiveness of Czech research institutions for attracting foreign scientists. Issues related to the reintegration of Czech scientists returning from abroad to the local workplace will also be discussed.

The CZEDER conference will take place in Prague in the conference centre of the Diplomat Hotel and will also be accompanied by an exhibition of results and outputs of projects of Czech Horizon 2020 project solvers. The exhibition will take place in both physical and virtual form.

Information about the conference, programme and registration will be available well in advance on the horizontevropa.cz portal and on the website of the Technology Centre CAS. The conference will be held in English.

SYNERGIES IN THE EUROPEAN R&I FUNDING

SYNERGIE V EVROPSKÉM FINANCOVÁNÍ VaI

Activities of the Czech Presidency of the Council of the EU (CZ PRES) in the area of Research & Innovation (R&I) have been kicked-off with a major conference dedicated to Synergies in the Research and Innovation funding in Europe that took place on July 7 and 8, 2022. Organized by the Czech Ministry of Education, Youth and Sports (MEYS) jointly with the Czech National Agency for International Education and Research at the premises of Prague Congress Centre, the conference welcomed more than 300 participants who discussed on how to exploit the full potential of synergies to increase the R&I funding in Europe. In addition, more than 1000 viewers followed the event on-line.

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The conference focused on synergies from a broad perspective. Representatives of the European Commission (EC) as well as the Member States (MS) presented their views on how to remove barriers and make synergies between different funding programmes possible. An effective use of the EU, national and regional funds is key to achieve ambitious goals set by the Horizon Europe including the EU Missions and European Partnerships. Outcomes of the conference are summed-up in the Prague Declaration, a document that was presented to the Member States representatives during the Informal EU Competitiveness Council meeting in Prague in July.



Conference Synergies in the R&I Funding in Europe 2022
(Source: <https://synergies2022.eu>)

Opening speeches of the conference were delivered by two Czech Ministers: Mr Vladimír Balaš (Education, Youth and Sports) and Ms Helena Langšádlová (Science, Research and Innovation), both stressing the importance of cooperation of the Member States on the subject of synergies and endorsement of the Prague Declaration. In her address, the EU Commissioner for Innovation, Research, Culture, Education and Youth, Ms Mariya Gabriel appreciated activities of an informal working group formed by representatives of Czech organizations involved in implementing synergies between the EU and national funds (including EU Cohesion policy Funds). She highlighted the ELI Beamlines research infrastructure as a good example of a successful investment using different funding instruments that made possible establishment of a world-class research facility in Central Europe. Moreover, she announced recent publication of a new guidance document on opportunities to maximise the synergies between Horizon Europe and the European Regional Development Fund programmes.

On the first conference day, a number of interesting outcomes emerged from the panel discussions. Several panellists called for a simplification of the structure as well as the rules of existing EU programmes or even creation of a single set of rules for all EU programmes. In addition, efficient communication and cooperation between the national and European authorities was highlighted as crucial. The EC representatives informed that a special activity is foreseen to foster synergies at regional level that should help closing the innovation divide across Europe which is one of the EC priorities for the upcoming programming period. The national representatives suggested that an indication of „synergy-friendly“ topics in Horizon Europe Work Programmes would be of a great help to applicants and the managing authorities. Finally, a need to define the role of private investors in synergies and related processes was highlighted.

On the second conference day, four parallel break-out sessions were dedicated to debate on synergies in the areas of Research Infrastructures, the EU Cohesion policy Funds, Innovation, and European Partnerships and EU Missions. The participants to session on research infrastructures agreed that specific needs of these facilities must be considered when designing different programmes. A complementarity of programmes is crucial to sustain such long-term undertakings which cannot depend on a single source of funding. In its outcomes, the session on the EU Cohesion Policy Funds stressed a need for more flexibility in funding and a more strategic approach that would allow to combine different programmes in a simpler way. The panellists also supported activities of the existing Seal of Excellence Community of Practice and suggested involvement of other relevant players into it. The topic of a harmonization of timing of different EU programme calls was also emphasized. In the Innovation session, practical examples of support provided to innovative SMEs, especially applicants to the European Innovation Council schemes and Seal of Excellence holders were discussed. The panellists agreed that synergies may only work in a cooperative innovation ecosystem built on trust. They also underlined that the national authorities should adopt a more flexible approach in supporting the applicants. Finally, the last panel highlighted the Horizon Europe's Partnerships as an excellent example of co-creation and co-decision principles that are essential for efficient use of funding from various sources. As for the EU Missions, a key role of the TRAMI project that helps to coordinate efforts of the national, regional, and local initiatives as well as to enhance complementarity of funding in order to reach the EU Missions' objectives was acknowledged.

The conference closing was delivered by Ms Radka Wildová, Deputy Minister for Higher Education, Science and Research (MEYS), who summed up the main conference takeaways, thanked all speakers as well as participants for their valuable contributions and reassured the audience of the paramount importance of the synergies for the Czech Presidency.

PRAGUE DECLARATION ON SYNERGIES IN THE RESEARCH AND INNOVATION FUNDING IN EUROPE

The document represents a common effort by the European Commission, the Member States and Associated Countries on promoting the synergies across relevant R&I funding instruments. Based on the main conclusions of the conference, it invites relevant stakeholders to strengthen the dialogue in order to identify and remove barriers that prevent the full potential of synergies from being harvested.

EC should analyse rules of the EU programmes in order to harmonize them and allow increased flexibility in their implementation. Further support to communities and platforms that allow for sharing of knowledge and experiences in using synergies would also be welcomed. The Member States are strongly in favour of a better coordination within the EC services, and between the EC and the national authorities during the programme planning periods. Practical guidance provided by EC including good practice examples is key to a successful application of synergies between different funds.

The Member States and Associated Countries should further explore possibilities of synergic use of the regional, national and European R&I funding. Moreover, they should also increase their efforts to provide the Seal of Excellence holders with funding and support at national or regional levels in order to increase participation in Horizon Europe, in particular when it comes to applicants from the cohesion countries.

Besides, the Prague Declaration calls on all relevant actors to take action in policy-making areas addressed by the conference parallel break-out sessions, i.e. research infrastructures, the European Partnerships and EU Missions, Innovation and the EU Cohesion Policy.

The document shall be endorsed by the Member State representatives per rollam and the outcomes of the endorsement initiative communicated on the occasion of the formal EU Competitiveness Council meeting in December 2022.

ECHO asked representatives of the team responsible for the Conference organization, Ms Táňa Hálová Perglová and Mr Lukáš Levák a couple of questions related to the conference agenda, programme highlights and follow-up activities on the national and international levels.

therefore, comprise particularly policy-making and public funding of research infrastructures (including Czech memberships in international R&D organisations and the ERIC consortia), and formulation and implementation of the strategy for international collaboration of Czechia in R&D in the framework of the European Research Area (including agenda of the EU Competitiveness Council of Research Ministers).

ECHO: WHY DO SYNERGIES OF DIFFERENT EU FUNDING INSTRUMENTS REPRESENT A KEY PRIORITY TO THE CZECH PRESIDENCY IN THE AREA OF RESEARCH AND INNOVATION?

Levák: First of all, with the new EU programming period starting, synergies are a very topical issue. The timing of the conference could not have been better in this regard as EC released the long-awaited guidelines on synergies between Horizon Europe and the European Regional Development Fund programmes only a couple of days before holding the event, at the very beginning of the Czech Presidency. Secondly, an efficient implementation of synergies is critical for achieving goals and objectives of all EU policies. There are dozens of the EU directly managed programmes and even more initiatives implemented at the national, regional, and local levels. As a result, the R&I funding landscape has become very complex, which clearly calls for further advancement of synergies. Despite years of efforts, we still have to align better the framework conditions to raise funds across a broad range of funding instruments in a more synergic and complementary way. The Czech Presidency set out the ambition to reach a consensus on the Prague Declaration, which is meant as a call for action in the area of synergies. On the top of that, there will also be the Council Conclusions on synergies following the special report by the European Court of Auditors evaluating synergies in the past EU programming period. Against this background, synergies simply had to become one of the top priorities of the Czech Presidency.

ECHO: IN THE CONFERENCE KEYNOTES, HIGH-LEVEL REPRESENTATIVES OF THE CZECH GOVERNMENT HIGHLIGHTED THE IMPORTANCE OF SYNERGIES TO SUPPORT RESEARCH AND INNOVATION. WHAT ACTION WILL BE TAKEN AT THE NATIONAL LEVEL TO FACILITATE SYNERGIES OF DIFFERENT EU FUNDS AND TO IMPROVE THE ACCESS TO FUNDING TO THE CZECH R&I COMMUNITY?

Levák: In a number of R&I funding areas, implementation of synergies is still a pending challenge that has to be faced and resolved. On one hand, we can already build on a large variety of good practice examples from the past. We have been applying synergies when covering the operational and investment costs of research infrastructures. We have been using the Seal of Excellence funding approach to finance the projects of the European Research Council, Marie Skłodowska-Curie Actions and SME Instrument. We have also been participating in various European R&I co-fund programmes and used synergies when co-financing projects of Teaming. Nevertheless, there is so much space for improvement. The ambition is to align better the national programme-based funding with the pan-European initiatives, particularly when it comes to the thematic areas addressed by the European Partnerships and EU Missions. The involvement of the Czech Republic in these schemes is still rather moderate or modest, and the level of engagement has to be increased.

ECHO: THE REPRESENTATIVES OF DIFFERENT EU BODIES EXPRESSED THEIR CLEAR COMMITMENT TO THE IDEA OF A MORE FLEXIBLE AND EFFICIENT UTILIZATION OF THE EU FUNDS. WHAT FURTHER STEPS ARE ENVISAGED TO BE TAKEN BY THE CZECH AND THE SUBSEQUENT EU PRESIDENCIES IN ORDER TO KEEP THE MOMENTUM AND IMPLEMENT THE ACTIONS SUGGESTED IN THE PRAGUE DECLARATION?

Levák: Although being a legally non-binding document, the Prague Declaration should bring a new impetus to enhance synergies. Stakeholders from all around Europe, who participated in drafting the paper, have been mobilised to take action. Now, it is their responsibility to take the initiative and introduce reforms facilitating better synergies. It goes without saying it is going to be a long-time run with

Lukáš Levák (Director of Department for R&D, MEYS)

Since 2014, Lukáš Levák has been the Director of Department for R&D at the Ministry of Education, Youth and Sports of the Czech Republic, which consists of the Unit for Research Infrastructures and the Unit for European Research Area. His duties and responsibilities,

many obstacles across the way. Anyway, it is our strong belief that the Prague Declaration has been a sort of wake-up call for those, who have not paid particular attention to synergies yet or have not even noticed they are so important. Synergies have to become embedded in each and every policy-maker's mindset as an integral part of the default setting, when designing, creating and implementing a R&I programme incentivising science and technology advancement, or addressing a societal, environment or economic challenge.

Táňa Hálová Perglová

(Permanent Representation of the Czech Republic to the EU)

Táňa Hálová Perglová is involved in the team of the Czech Presidency in the Council of the EU at the Permanent Representation of the Czech Republic in Brussels. She has gained professional experience in research and innovation policy in different positions in CzechInvest, CZELO (Czech Liaison Office for Research and Development in Brussels), and the Ministry of Education, Youth and Sports of the Czech Republic. Before joining the Czech EU Council Presidency team, she worked as Director of Horizontal and International Section in the Technology Agency of the Czech Republic.

ECHO: HOW DID YOU DETERMINE THE STRUCTURE AND THE PRIORITIES OF THE CONFERENCE PROGRAMME? WHO PARTICIPATED IN THE PROCESS?

Hálová Perglová: When EC started to put emphasis on synergies in 2014, it raised lot of interest in the Czech Republic, especially from the research funding organisations. We were keen to exploit them. We have also been active in the Seal of Excellence Community and thus aware of topics which were broadly discussed on the top of the Seal of Excellence tool. The team, which was responsible for designing the conference programme within the Ministry of Education, Youth and Sports, agreed immediately on the four main topics – research infrastructures, EU Cohesion Policy Funds, innovation, and European Partnerships. Then, we consulted the European Commission who wanted

to give more visibility to the EU Missions as the achievement of their goals is only possible if European, national and regional levels work closely together.

ECHO: WHAT WAS THE GREATEST CHALLENGE YOU AND YOUR TEAM HAD TO DEAL WITH DURING THE CONFERENCE PREPARATION? ARE YOU SATISFIED WITH THE OVERALL RESULT AND THE OUTCOMES?

Hálová Perglová: The greatest challenge were limited human resources. All persons, who were in the preparation team, had their own work agenda and the preparation of the conference was on the top of it. But all the team was just fantastic, passionate about the conference and its preparation. It was definitely a wonderful experience for all of us to prepare such an international event. I am personally satisfied with the outcomes and the results. The discussions were very fruitful, and we could see how important the topic of synergies is. Especially now, when the economic crisis is foreseen and we must use financial resources as efficiently as we can, avoid overlapping and work together. I strongly believe that the Prague Declaration contributes to a better dialogue and focus on the right mix of steps to be undertaken in the future.

ECHO: FROM YOUR POINT OF VIEW AS A RAPPOREUR OF THE PARALLEL BREAK-OUT SESSION ON SYNERGIES IN THE AREA OF INNOVATION, WHAT WAS THE MOST INTERESTING OR IMPORTANT MESSAGE COMING FROM THE SESSION?

Hálová Perglová: I very much appreciated the composition of the panel, which showed how complex the issue is and how important it is to work together, to network and to learn from each other. I learnt so many new things! We need exactly this sort of approach. We need dedicated groups on specific issues where people could meet and learn from each other and discuss very specific and detailed issues of synergies. The devil is in detail, and we must not allow a small detail to spoil setting of synergies, which could benefit hundreds and thousands of beneficiaries. We also need passionate people, good will and proactive attitude on all sides and at all levels. I could see in our panel that there is sufficient willingness on the side of EC, and also among stakeholders and research funding organisations which is crucial for a successful setting of synergies.

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MILNÍKY BUDOVÁNÍ VÝZKUMNÝCH INFRASTRUKTUR SE ZAMĚŘENÍM NA ORGANIZACE ERIC

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Abstract: Research infrastructures policy, legal frame, as well as their implementation, evolved dramatically during the second half of the 20th and the beginning of 21st centuries. The article covers the milestones of this process, from the setting up of international organisations, ESFRI, ERIC regulation, ERIC Forum to the current ERA developments. Moreover, it considers the possible development directions that are taking shape ahead of managers and policy makers of these important ERA players in the coming period.

Abstrakt: Ve druhé polovině 20. a na počátku 21. století se politický a právní rámec i implementace výzkumných infrastruktur dramaticky vyvíjely. Článek se zabývá milníky tohoto procesu od založení mezinárodních organizací, ESFRI, nařízení o ERIC, ERIC Fóra až po aktuální vývoj ERA. Dále uvažuje o možných směrech vývoje, které se rysují v nadcházejícím období před manažery a tvůrci politik těchto důležitých hráčů ERA.



During the last two centuries, the first outburst of research infrastructure (RIs) construction in Europe happened after the second world war, when striving

for peaceful cooperation initiated the construction of CERN (1954) and DUBNA (1956), followed by RIs gathered under EIROforum (ESO, ESA, EM-BL) today. The legal basis for these intergovernmental organizations operating research infrastructures was public international law, international agreements. The benefits of this approach were tax exemptions, procurement rules based on internal regulations, diplomatic immunity, and financial stability based on member governments' contributions. In addition to this, own in 6 house research, "georeturn" in most of them, and mobility of personnel within the same organisation was made possible. A drawback of this way of setting up research infrastructures was the lengthy procedure during which all national parliaments of the candidate countries had to agree on their membership. During the late 1960's up to the 1980's in order to simplify this process, some RIs were set up under national law like the Institut Laue-Langevin – ILL (1967) or the European Synchrotron Radiation Facility – ESRF (1988). Unfortunately, some countries were not able to enter into these subjects established under a different national law.

projects, which were implemented using the variable geometry principle, allowing for countries to prioritize their investments in ESFRI projects in line with their national goals. Since then, the ESFRI Roadmap has been updated every two years, and its structure changes according to the needs of the systematic approach. Beginning 2006 a discussion was going on within ESFRI, and with the Commission, as European Member States required to establish a new European legal frame for RIs combining the benefits of an international organisation with the possibility of a lighter and shorter procedure for its set up. In June 2009, the European Union has approved this new legal frame under the Council Regulation (EC) No 723/2009 of 25 June 2009 on the Community legal framework for a European Research Infrastructure Consortium (ERIC) (ERIC regulation) [2]. The "regulation" legal form was chosen for being directly applicable to national legal systems in all EU Member States, without any additional parliamentary approval needed.



RIs, some of which became later ERICs, were mostly in preparatory phase. After 2009, the implementation of RIs was done by the combination of resources from European framework pro-

grammes (design phase and/or preparatory phase), national support or structural funds (construction phase) mostly in the form of projects. RIs were thought of as national projects, ESFRI projects, structural funds projects. The possibility to use structural funds for the construction of research infrastructures meant for the New Member States of the European Union (joining in 2004 – Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovakia and Slovenia; in 2007 – Bulgaria and Romania, in 2013 – Croatia) a breakthrough for investments in RIs construction. For example, between 2009–2013 the number of research infrastructures in the Czech Republic grew from 8 to 35. In the following years, this trend continued, and currently the latest version of the Czech national Roadmap of Large Research Infrastructures of the Czech Republic [3] includes 48 large research infrastructure projects. The use of structural funds for the construction of RIs occurred in the



In 2002 came a milestone, as the European Strategy Forum for Research Infrastructures (ESFRI) was established. ESFRI activities initiated the second outburst of RIs construction in Europe. The strategy-led approach towards planning and setting up RIs by the European Member States and scientists for the European community was crowned by issuing the first "ESFRI Roadmap" in 2006 [1]. This document contained 35

context of the Multi-level governance concept (MLG) [4], where states, regions, institutions and therefore RIs, ERICs are considered as stakeholders of the European research area (ERA).

With the establishment of the ERICs, and the progressing construction, RIs were changing from “projects” into “legal subjects”, organisations. Between 2009 and 2022 there were 24 ERICs established and more of them are in the pipeline [5]. ERICs’ change from projects to organisations has had implications both on the level of ERA governance, and the level of RI management. In 2017, the ERIC Forum was established in order to strengthen coordination among ERICs, discuss common management challenges, cooperate with the Commission and strengthen ERICs’ participation as a stakeholder in policy actions. The Commission supported this endeavour by awarding the ERIC Forum Implementation project [6].

In 2020, the concept of the ERA was revisited [7], and the new ERA governance was established in 2021. Within this governance system, the place at the table for research infrastructures is shared among ESFRI, ERIC Forum and EIROforum.

As research infrastructures and ERICs matured from projects to subjects, funders expect them to transform inputs not only into outputs and outcomes but to generate socio-economic impact. Today, emphasis is given to the contribution of RIs and ERICs to the solving of European challenges, and UN Sustainable development goals.

These developments had influence on the requirements for ERICs and research infrastructures management. From this point of view, two topics are emerging as most important:

- evaluation of performance, and socio-economic impact assessment,
- using the whole potential of the research infrastructures ecosystem
 - regional partner facilities and smaller laboratories networks
 - globalization and international cooperation
 - relation to technology infrastructures

EVALUATION OF PERFORMANCE AND SOCIO-ECONOMIC IMPACT ASSESSMENT

Public project funders, providers, have the obligation to ensure the project support, input, has adequate outputs and outcomes. What is the result of a project? Are resources used effectively? Answers to these questions were to be considered by proposers when pledging to fulfill indicators for ex-ante project evaluation and consequently monitoring of fulfillment of RIs projects objectives. With the change towards funding through member country contributions, the idea of using Key Performance Indicators (KPIs) for monitoring of RI performance was introduced by ESFRI [8]. A KPI is a tool to monitor progress towards an organisational objective, quantified by a goal. A precondition to this is for a research infrastructure, an ERIC, to have organisational objectives and related measurable goals adopted by its top governance body (e.g. general assembly). Another precondition is to have at hand a database of organisational data. Therefore, a RI, an ERIC performance including KPIs monitoring is influenced by its governance and management efficiency.

Public funders are increasingly interested in RIs and ERICs’ socio-economic impact, striving to understand how public investments in RIs and ERICs influences the life of society. This exercise is different from performance monitoring, as it depends on many actors not only the ERIC, or RIs’ governance and management. Moreover, socio-economic impact assessment requires a methodology of a special type. Fortunately, we do not have to build on greenfield here, there have been methodologies developed within Horizon 2020 projects, like ACCELERATE and RI-PATHS [9, 10]. In the coming years, it will be important for ERICs to set up a methodology of performance evaluation (KPIs) which will interplay with the one to be set up for their socio-economic impact assessment. In this respect, following the report of the EGERIC group [11], the Commission is considering to support the formation of an ERIC Observatory under the Horizon Europe programme in order to strengthen the ERICs monitoring.

USING THE WHOLE POTENTIAL OF THE RESEARCH INFRASTRUCTURES ECOSYSTEM

The occurrence of RIs as single-sited or distributed is common knowledge. Before a RI is formed, a network of labs is many times established as a first step. Sometimes such a network evolves into a distributed RI. Another time such a network launches the request for construction of a single-sited RI to perform experiments of a different level.

The role of national labs networks in making use of the whole potential of the RIs ecosystem is irreplaceable. An illustration of this can be the interplay between Extreme Light Infrastructure ERIC (ELI ERIC) and Laserlab-Europe. Moreover, such cooperation can have a global dimension, e.g. for ELI ERIC to interact with LaserNetUS [13] and/or the network of laser research laboratories in Africa, the African Laser Centre [14]. A very good example for global cooperation of an ERIC is the approach of JIVE ERIC. Where forming alliances with existing networks, keeping the local branding, and sharing knowledge and data on a global scale resulted in the Global VLBI (Very-long-baseline interferometry) Alliance [15].

In order to make use of the whole system for the single-sited RIs, the concept of a Regional Partner Facility was defined by ESFRI between 2011-2013, where: A “Regional Partner Facility” (RPF) to a Research Infrastructure of pan-European interest must itself be a facility of national or regional importance in terms of socioeconomic returns, training and attracting researchers and technicians. The quality of the facility including the level of its scientific service, management and open access policy must meet the same standards required for pan-European Research Infrastructures. The recognition as an RPF should be under the responsibility of the pan-European Research Infrastructure itself (or the members of a to-be ERIC) based on a regular peer review [12].” It was acknowledged, that this concept can be implemented only after the construction of the central part of the RI is finished, and such a concept could be applied both to a single sited or distributed RI. Today, the concept of RPF to ERICs should probably be revisited as the RIs are mostly past their construction phase. To use the whole potential of the RI ecosystem on the European and global scale both approaches – RPFs and networks alliances could be combined by ERICs or RIs in general.

RIs have been created as, and exist in the center of the triangle formed by Universities, research organisations and industry. Europe needs an even more efficient uptake of basic and applied research results by industry. RIs have been active in this process, and aware of technology infrastructures (TIs) growing importance in this process during the last years. A holistic integrated ecosystem of RIs and TIs, Universities, industry and research organisations to cover the process from knowledge generation to industry uptake is definitely needed in the foreseeable future. The definition of a TI according to the Commission is: “Technology infrastructures are facilities, equipment, capabilities and support services where industrial players can find support to commercialize new products, processes and services, in full compliance with EU regulations [16].” Evidently, the line between RIs and TIs is not sharp. Some RIs are close to TIs, acting as a RI one in one situation, and a TI in a different situation. Many of them serve SMEs and industry needs up to 20% of their capacity. Plans are for the drafting of a TIs roadmap, supported from RIs priority of the Horizon Europe programme having ESFRI as a source of inspiration. Evidently, the interplay and cooperation between RIs and TIs within the education, research, and innovation ecosystem have yet to be discussed and defined in the coming years.

The ERA and the research, and innovation system are evolving, which places us on the road, and requires us to be flexible and ready for changes. Research infrastructures as a backbone of this system are important stakeholders and their usefulness will grow and show itself even more with time.

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QUALITY PROJECT MANAGEMENT IS KEY TO A SUCCESSFUL PROJECT: PROFESSION OF RESEARCH MANAGERS AND ADMINISTRATORS ALREADY RECOGNIZED IN THE CZECH REPUBLIC

KVALITNÍ PROJEKTOVÉ ŘÍZENÍ JE KLÍČEM K ÚSPĚŠNÉMU PROJEKTU: PROFESE VÝZKUMNÝCH MANAŽERŮ A ADMINISTRÁTORŮ JIŽ UZNÁVANÁ V ČESKÉ REPUBLICE

Excellent science needs excellent project administration support. Top researchers should not be overloaded by the administration and paperwork related to project proposal preparation and implementation. They should have highly skilled project research managers and administrators (RMAs) at their disposal. It is very challenging

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to succeed at the European level and gain prestigious research grants. Grant providers and evaluators expect beneficiaries to provide excellent research outputs and effective project support. In the Czech Republic, we are not lagging behind in this respect. The working group of financial and legal RMAs for EU framework programmes has been working for 15 years and the Czech Association of RMAs (CZARMA) focusing on research in a broader sense was established this year.



30th meeting of the Working group of financial and legal RMAs for EU framework programmes – 23 June 2022, Czech technical university in Prague (source: Lenka Chvojková)

WORKING GROUP OF CZECH FINANCIAL AND LEGAL RMAs FOR EU FRAMEWORK PROGRAMMES

The Working group of financial and legal RMAs for EU framework programmes is organized by the Technology Centre of the CAS. It focuses on the exchange of knowledge and experience relating to the financial, legal and administrative issues of the EU Framework Programmes (FP7, H2020 and Horizon Europe). Its members meet twice a year. The National Contact Points for Legal and Financial Issues (LaF NCPs) inform about novelties in framework programmes and all the members exchange best practices and practical experience. We are proud to have celebrated the 30th meeting of the group this year. Since 2007, the informal cooperation of roughly 10 people has gradually become a working platform with around 100 members from more than 40 Czech universities and institutes of the Czech Academy of Sciences¹. Lucie Macháčová from the University of Pardubice, a member of the group already since 2007, says “Starting a working group was a great idea! I appreciate very much that I could be at its beginning and that it has been running for such a long time, constantly developing and expanding the number of participants, which is a proof of its usefulness. The platform enables us, through the Legal and Financial NCPs, to obtain the necessary information from the EU on the implementation of projects and to share our experience with other research managers and administrators and discuss current issues. Thanks to this platform, we have the opportunity to provide our researchers with the necessary support in the field of project administration, making it easier for them to concentrate on their science. Its existence contributes to ensuring high-quality project preparation and implementation.”

CZECH ASSOCIATION OF RMAs

RMAs cooperation and the cultivation of the RMA profession are broader than just the financial, legal and administrative issues in EU Framework Programmes. Therefore, **CZARMA was established in 2022** [1]. The association aim is to create a platform for sharing experience, know-how and best practice in science and research in general. It will organize educational events for the professional development

of RMAs, it intends to contribute to building the profession’s reputation and to cooperate with research organizations, public authorities, and similar associations in the Czech Republic and abroad. It will strive to develop and cultivate the Czech and European Research Area, aiming to be a partner of relevant public authorities and grant providers and to participate in the creation of new legislative and administrative documents.



The first membership meeting of CZARMA – 7 September 2022 (source: Institute of Physics of the Czech Academy of Sciences)

“I have to admit that the interest in the association exceeded all our expectations. We already have more than 250 members,” informs Ida Součková Olšová, chair of CZARMA and head of the Grant office at Rectorate of the Masaryk University². Through its working groups, CZARMA members can address many diverse agendas such as professional development, pre- and post-award support, financial and legal issues, mobility, research policy, ethics, HR and gender, research evaluation, open science, science communication, research infrastructures or synergies. It is a comprehensive platform bringing its members a broader perspective. “One of our main goals is to strengthen the awareness and reputation of project management as a profession – internationally. Cutting-edge research needs to be underpinned by high-quality and professional project support, which is a prerequi-

site for navigating grant opportunities and successfully submitting project applications. CZARMA also wants to cooperate with the umbrella association EARMA (European Association of RMAs) as well as with similar professional associations in other countries, such as the Danish association DARMA, Swedish SWARMA, Dutch NL-ARMA, British ARMA and others. I hope that CZARMA will succeed in building such a strong and cooperative association as the foreign ones,” adds Ida Součková Olšová.



Participants joining the first membership meeting of CZARMA (source: Institute of Physics of the Czech Academy of Sciences)

The first member meeting of CZARMA was held with the support of the Technology Centre and the Institute of Physics of the CAS in Prague on 7 September 2022. “At the first meeting we approved the statutes, elected representatives, and introduced the working groups of the association. We are very pleased that the existence of CZARMA is positively perceived and supported by researchers, leaders of research institutions and representatives of the Czech government.” says Tomáš Mozga, vice-chair of CZARMA and project manager at the Biology Centre of the CAS.



Members of CZARMA elect the Statutes (source: Institute of Physics of the Czech Academy of Sciences)

WORK OF RMAs AND BEST PRACTICES

Project management and administration are demanding. These tasks require an orientation in complex legal and financial issues, including thorough knowledge of organization’s internal environment and the rules of individual programmes and grant providers. It also requires

good communication skills, the ability to work in a team and a good knowledge of the English language, especially in the case of Horizon Europe projects.

We believe that the activities supporting RMAs mentioned above can help to have more experienced project managers in the Czech Republic who will become experts in their field and thus contribute to the smooth progress of proposal preparation, projects implementation and audit.

“As in any other field, communication, openness, and mutual trust are key - I can only confirm that long-term cooperation between the researcher and the project support built on these foundations is the way to mutual satisfaction - for the researcher to be able to realize their dream research and for the project support to feel that their work is well done”, describes Ida Součková Olšová her view.

How do researchers themselves view RMAs? Biologist Vojtěch Novotný from the CAS Biology Centre shares his experience with RMA: “The project manager is the group leader’s right-hand man/woman. The selection of the project manager is equally important as the selection of the scientific part of the team. It is sad to see scientists running around offices with invoices in their hands, usually they do it wrong and even if they manage to do it well, it is better to dedicate their time to something else, like science for instance. The project managers belong to a rare type of creative administrators – they find new possibilities of financing and new ways to carry out often complex and internationally fragmented supply and logistics tasks in accordance with regulations, which had not envisaged anything like this. Generally, the project manager monitors budgets, supply and personnel of the research team, and based on such experience, helps to draw up proposals for new projects. There were times when I did not have any project manager on hand, but this was a long time ago. It is hard to remember how scientists could survive in those ancient times.” [2]

CONCLUSION

The existing and emerging support for project managers in the Czech Republic gives hope that there might be more experienced managers in the future in the Czech Republic. Furthermore, the activities mentioned will hopefully lead to an increased attractiveness and prestige of the RMA profession, better knowledge exchange and smoother cooperation of project managers, researchers, public authorities and grant providers. In the end, they may increase the participation of Czech organizations in Horizon Europe projects. Perhaps even increase the number of Czech coordinators.

The Technology Centre and Working Group of financial and legal RMAs for EU framework programmes are looking forward to the cooperation within CZARMA!

NOTES

¹To become a member do not hesitate to contact the Technology Centre at finance-pravo@tc.cz.

²Those interested in membership can find out more information here – <https://www.czarma.cz/pripojte-se>.

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DOES THE MISSION FOCUSED ON THE RESTORATION OF OCEANS AND WATERS ALSO OFFER OPPORTUNITIES FOR CZECH PARTICIPANTS?

NABÍZÍ MISE ZAMĚŘENÁ NA OBNOVU OCEÁNŮ A VOD PŘÍLEŽITOSTI I PRO ČESKÉ ÚČASTNÍKY?

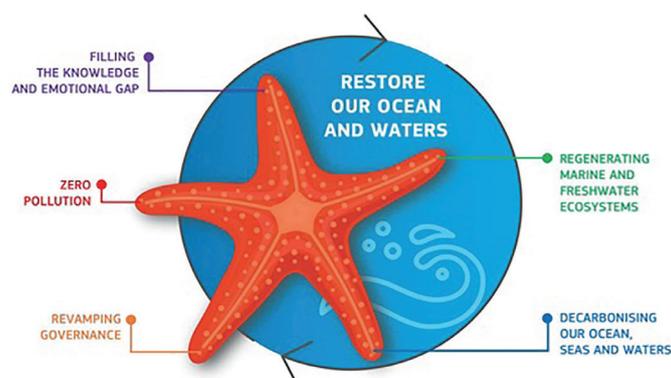
The answer to the title question is, of course, in the affirmative, otherwise there would be no point in writing this article. But it is true that at the time when missions as a new element of Horizon Europe were being considered, the thematic focus of the ‚water-centred‘ mission was not very broad. Mariana Mazzucato, who described the concept of the missions in detail, cited as one example a mission focused only on plastic free ocean [1]. Landlocked countries such as the Czech Republic understandably demanded and welcomed the extension of the mission to the final focus, which became „Restore our Ocean and Waters by 2030“ [2].

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Projects can therefore also be devoted to some freshwater issues which are the most relevant for Czech applicants, and this is what we shall focus on in more detail. The analysis of the current state of European waters led to the definition of the specific objectives of the mission, which are as follows:

1. Protect and restore marine and freshwater ecosystems and biodiversity,
2. Prevent and eliminate pollution of our ocean, seas and waters,
3. Make the sustainable blue economy carbon-neutral and circular.

The mission implementation plan [3], published in September 2021, complements these three objectives on the three arms of the starfish (which is a symbol of the mission) with two more arms that specify the conditions allowing the mission to be fulfilled. These include on the one hand, supporting the filling of gaps in existing knowledge, monitoring and forecasting the state of the hydrosphere, and on the other hand, supporting participatory governance based on citizen involvement.



(image: Mission Starfish 2030 © European Union, 2020)

The specific activities of the mission should focus on the so-called lighthouses – four lighthouse areas to demonstrate solutions in all EU seas, which are the Atlantic and Arctic coasts, the Baltic and the

North Sea basin, the Mediterranean Sea, as well as in the Danube river basin. The last-mentioned area will be dealt with in particular in this text. We can start with a topic that has already been closed for the submission of projects, but nevertheless offers an interesting possibility of support for the future. In April 2022, the topic supporting the restoration of freshwater ecosystems in the Danube river basin had a deadline. In the two projects that will be selected for funding, the possibility of financial support to third parties in the form of a grant will be open. Third parties in this case are the so-called associated regions that will become involved in the mission. Associated regions are defined as areas with ecosystems that can benefit from the demonstration activities, whether in a neighbouring region or regions in different sea basin, and at the same time, in a country other than the members of the project consortium. The projects are expected to work together with at least 5 associated regions, each of which can be supported up to a maximum of €100,000. Support will be directed to technical assistance in the preparation of plans or projects for the restoration of aquatic ecosystems.

If we proceed to the call open for projects with a deadline of 27. 09. 2022, a similar scheme of support to third parties is repeated, for example, in the topic aimed at restoring and protecting wetlands, flood plains, coastal wetlands and salt marshes and their biodiversity again in the Danube river basin. In the Mediterranean region, activities focus on preventing, minimising, and remedying chemical pollution. Another topic of interest to Czech researchers is focused on the prevention and elimination of pollution, this time concerning litter, plastics and microplastics in European rivers. The project selected for funding will test at least 5 innovative solutions, with at least two cases involving the elimination of microplastics from rivers. The measures to be put in place should address both the prevention of litter, plastics and microplastics pollution and solutions for their removal from rivers, as well as alternative less polluting substances and materials. With regard to seas and oceans, projects should address the negative impacts of fishing gears on marine life and habitats, promote sustainable algae production or support the integration of biodiversity data into the digital twin ocean (a virtual representation of the ocean that combines ocean observation, artificial intelligence and advanced modelling on high-performance computers). In addition to these innovation activities, the EC also supports coordination and support actions aimed, for example, at creating a European e-DNA library of marine and freshwater species.

As regards the outlook for the calls planned with deadlines probably in September 2023, in the area of freshwater ecosystems, the topic of sustainable sediment management in the Danube and Black Sea system is emerging. I also find the topic aimed at protecting and restoring ecosystems and biodiversity of European natural lakes interesting for Czech institutions. Projects should address, in an integrated manner, all major pressures on the lake ecosystem (water level control, agriculture, aquaculture, navigation, pollution, impacts of climate change, pressure on biodiversity, including invasive species, etc.). In particular, nature-based solutions are expected to be used. Both topics again count on the possibility of financial support to third parties. Efforts will continue to prevent the degradation of marine ecosystems, including coastlines and the seabed, and to enhance their protection, as well as to reduce threats to marine biodiversity. Activities will also focus on energy-efficient small-scale fishing fleets. Also in the outlook is a highly topical subject common to the three missions (oceans, soil and climate) aimed at increasing landscape water retention capacity at regional scale.

We would like to point out that the themes are not repeated or duplicated in Horizon Europe. It is therefore important to monitor 'water' opportunities both in the work programme of Cluster 6 (which is dedicated to Food, bioeconomy, natural resources, agriculture and the environment), in the work programme of the EU Mission for Ocean and Waters or, in the future, in the co-funded Water4All partnership.

The work programme as an essential mission document for potential project proposers, containing a detailed description of open topics, is published on the Funding and tender opportunities portal [4]. On the website administered by the TC CAS [4] there is also always up-to-date information on open calls and events related to the area of the mission focused on water [5].

On 30 June 2022, the European Commission announced the Mission Charter [6] and invited interested parties to join it by submitting actions that will contribute to the restoration of oceans and waters. Any

actions at European, national or regional level supported by public or private funds are welcome. Signatories will have access to the services of the Mission Implementation Platform and will have the opportunity to exchange experiences or collaborate.

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DO NO SIGNIFICANT HARM PRINCIPLE IN HORIZON EUROPE

PRINCIP „VÝZNAMNĚ NEŠKODIT“ V HORIZONTU EVROPA

Environmentally sustainable future is an important goal of the EU and recently received a lot of publicity in relation to the European Green Deal [1]. Research and innovation are at the beginning of industrial and other activities which can have a great positive or negative impact on the environment. That is why many Horizon Europe work programmes are directly or indirectly focused on sustainability. Nevertheless, the Green Deal environmental objectives now affect almost all work programmes by application of the “do no significant harm” (DNSH) principle to Horizon Europe. References on the DNSH principle are included in the General Introduction of Horizon Europe and work programmes of Pillar II and in Cluster 4 (Digital, Industry and Space), Cluster 5 (Climate, Energy and Mobility), and Cluster 6 (Food, Bioeconomy, Natural Resources, Agriculture and Environment) and in the EIC Work Programme [2].

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WHAT DOES DNHS MEAN?

The DNSH principle requires the applicants to demonstrate that their project, if funded, will not result in a significant harm to any of the following environmental objectives:

- climate change mitigation;
- climate change adaptation;
- the sustainable use and protection of water and marine resources;
- the transition to a circular economy;
- pollution prevention and control;
- the protection and restoration of biodiversity and ecosystems. [3]

These are set out in Article 9 of the Taxonomy regulation, where the DNSH was originally introduced as part of new rules for labelling financial investments as sustainable [4]. Article 17 further defines what constitutes a significant harm for each of those objectives. For example, the objective of climate change mitigation is significantly harmed if the activity at hand leads to significant greenhouse gas emissions, and for the transition to a circular economy objective a significant harm is caused if the activity leads to a significant increase in the generation of waste. We therefore have the basic guidelines to assess activities under the DNSH principle. Further detailed criteria will be included in regulatory technical standards that will be jointly developed by European Supervisory Authorities [5].

WHICH ACTIVITIES DOES IT APPLY TO?

DNSH applies very broadly to all activities that are part of the project but also to all further use of project results including all industrial application after the project ends and, where relevant, also the use of the resulting product or service by consumers or other final users. The whole life-cycle of all activities, products and services should be considered including the durability and reparability aspects [6].

DNHS IN PROJECT APPLICATION

Addressing the DNSH is not compulsory. However, it should be addressed in part B section 1.2 on methodology. Where relevant, the applicant should explain how the methodology is designed in a way not significantly harming any of the six environmental objectives of the EU Taxonomy Regulation. Also related to this principle is the part B section 2.1 on Impact. Here the applicant should mention any potential negative environmental outcome or impact of the project including when expected results are brought at scale (such as at commercial level). Where relevant, ways to manage potential harm should also be described [7].

ROLE OF DNHS IN EVALUATION

As mentioned above, addressing the DNSH principle is generally not obligatory. As explicitly mentioned in the Horizon Europe Programme Guide, the evaluators will not score applications in relation to their compliance with the DNSH principle [8].

However, specific work programmes can treat the DNSH differently. At the moment, only the European Innovation Council (EIC) Work Programme sets compliance with the DNSH principle as an eligibility criteria for all project falling without its scope[9]. Therefore, no project causing significant harm is eligible for financing under the EIC programme.

CONCLUSION

Although it is mostly non-compulsory and not part of the evaluation criteria, the DNSH principle is a significant step towards broad environmental requirements for all projects funded under Horizon Europe. It would not be surprising if most or all future programmes would adopt a strict application of this principle as an eligibility criterion.

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ERA OR HERA? HORIZON EUROPE WITHOUT THE FULL PARTICIPATION OF THE UK? OR HOW BRITISH UNIVERSITIES HELP TO ENHANCE THE QUALITY OF PROJECT PROPOSALS AND THE SUCCESS RATE OF COUNTRIES IN FPS

ERA NEBO HERA? PROGRAM HORIZONT EVROPA BEZ PLNOHODNOTNÉ ÚČASTI UK? ANEB JAK BRITSKÉ UNIVERZITY POMÁHAJÍ ZVYŠOVAT KVALITU PROJEKTOVÝCH NÁVRHŮ A ÚSPĚŠNOST ZEMÍ V RÁMCOVÝCH PROGRAMECH

Abstract: The paper consists of two parts. The first part of the article concerns a brief description of the current situation regarding the Association of the United Kingdom of Great Britain and Northern Ireland on the Horizon Europe programme. In the second part of the article, it analyzes how British universities help to improve the quality of submitted project proposals and how the cooperation of EU countries with the TOP 15 British universities affects their success rate in the FPS.

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Abstrakt: Příspěvek skládá ze dvou částí. První část článku se týká stručného popisu současné situace ohledně asociace Spojeného království Velké Británie a Severního Irsku k programu Horizont Evropa. Ve druhé části článku analyzuje, jak britské univerzity pomáhají zvyšovat kvalitu předkládaných projektových návrhů a jak spolupráce zemí EU s TOP 15 britskými univerzitami ovlivňuje jejich úspěšnost v rámcových programech.

INTRODUCTION

Ensuring the participation of the United Kingdom of Great Britain and Northern Ireland (hereinafter, the „UK“) in the Framework Programmes („FP“ or „FPS“) has been the subject of attention since the country voted to leave the EU in 2016 (so-called Brexit). After the British referendum on 23.06.2016, which legitimized the UK's withdrawal from the EU, we warned in our journal ECHO [1], in connection with Brexit and the possible restriction of the participation of British institutions in FP Horizon 2020, against the idea that the universities of Oxford, Cambridge and London (Imperial College of Science, Technology and Medicine) and other British scientific institutions would no longer be part of the ERA (European Research Area), whose existence is significantly supported precisely by the FPS. This idea seemed absurd at the time, especially in connection with the hitherto large and fundamental participation of British institutions in FPS. Our colleague Vladimír Albrecht said at the time that if the participation of research teams from the UK were to be restricted, it would be HERA (Handicapped European Research Area) rather than ERA (European Research

Area) [1]. Fortunately, the situation turned out well at that time and the UK was able to continue to participate in the H2020 programme without major restrictions even after Brexit.

Unfortunately, at the time of writing this article (early July 2022), it is still unclear what the participation of this key European country in the ongoing Horizon Europe programme will look like. In 2021, as part of the Brexit deal, the EU and the UK concluded an agreement on the continuation of cooperation under Horizon Europe – the Trade and Cooperation Agreement between the EU and the UK (hereinafter, the „Agreement“). However, its ratification was halted by political problems relating to the „Northern Ireland Protocol“¹, due to which the European Commission (EC) ultimately refused to ratify the Agreement [2].

At least since autumn 2021, there have been concerns that the British government will give up hope of associating its country with Horizon Europe due to delays on the part of the EC. Of course, even without an Association Agreement, the UK, like any other country in the world, can defray the costs of its participation in Horizon Europe (participation in project consortia, industrial and research partnerships) from its own resources [3]. In this case, the UK would have

the status of a third country and the UK institutions would not have the possibility to coordinate HE programme projects or be host institutions for dealing with ERC grants. A guarantee scheme has been adopted in the UK to cover the costs of UK participants who have received Horizon Europe grants, which are expected to be signed by the end of December 2022. The question remains, however, whether this system of alternative financing would work in practice (author's note: the UK NCP and the delegates of the Horizon Europe Programme Committee are assured during the negotiations that it will) and whether this national financial guarantee would also be extended for the following period [2, 3, 4].

ALTERNATIVE TO HORIZON EUROPE IN THE UK – “PLAN B”

The British government has stated that, if an association agreement with the EU is not reached, it will create its own £15 billion (US\$18.7 billion) research programme, which will compete to some extent with Horizon Europe. This alternative to Horizon Europe in the UK has been named 'Plan B'. However, the details of its operation and implementation are not yet entirely clear*. Plan B is supposed to have a greater share of funds available for small and medium-sized enterprises and the implementation of innovative solutions, with the fact that there will be a diversion of research cooperation from the EU. Plan B is seen as an opportunity to strengthen UK research collaboration with India, China and the Asia-Pacific region. An even greater emphasis is placed on scientific research activities with the USA, which is the UK's largest collaborator, and on broader scientific and research ties with Commonwealth countries [2].

THE ATTITUDE OF BRITISH UNIVERSITIES

The document Changes and Choices [5], which was the basis for the creation of Plan B, does not assume that this British alternative would be some kind of copy of the Horizon Europe programme. „If the Government decides not to associate with Horizon Europe because the terms of association do not deliver sufficient benefit to the UK, then we are not convinced that a persuasive case can be made for sizeable levels of public spending on activities that replicate, line by line, EU research and innovation arrangements in the UK.“ [5]. This fact could cause major problems for some UK universities and departments, as many of them have become dependent on EU funding [2]. For this reason, British universities have called for an urgent solution to the dispute over UK's access to the EU research and innovation programme Horizon Europe. Representatives of British universities also expressed concern that researchers from the EU would not involve British scientists in their projects [6]. Non-participation in the FP is also perceived as a big obstacle to the attractiveness of the UK as a destination for researchers [7]. A large number of British scientists fear that this situation would mean their real exclusion from the Horizon Europe programme.

THE STICK TO SCIENCE CAMPAIGN

In response to this unhappy state and the delayed development of association agreements with Switzerland and the UK, an initiative was created, or the Stick to Science campaign of the European research community (more than 5,600 major research funders/carriers, umbrella organisations, individual researchers, entrepreneurs and innovators), that calls for open and barrier-free collaboration between European research and innovation actors. The initiative aims for an accelerated association of Switzerland and the UK to FP Horizon Eu-

rope, which is held back by political barriers that have nothing to do with science. At the heart of the campaign is the need to address serious global challenges (e.g. mitigating pandemics, the impacts of climate change and addressing food security) through collaboration in science and innovation across geographic boundaries. The signatories of the campaign call on the EU, the UK and Switzerland to speedily conclude association agreements so that both countries can contribute scientifically and financially to the strengthening of the Horizon Europe programme and to a truly open, inclusive and excellence-based European Research Area [8].

DECLINE IN UK PARTICIPATION IN HORIZON EUROPE

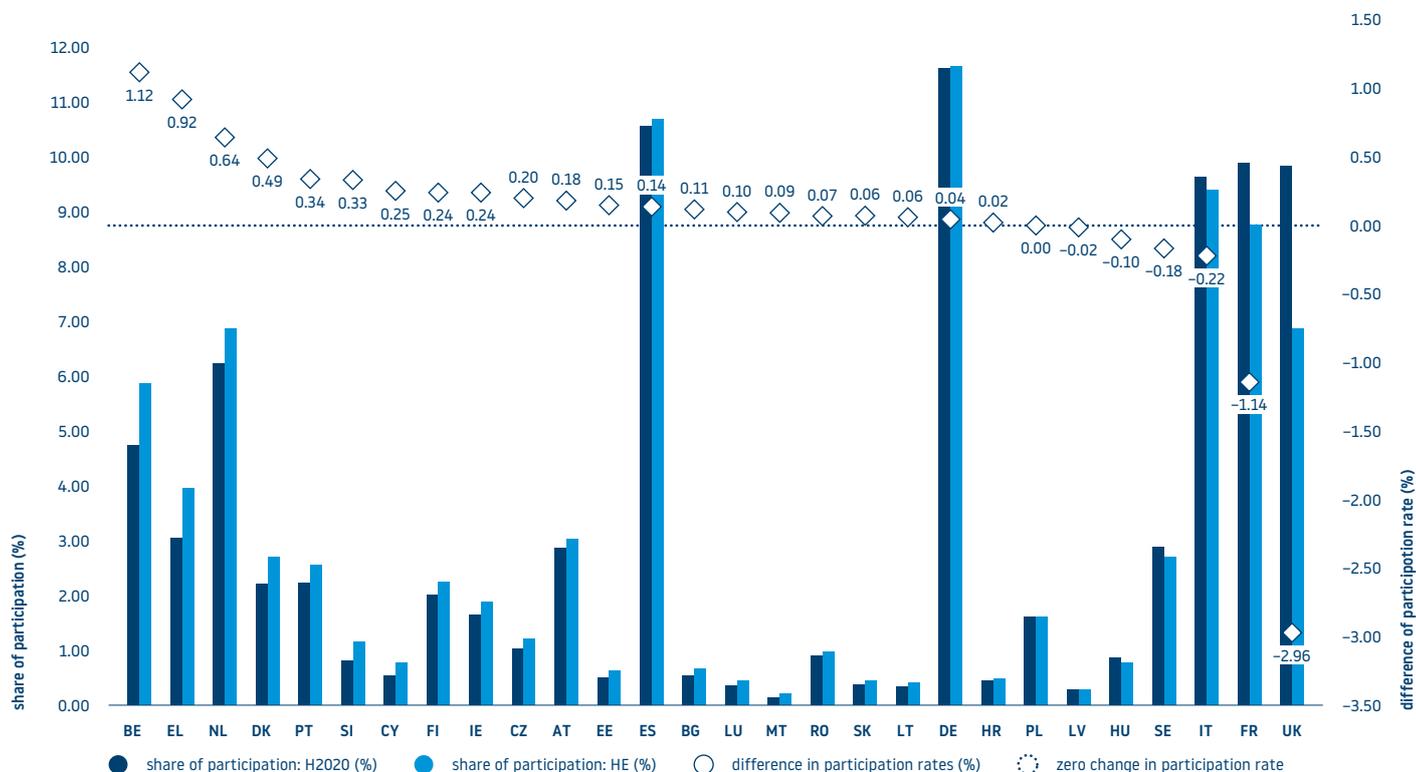
Uncertainty about the UK's association with Horizon Europe is beginning to show with the UK's much smaller participation in the programme. The UK dropped to seventh place among participants in the Horizon Europe programme, while it was third in the previous Horizon 2020 programme [2]. The decrease in the participation of the UK is very clearly visible when comparing the share of individual EU countries in the Horizon 2020 and Horizon Europe programmes. In Horizon Europe, the share of British institutions' participation has fallen the most of all the countries monitored. The difference in the share of participation reached almost 3% for the UK.

Obviously, this decrease in the participation of the UK at the beginning of the HE programme is certainly expected in the light of the above facts, i.e. in the context of the still unresolved relationship between the UK and the ongoing FP. It is clear that this decline in the UK's participation in the FP is not desirable. It is not just that the UK has made a significant scientific and financial contribution to the EU FPs in recent years, as evidenced by a number of analytical documents monitoring participation in FPs. The main point is that the UK is one of the most frequent partners in the implementation of scientific projects for many European countries. Let us recall that for NMS², the possibility to cooperate with excellent British institutions in the FP can be considered a “soft” form of spreading excellence. Unlike the Spreading excellence and widening participation in H2020 programme, in which only a small number of NMS institutions could participate, this soft form of spreading excellence is accessible to thousands of NMS teams and institutions [9].

TOP 15 BRITISH UNIVERSITIES

FPs are the world's largest programmes focused on international cooperation in research and innovation. These programmes offer a range of opportunities for research institutions and scientific teams from less performing countries to collaborate with scientific teams and workplaces from globally important European institutions. An evergreen of political and professional debates in recent years has been the expansion of the participation of new Member States (NMS) in FPs, whose presence in the FPs is still found to be insufficient or even low – e.g. [12]. One way in which this problem can be partially solved is to increase the success rate of research institutions and scientific teams from NMS (and more broadly from the so-called “Widening”³ countries) by increasing the quality of the project proposals they themselves submit or participate in. This can be achieved by cooperating with top excellent teams from the so-called TOP institutions. This set of problems has been analysed in detail in previous years – e.g. [9, 13]. A number of British universities undoubtedly belong among the world's leading European institutions. The lower involvement of excellent British institutions (universities) in FPs for the above reasons can also affect the participation and success rate of research institutions and scientific teams from many other European countries. A low success rate (the ‘Success rate trap’) of project proposals was analysed as one of the motivational barriers when submitting project proposals to FPs, especially in the case of NMS [12].

FIGURE 1: SHARE OF EU AND UK PARTICIPATION IN THE HORIZON 2020 AND HORIZON EUROPE PROGRAMMES



Note: The share of participation of a given country in both FPs is calculated as the proportion of participation of the given country in the given FP, to all participations in the FP. A country's share of FP participation is represented in a bar figure. The dot plot expresses the difference of shares in both FPs.

Source: EC – H2020 eCorda 05/2022 [10], HE eCorda 05/2022 [11], own data processing

Thus, in connection with the possible and increasingly real limitation of the participation of research institutions from the UK, we want to analyze in this paper the benefits of cooperation with teams from the “TOP 15” British universities (TOP 15 HES UK), i.e. those that received the highest financial support from the European Commission for the solution of projects of the H2020 programme (according to data from the e-Corda database from May 2022 [10]). We define the most successful British universities in the H2020 programme – the so-called TOP 15 HES UK – as the universities from the UK that claimed the highest financial support from the H2020 programme compared to other UK universities. A list of these universities is given in Table 1. There can be no doubt that these are important research institutions or universities from the point of view of the UK, Europe and the world. With the exception of the University of Exeter, all of these universities are among the TOP 100 universities in the world according to the QS⁴ World University Rankings 2022. The fact that they are important institutions also in the context of the FP can also be inferred from the achieved participation indicators achieved by these institutions in Horizon 2020. The TOP 15 HES UK participate in projects in the H2020 programme, the total cost of which represents 20% of all total costs incurred in solving all projects of this FP. The participation of these prestigious British universities reaches 35% of the participation of all institutions and research teams from the UK and 45% of the financial support claimed by the investigators of the H2020 programme projects from the UK. It should not be overlooked that at these universities, as host institutions, more than 1,000 ERC grant investigators, i.e. 13% of all ERC grant investigators in Horizon 2020, have found the conditions for their cutting-edge research. The Universities of Oxford and Cambridge have long been perceived by the public as a standard of scientific quality and research excellence.

TABLE 1: TOP 15 UK UNIVERSITIES IN THE H2020 PROGRAMME (TOP 15 HES UK)

H2020 TOP 15 HES UK	H2020 EC Contribution (€)	H2020 Participations
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	484 932 574,34	748
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD	522 352 980,71	720
UNIVERSITY COLLEGE LONDON	415 276 398,44	653
IMPERIAL COLLEGE OF SCIENCE TECHNOLOGY AND MEDICINE	323 889 441,57	547
THE UNIVERSITY OF EDINBURGH	272 336 953,42	406
THE UNIVERSITY OF MANCHESTER	216 336 427,58	354
THE UNIVERSITY OF BIRMINGHAM	147 561 290,67	328
UNIVERSITY OF BRISTOL	167 563 211,52	295
UNIVERSITY OF LEEDS	137 579 589,56	290
THE UNIVERSITY OF SHEFFIELD	119 782 548,05	250
KING'S COLLEGE LONDON	168 604 897,35	246
UNIVERSITY OF GLASGOW	131 792 826,16	227
THE UNIVERSITY OF EXETER	124 558 878,92	210
THE UNIVERSITY OF WARWICK	115 324 463,34	201
UNIVERSITY OF SOUTHAMPTON	128 432 479,95	200

Note: For the purposes of this article, the TOP15 HES UK universities belong to the group that claimed the highest financial support from the H2020 budget in the H2020 programme compared to other British universities. Only data for beneficiaries of Horizon 2020 funds are included in the table.

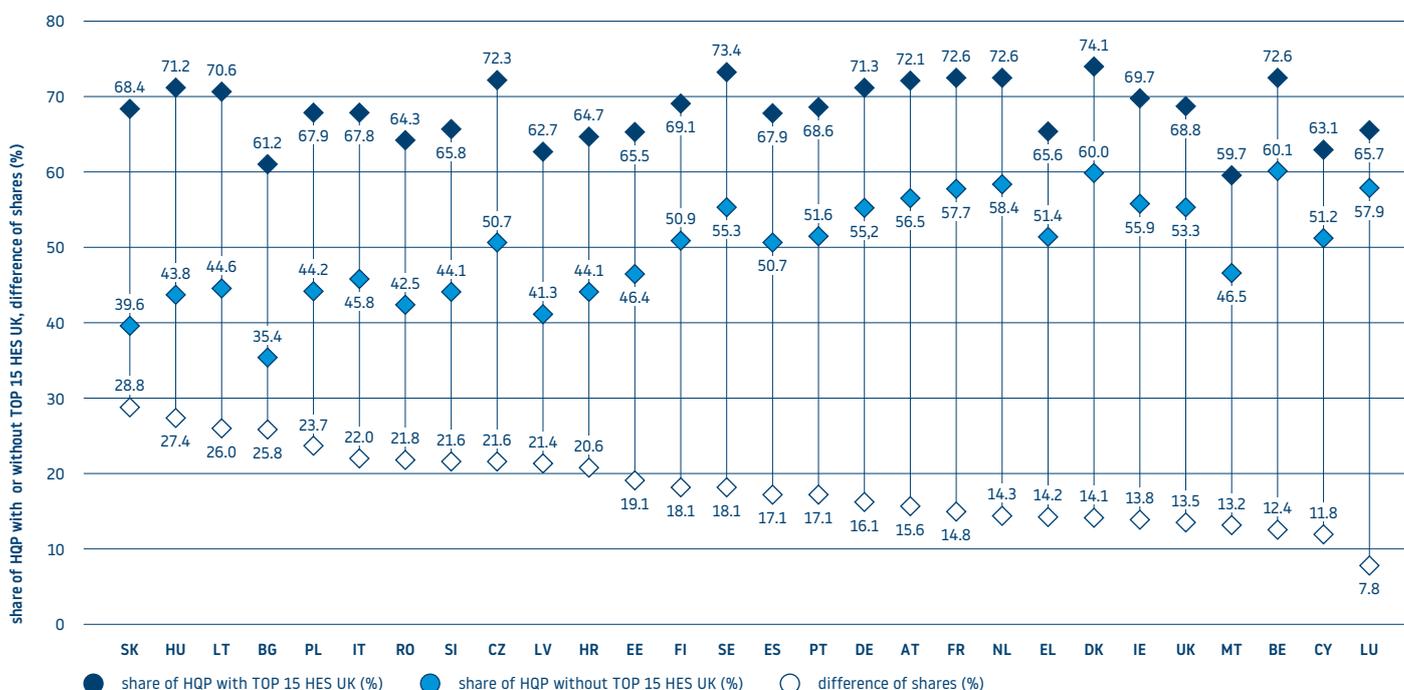
Data source: H2020 e-CORDA 05/2022 [10], own data processing

COOPERATION WITH TOP 15 BRITISH UNIVERSITIES INCREASES THE QUALITY OF PROJECT PROPOSALS AND THE SUCCESS RATE OF EU STATES IN FPS

The preparation of project proposals in cooperation with TOP 15 HES UK significantly increases their chances of implementation and obtaining a contribution from the FP budget. It is obvious that, regardless of which EU member country is concerned, project proposals prepared in cooperation with TOP 15 HES UK significantly increase their quality. The highest increase in the quality of project proposals, i.e. the largest increase in the share of high-quality project proposals (HQP)⁵ submitted to the Horizon 2020 programme in cooperation with TOP 15 HES UK is manifested in NMS. For 11 of them, this increase in the proportion of HQPs created in consortia of which at least one of the UK's excellent universities is a member is between 20 and 30%.

ject proposals in the Horizon 2020 and Horizon Europe programmes are recorded. For instance, the Czech Republic had a success rate of 21.2% for project proposals prepared in cooperation with TOP 15 HES UK and only 14.9% for those without cooperation with TOP 15 HES UK. The ratio of these success rates is 1.4. It can therefore be said that the success rate of project proposals in the Horizon 2020 programme with the participation of Czech research teams was 40% better when Czech researchers cooperated with TOP 15 HES UK than when project proposals were produced without these top institutions. The success rate ratios of project proposals are calculated in Table 2, as already mentioned, for two FPs – the Horizon 2020 programme and the Horizon Europe programme and for all EU countries, including the UK, which was considered an EU member state until the end of the H2020 programme. The overall view of the groups of EU-15 and EU-13 states indicates that a more significant difference between the success rates of project proposals in cooperation with or without TOP institutions was manifested in both monitored FPs for the EU-13 states, where the difference in success rate was 50%.

FIGURE 2: SHARE OF FULLY ELIGIBLE HIGH QUALITY PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK IN HORIZON 2020



The light blue points show the share of High-quality proposals (HQP)⁵, which the given EU and UK country achieved without cooperation with TOP 15 HES UK. The dark blue points show the proportion of HQPs that were prepared together with the TOP 15 HES UK teams. The white points represent the difference of HQP shares.

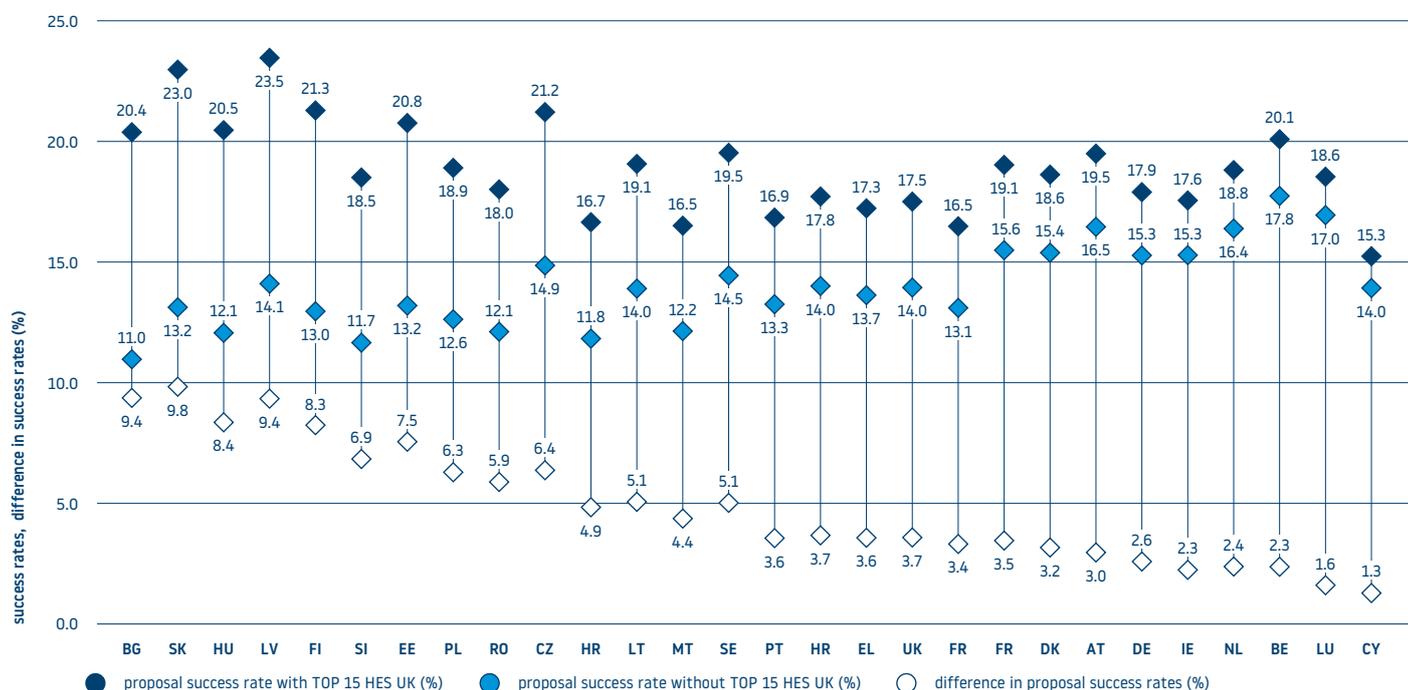
Note: ⁵High-quality project proposals – (HQP) are fully eligible project proposals that have reached the threshold value in the Peer Review Evaluation process – that is, they have been classified in the “Above threshold” category. The HQP share is calculated as the proportion of fully eligible project proposals classified as “Above threshold” to all fully eligible project proposals.

Data source: H2020 e-CORDA 05/2022 [10], own data processing

Cooperation with the TOP 15 HES UK increases not only the quality of submitted project proposals, but also of course their success rate. Figures 3 and 4 present the success rates of project proposals⁶ of EU states in the Horizon 2020 and Horizon Europe programmes achieved in cooperation with TOP 15 HES UK and without cooperation with these excellent research institutions. In analogy to the previous case, it is clear that the presence of leading British universities increases the success rate of project proposals for almost all EU countries. The order of the states in the graphs is not very important in this analysis. More important is the fact that the chance to receive funds from the FP budget increases significantly by tens of percent in almost all EU states when cooperating with TOP 15 HES UK. A more accurate assessment of the importance of cooperating with the TOP 15 HES UK universities is offered in Table 2, in which the success rates of pro-

The balance of success rates of project proposals for the EU-15 and EU-13 states is provided with an even greater degree of precision in Table 3, where we analyze the overall success rate of the project proposals of the EU-15 and EU-13 states in cases where the project proposals were prepared with or without TOP 15 HES UK in the three basic pillars of the Horizon 2020 programme. Here, too, it can be seen that cooperation with excellent research institutions is very beneficial for the EU-13 states, and moreover increases their success in FPs more than for the EU-15 states. On the other hand, it should be mentioned that research teams from EU-15 countries cooperate with TOP 15 HES UK more often than research institutions from EU-13 countries.

FIGURE 3: SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK IN HORIZON 2020 IN EU AND UK COUNTRIES

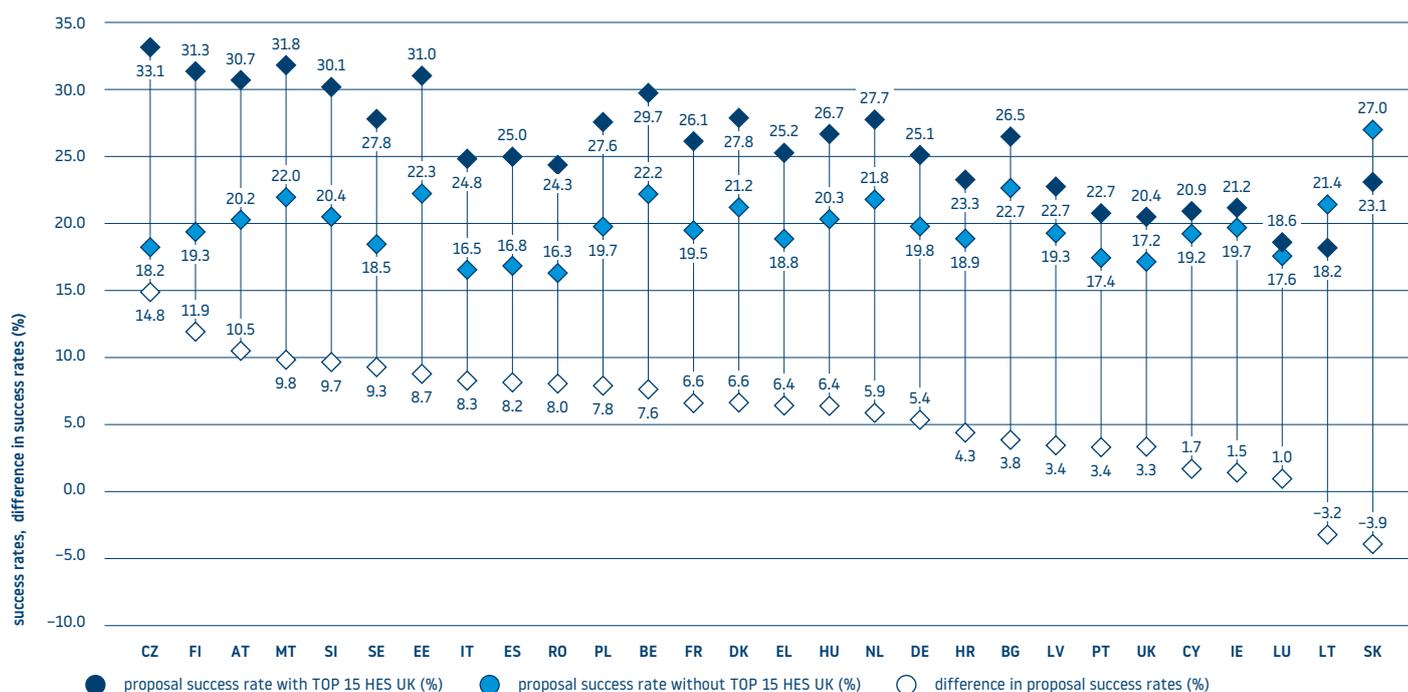


The dark blue points represent the success rate of project proposals prepared in cooperation with TOP 15 HES UK, and the light blue points pertain to proposals prepared without TOP 15 HES UK. The white points represent the difference in project success rates.

Note: the success rate of project proposals is calculated as the share of funded projects with the participation of the given state to all fully eligible project proposals with the participation of the given state.

Data source: H2020 e-CORDA 05/2022 [10], own data processing

FIGURE 4: SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK IN HORIZON EUROPE 2020 IN EU COUNTRIES AND IN UK



The dark blue points represent the success rate of project proposals prepared in cooperation with TOP 15 HES UK, and the light blue points pertain to proposals prepared without TOP 15 HES UK. The white points represent the difference in project success rates.

Note: the success rate of project proposals is calculated as the share of funded projects with the participation of the given state to all fully eligible project proposals with the participation of the given state.

Data source: H2020 e-CORDA 05/2022 [11], own data processing

TABLE 2: INCREASING THE SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH THE TOP 15 HES UK IN THE HORIZON 2020 AND HORIZON EUROPE PROGRAMMES IN EU COUNTRIES AND IN UK

country	status	increasing of proposal success rate in H2020	increasing of proposal success rate in HE	country	status	increasing of proposal success rate in H2020	increasing of proposal success rate in HE
FI	EU-15	1,6	1,6	CZ	EU-13	1,4	1,8
IT	EU-15	1,4	1,5	SI	EU-13	1,6	1,5
SE	EU-15	1,3	1,5	BG	EU-13	1,9	1,2
ES	EU-15	1,3	1,5	HU	EU-13	1,7	1,3
AT	EU-15	1,2	1,5	RO	EU-13	1,5	1,5
EL	EU-15	1,3	1,3	EE	EU-13	1,6	1,4
FR	EU-15	1,2	1,3	PL	EU-13	1,5	1,4
DK	EU-15	1,2	1,3	LV	EU-13	1,7	1,2
BE	EU-15	1,1	1,3	MT	EU-13	1,4	1,4
PT	EU-15	1,3	1,2	SK	EU-13	1,7	0,9
UK*	EU-15	1,3	1,2	HR	EU-13	1,3	1,2
DE	EU-15	1,2	1,3	LT	EU-13	1,4	0,8
NL	EU-15	1,1	1,3	CY	EU-13	1,1	1,1
IE	EU-15	1,1	1,1	OVERALL INCREASING	EU-15	1,4	1,3
LU	EU-15	1,1	1,1		EU-13	1,5	1,5
					EU	1,5	1,3

The increase in the success rate of project proposals prepared in cooperation with TOP HES UK is calculated as a share of the success rate of project proposals prepared in cooperation with TOP 15 HES UK and without TOP 15 HES UK in the Horizon H2020 programme or the Horizon Europe programme.

Note: *The UK was considered an EU member state until the end of the Horizon 2020 programme; for more details – see the notes at the end of the text of the article.

Source: EC – H2020 eCorda 05/2022 [10], HE eCorda 05/2022 [11], own data processing

TABLE 3: SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK AND WITHOUT TOP 15 HES UK, SUMMARY INCREASE OF THE SUCCESS RATE OF PROJECT PROPOSALS PREPARED IN COOPERATION WITH TOP 15 HES UK IN THE THREE MAIN PILLARS OF THE HORIZON 2020 PROGRAMME IN THE GROUPS OF EU-13 STATES (NMS) AND EU-15 STATES (OMS).

EU-13 (NMS) H2020 Pillar	proposal success rate with TOP 15 HES UK (%)	proposal success rate without TOP 15 HES UK (%)	difference in proposal success rates (%)	increasing of proposal success rate in H2020	share of project proposals with TOP 15 HES UK (%)
Excellent Science	13,4	10,1	3,3	1,3	16,8
Industrial Leadership	17,7	10,8	6,9	1,6	7,5
Societal Challenges	18,7	12,1	6,6	1,5	10,6
EU-15 (OMS) H2020 Pillar	proposal success rate with TOP 15 HES UK (%)	proposal success rate without TOP 15 HES UK (%)	difference in proposal success rates (%)	increasing of proposal success rate in H2020	share of project proposals with TOP 15 HES UK (%)
Excellent Science	15,6	13,6	2,0	1,1	29,2
Industrial Leadership	21,5	17,2	4,3	1,2	12,7
Societal Challenges	23,7	18,2	5,5	1,3	16,2

The increase in the success rate of project proposals prepared in cooperation with TOP HES UK is calculated as a share of the success rate of project proposals prepared in cooperation with TOP 15 HES UK and without TOP 15 HES UK in the three main pillars of the Horizon H2020 programme for the EU-15 and EU-13 groups of states.

Source: EC – H2020 eCorda 05/2022 [10], HE eCorda 05/2022 [11], own data processing

CONCLUSION

We have shown that there is a relatively small group of top UK universities participating in projects that are allocated 1/5 of the costs of all Horizon 2020 projects. Project proposals prepared in cooperation with these excellent British universities increase the success rate of almost all EU countries. The increase in the success rate and quality of project proposals is particularly evident in the NMS, which is key for these countries, because it is precisely in the context of the NMS that the low success rate of project proposals is often mentioned as a sig-

nificant barrier to the expansion of their participation in international research and cooperation programmes such as FPs. Needless to say, preparing project proposals in cooperation with TOP 15 HES UK really pays off, as it reduces the cost of preparation invested in projects that do not pass the rigorous expert evaluation introduced in the FP. For these reasons at least, it seems important to keep British universities and other institutions in a dignified mode for participation in FPs. At the moment (early July 2022), however, there are still warning signs that the disagreements over the post-Brexit setting of scientific cooperation between the EU and the British government will not be transformed into the desired association agreement, which would

guarantee the British institutions a further significant role in the Horizon Europe programme and sufficient funds to implement the research plans. Although it is not just about funding in relation to FPs, this issue is at stake because, as it turns out, the release of British national resources to a sufficient extent, which should have been used in the joint Horizon Europe programme or in an alternative scheme, such as the so-called ‘Plan B’, is at risk due to internal political disputes and problems. Moreover, national funds can hardly be compared to those raised by British institutions from the FPs budget [14].

The professional public considers Horizon Europe to be the largest international science funding programme in the world, bringing together researchers from industry and academia, and its projects range from fundamental research to solving problems such as combating climate change and trying to find cures for debilitating diseases [6]. On the contrary, the direction of British grant support leads to purposeful utilitarianism, with research funding in the UK increasingly moving away from fundamental research towards applied research, which raises serious concerns for many British scientists.

Years ago, our colleague Vladimír Albrecht asked himself: “Isn’t the ‘European added value’ of FPs due precisely to the fact that European institutions (including the Czech ones, of course) can cooperate with globally important British institutions without cumbersome bilateral negotiations?” The answer is, unequivocally yes! While there is a tendency in the UK to bet on non-European global research cooperation outside Horizon Europe, this will be extremely difficult as non-European actors also intend to participate in Horizon Europe. “Horizon is where the party’s at,” says Martin Smith, head of the policy lab at Wellcome, a biomedical-research funder in London. “To try and build something independently of that will be extremely difficult.” [7]. Although growing fears constantly persist that the UK will not fully participate in the Horizon Europe programme, we would like to express the hope that the UK’s efforts for European cooperation in the field of research and innovation will continue and that the willingness to recruit British partners to the solving consortia of European projects will not be significantly impaired.

NOTES

¹ The “Protocol on Ireland and Northern Ireland” problem: The UK government and the European Commission continue to disagree on how to approach, economically and politically, the border between Northern Ireland and the Republic of Ireland, which is part of the EU.

² **EU-15: old member states (OMS)**, i.e. states that formed the EU until 30.04.2004, **EU-13: new member states (NMS)** – EU states that joined the EU on 30.04.2004 and later The United Kingdom of Great Britain and Northern Ireland – UK became a third country on 1 February 2020 under the EU-UK Withdrawal Agreement, which declared that UK-domiciled legal entities continued to be fully eligible to participate and fund raising from the Horizon 2020 programme until its end in 2020. For this reason, the UK is considered an EU Member State in the e-CORDA database for Horizon 2020 and is reported as such in all statistical surveys.

³ **Widening countries** – in Horizon Europe, “widening countries” are defined as countries with a low intensity of R&I. These are: Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, and Slovenia, countries associated to Horizon Europe which are Albania, Armenia, Bosnia and Herzegovina, Faeroe Islands, Georgia, Kosovo, Moldova, Montenegro, Morocco, North Macedonia, Serbia, Tunisia, Turkey, Ukraine, and EU outermost regions - Guadeloupe, French Guiana, Martinique, Réunion, Mayotte Saint-Martin, The Azores, Madeira, Canary Islands.

⁴ **QS World University Rankings** – The QS World University Rankings is a university ranking in which universities are ranked in six categories (or indicators) that effectively capture university performance. In more detail: <https://www.topuniversities.com/qs-world-university-rankings/methodology>

⁵ **High quality project proposals** – (HQP) are fully eligible project proposals that have reached the threshold value in the Peer Review Evaluation process – that is, they have been classified in the “Above

threshold” category. The HQP share is calculated as the proportion of fully eligible project proposals classified as “Above threshold” to all fully eligible project proposals.

⁶ The success rate of project proposals is calculated as the share of funded projects with the participation of the given state to all fully eligible project proposals with the participation of the given state. The Full Eligible Project Proposal: is a project proposal with a completed evaluation process that has demonstrated formal correctness (eligibility) according to the H2020 (HE) rules and has passed the entire evaluation process, i.e. the process of expert assessment of its quality (peer review evaluation).

* **Author’s note:** At the end of July 2022, the UK has released long-awaited details of its „Plan B“ alternative to Horizon Europe, including a rival to the European Research Council (ERC) and continued support for its researchers to join Horizon consortia. The most significant pledge is a promise to fund all UK participants in Horizon Europe consortia where grant agreements are signed before 31 March 2025. Even if the UK isn’t associated to Horizon Europe, UK researchers can still join these consortia if they bring their own money, although they can’t coordinate them. So this should enable UK researchers to join around two thirds of Horizon calls, even if association doesn’t happen [15]. However, despite all the plans, nothing is certain due to the unstable political situation in the UK. On the contrary, it is almost certain that refusing to associate the UK with Horizon Europe would be a mistake. Without the UK’s full association, Horizon Europe may become less competitive, which could impact on the excellence and prestige of EU grants.

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HAVE THE PUBLICATIONS PRODUCED UNDER THE ERC-CZ PROGRAMME THE SAME BIBLIOMETRIC QUALITY AS THOSE FROM THE ERC PROJECTS INVOLVING CZECH INSTITUTIONS IN THE FP7 AND H2020 PROGRAMMES?

MAJÍ PUBLIKACE VYTVOŘENÉ V PROGRAMU ERC-CZ STEJNOU BIBLIOMETRICKOU KVALITU JAKO PUBLIKACE VZNIKLÉ Z PROJEKTŮ ERC S ÚČASTÍ ČESKÝCH INSTITUCÍ V 7. RP A PROGRAMU H2020?

Abstract: The ERC – CZ programme was established in 2010 with the aim of supporting excellent research in the Czech Republic by implementing project proposals that were submitted to one of the calls of the European Research Council (ERC) and were evaluated by international expert panels of the European Research Council, but did not receive support from European funds – or respectively, from FP7 and the H2020 programme. Between 2012 and 2021, a total of 30 projects were supported from the ERC-CZ programme. In this analysis, we compared the publication results of this programme with the publication results of the ERC-FP7 and ERC-H2020 projects involving Czech research institutions (so-called ERC-FP7-CZ and ERC-H2020-CZ projects) either as the host institution of the main investigator of the project, or as a partner institution, providing the main investigator with partial services and activities necessary for solving the project.

Our analysis shows that ERC-CZ is a relatively successful programme, as it produces on average a slightly higher number of publications per project than the number yielded by ERC projects with the participation of Czech institutions in the H2020 programme. The bibliometric quality of publications from ERC-CZ also is comparable to

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that of publications from the ERC-H2020-CZ projects. Although ERC-CZ publications have a slightly lower level of international cooperation than ERC-H2020-CZ publications, their normalized citation rate (CNCI) is the same. Publications from ERC-FP7-CZ have an even higher citation rate, but this is most likely due to the fact that almost half of these publications came from projects that had a main host institution in the UK and were led by experienced principal investigators (PI) affiliated with British institutions.

INTRODUCTION

European Research Council (ERC) grants have been awarded ever since the start of FP7 in 2007. Grants are awarded “to address breakthrough research” that leads to significant results and has the potential to push forward the boundaries of human knowledge. Project proposals to highly competitive contests (calls) can be submitted by scientists/researchers from all over the world who wish to address an ERC project in a given institution of an EU Member State or a country associated to the Framework Programme. ERC supports both fundamental and applied research, does not set priorities or thematic limitations; calls are open to all scientific areas (so-called bottom-up approach). The bottom-up approach has remained a key feature since 2007, when ERC grants were introduced into FP7 under the Ideas priority. Even in the H2020 programme, this approach has not changed. ERC is part of Pillar 1 Excellent Science. The only criteria that are evaluated in case of ERC grants are the quality of the project proposal (scientific excellence) and the person of the principal investigator. The evaluation process is multi-round, based on the evaluation of scientific panels composed of recognized scientists picked by the ERC Scientific Council, who rely on the opinions of independent experts to discuss the submitted project proposals” (Čapková 2021).

In the long term, applicants from the Czech Republic have not been very successful in obtaining the ERC grants. In response to this development, a program funded by the Government of the Czech Republic called ERC-CZ was created. The ERC-CZ programme is aimed at supporting excellent projects of researchers who applied for a Grant from the European Research Council and were evaluated as excellent, but failed to receive an ERC grant from the FP7 or H2020 programme (MEYS 2018).

The ERC-CZ programme was approved by the Government of the Czech Republic on 7 December 2010 for the period 2012–2019 with an allocation of CZK 600 million. Government Resolution no. 190 of 9 March 2016 approved the extension of the programme until 2021. The Ministry of Education, Youth and Sports (MEYS 2018) is the provider. The ERC-CZ programme is announced in the form of repeated public tenders following the publication of the results of project evaluations from the European ERC calls.

The aim of the ERC-CZ programme is to support excellent research in the Czech Republic by implementing project proposals submitted to one of the calls of the European Research Council, which were included in the international peer review evaluation carried out by ERC expert panels, but did not receive support from European funds” (MEYS 2018). Between 2012 and 2021, a total of 30 projects were supported by the ERC CZ programme (MEYS 2021, CEP 2022) with a total budget of about CZK 550 million (almost €22 million).

In our analysis, we wanted to compare the publication outputs of the ERC-CZ projects with the results of ERC projects funded under the FP7 and H2020 programmes, in the solution of which the Czech research institution participates either as a host or as a partner institution (see below) – the so-called ERC-FP7-CZ and ERC-H2020-CZ projects.

METHODS

The publications produced during the period 2007 to 2020 from the ERC projects of the FP7 and H2020 programmes, in which Czech institutions participated (in this study we refer to them as ERC-FP7-CZ and ERC-H2020-CZ projects), were downloaded from the eCorda database in February 2022. Publications created during the period 2007 to 2020 from all projects of the ERC-CZ programme were withdrawn from the RIV IS RDI (Index of Information on the Results of the Research, Development and Innovation Information System) in February

2022 (RIV 2022). All publications where DOI¹ was identified were then downloaded from the WoS database (WoS 2022) and exported to InCites during April 2022. (Note: Consequently, our bibliometric analysis does not include all publications that arose from the solutions of the ERC-CZ, ERC-FP7-CZ and ERC-H2020-CZ projects, but is limited only to those that had the DOI and were traceable in WoS.)

For all sets of publications, we analysed the following parameters: the number of publications, their citation rate normalized by field and type of publication (CNCI²), the share of publications published in Q1 journals³, the share of publications created within the framework of international cooperation⁴ and the share of publications whose first⁵ or corresponding⁶ author has an affiliation in a Czech institution.

RESULTS AND DISCUSSION

NUMBER OF PUBLICATIONS

The total number of publications from all ERC-CZ projects listed in the RIV was 549, of which 462 publications indicated their DOIs. The total number of publications listed in the eCorda database from all ERC-H2020 projects with the participation of Czech institutions (ERC-H2020-CZ) was 690 (of which 617 had DOIs) and from ERC-FP7-CZ projects the number of publications was 604 (of which 434 publications had DOIs). WoS and InCites index 432 publications from the ERC-CZ programme, 445 publications from the ERC-H2020-CZ projects and 392 publications from the ERC-FP7-CZ projects (Fig. 1 top). After conversion to the number of projects, ERC-FP7-CZ produced an average of 28 publications per project (Fig. 1 in the middle). In ERC-CZ almost half less publications were created per project and in ERC-H2020-CZ even 55% less.

CITATION RATES STANDARDISED BY FIELD AND TYPE OF PUBLICATION (CNCI)

Publications resulting from the ERC-FP7-CZ projects had the highest citation rate, their average CNCI is about 2.8 (Fig. 1 bottom). Publications from the ERC-CZ and ERC-H2020-CZ projects had a significantly lower citation rate, although still significantly above average (CNCI is about 1.46 for both programmes).

SHARE OF PUBLICATIONS PUBLISHED IN Q1 JOURNALS AND INTENSITY OF INTERNATIONAL COOPERATION

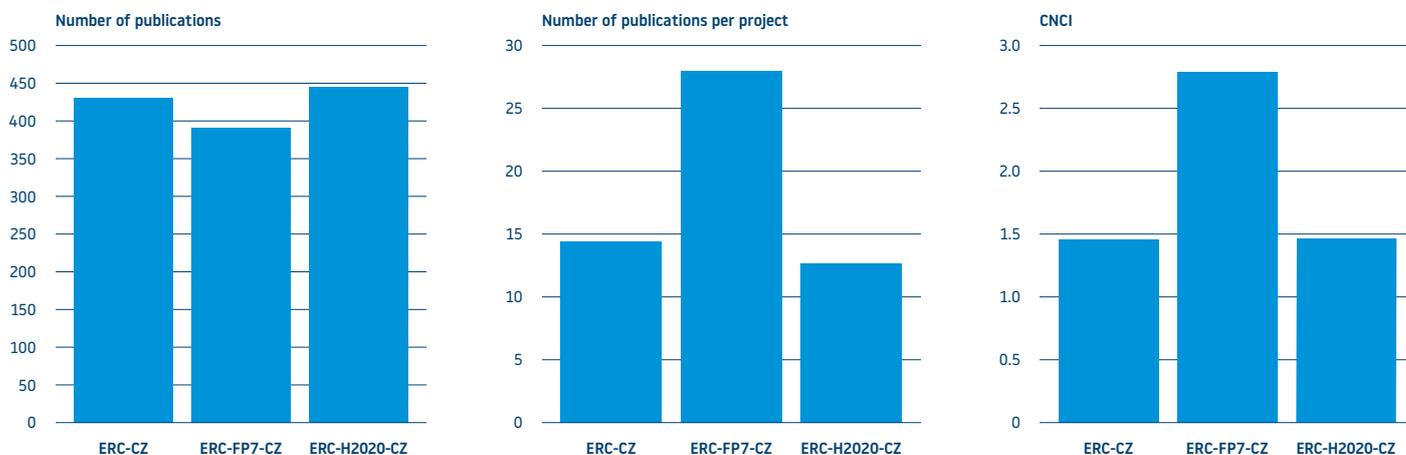
The highest share of publications published in journals belonging to the highest quartile (Q1) was held by publications resulting from the ERC-FP7-CZ projects (almost 80%), a lower share was in publications from the ERC-CZ and ERC-H2020-CZ projects (about 60%) (Fig. 2 at top).

A higher share of publications with an international team of authors was created in the ERC-FP7-CZ and ERC-H2020-CZ projects (almost 70%), a slightly lower share of international publications was created in the ERC-CZ projects (about 60%).

SHARE OF PUBLICATIONS OF WHICH THE FIRST OR CORRESPONDING AUTHOR HAS AN AFFILIATION IN A CZECH INSTITUTION

We also analysed the proportions of publications in which a researcher affiliated in a Czech institution was listed as the first author or as the corresponding author (see Fig. 2 lower part). The author mentioned as the first author is usually the one who has the greatest share in con-

FIGURE 1: NUMBERS OF PUBLICATIONS RESULTING FROM THE ERC-CZ, ERC-FP7-CZ AND ERC-H2020-CZ PROJECTS (LEFT). AVERAGE NUMBER OF PUBLICATIONS PER 1 PROJECT (MIDDLE). CATEGORY-NORMALIZED CITATION INDEX (CNCI) OF THESE PUBLICATIONS (RIGHT).



ducting research, has the greatest merit in obtaining documents and information for the publication and also plays an important role in its writing. For publications from the ERC-CZ and ERC-H2020-CZ projects, the first author has an affiliation in the Czech Republic in 73% and 61% of publications, respectively. However, for ERC-FP7-CZ projects, this applies to only about 40% of publications.

The corresponding author is usually the ideological leader of the team, responsible for the entire concept of the research project, who also plays a decisive role in the writing of the publication. For publications from the ERC-CZ and ERC-H2020-CZ projects, the corresponding author has an affiliation in the Czech Republic in ca. 76 % and ca. 64 % of publications, respectively. However, for publications from ERC-FP7-CZ projects, a Czech corresponding author is mentioned only in about 41% of cases. However, a high proportion of publications (34 %) from ERC-FP7-CZ projects had a corresponding author from Great Britain (data not shown in Fig. 2).

WHO DO CZECH AUTHORS COLLABORATE WITH IN THE ERC-CZ, ERC-FP7-CZ AND ERC-H2020-CZ PROJECTS AND HOW THIS AFFECTS CITATION OF THE RESULTING PUBLICATIONS

For the ERC-CZ and ERC-H2020-CZ projects, the vast majority of publications have at least one co-author from the Czech Republic and more than 60% of publications also have a corresponding author affiliated in a Czech institution (Fig. 3 top and middle). However, the situation is different for ERC-FP7-CZ projects, where only about 66% of publications have at least one author affiliated in a Czech institution and only 41% of publications have a corresponding author affiliated in a Czech institution. This is not high enough by far, considering that all publications are the results of projects involving Czech institutions. On the other hand, a large number of publications from ERC-FP7-CZ have at least one co-author affiliated in the UK (56% of publications)

FIGURE 2: SHARE OF PUBLICATIONS RESULTING FROM THE ERC-CZ, ERC-FP7-CZ AND ERC-H2020-CZ PROJECTS PUBLISHED IN THE JOURNALS OF THE FIRST QUANTILE (Q1 JOURNALS) AND PUBLICATIONS PRODUCED BY INTERNATIONAL TEAMS (INTERNATIONAL COLLABORATION) (LEFT). THE SHARE OF PUBLICATIONS IN WHICH THE CORRESPONDING AUTHOR OR FIRST AUTHOR HAS AN AFFILIATION IN THE CZECH REPUBLIC (RIGHT).

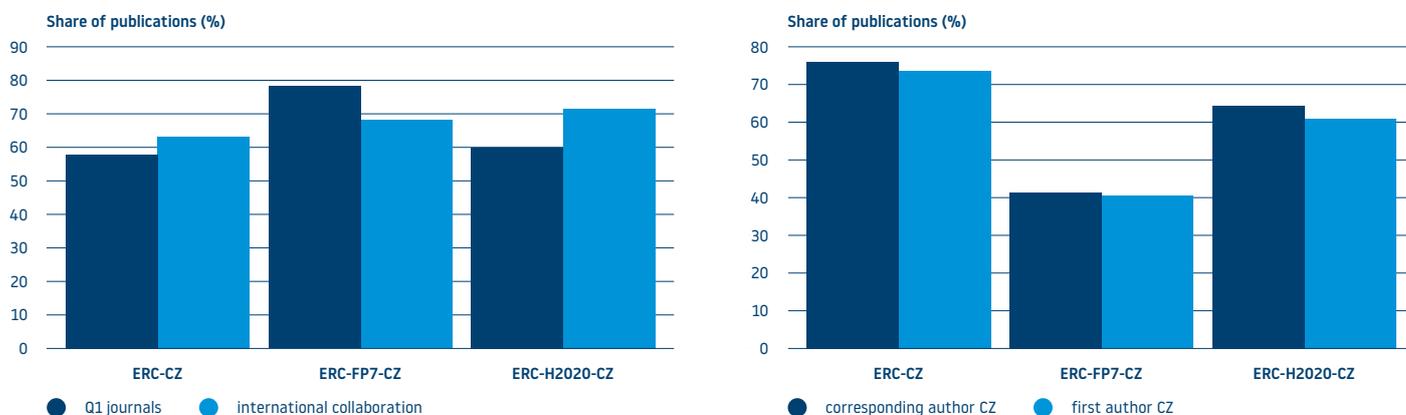
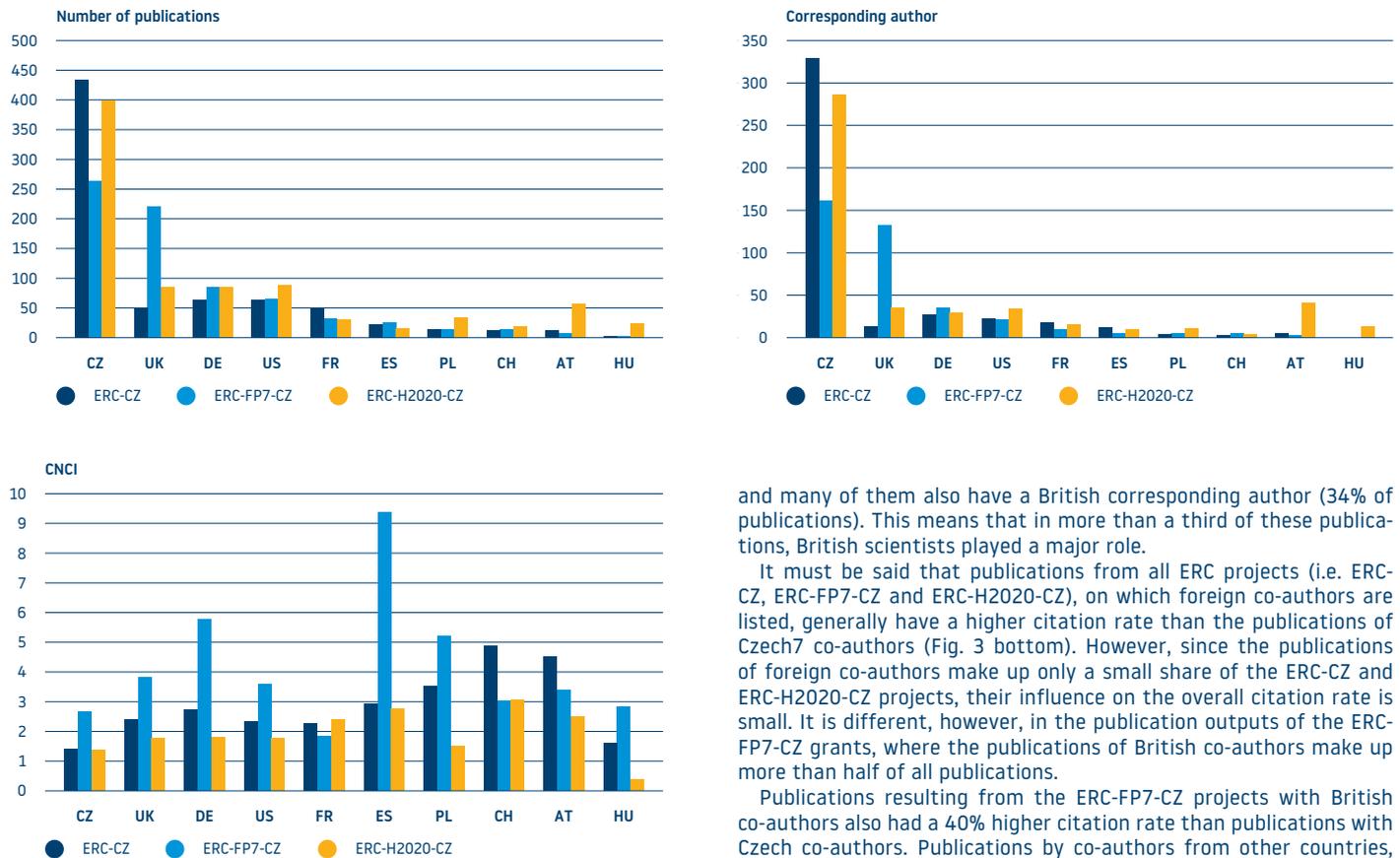


FIGURE 3: NUMBER OF PUBLICATIONS RESULTING FROM ERC-CZ, ERC-FP7-CZ AND ERC-H2020-CZ PROJECTS THAT HAVE A CO-AUTHOR (LEFT) OR CORRESPONDING AUTHOR (RIGHT) FROM THE GIVEN COUNTRY AND THEIR CNCI (BOTTOM)

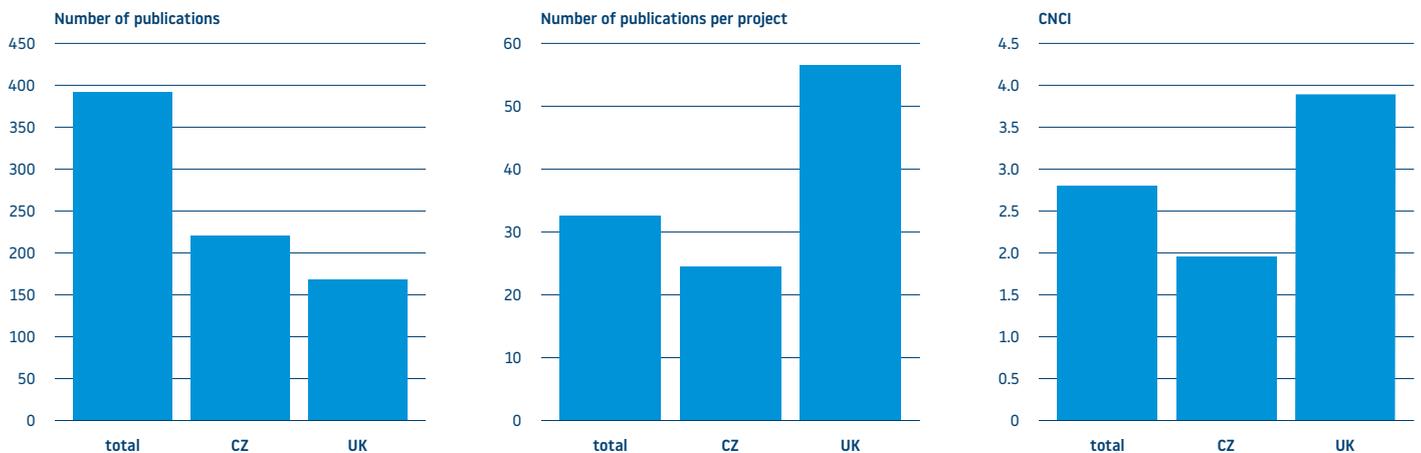


and many of them also have a British corresponding author (34% of publications). This means that in more than a third of these publications, British scientists played a major role.

It must be said that publications from all ERC projects (i.e. ERC-CZ, ERC-FP7-CZ and ERC-H2020-CZ), on which foreign co-authors are listed, generally have a higher citation rate than the publications of Czech co-authors (Fig. 3 bottom). However, since the publications of foreign co-authors make up only a small share of the ERC-CZ and ERC-H2020-CZ projects, their influence on the overall citation rate is small. It is different, however, in the publication outputs of the ERC-FP7-CZ grants, where the publications of British co-authors make up more than half of all publications.

Publications resulting from the ERC-FP7-CZ projects with British co-authors also had a 40% higher citation rate than publications with Czech co-authors. Publications by co-authors from other countries,

FIGURE 4: NUMBER OF PUBLICATIONS RESULTING FROM ERC-FP7-CZ PROJECTS THAT HAVE A PRINCIPAL INVESTIGATOR (PI) WITH AN INSTITUTIONAL AFFILIATION (GUEST INSTITUTION) IN THE CZECH REPUBLIC (CZ) OR IN GREAT BRITAIN (UK) (LEFT). AVERAGE NUMBER OF PUBLICATIONS PER 1 PROJECT (MIDDLE). AVERAGE CNCI OF THESE PUBLICATIONS (RIGHT).



especially Germany or Spain, also have higher CNCI, but there are far fewer of them than the British ones and therefore their influence on overall citation is limited. This suggests that the high average citation rate of publications from ERC-FP7-CZ may be due to the participation of foreign (and namely British) co-authors or corresponding authors.

INFLUENCE OF THE PRINCIPAL INVESTIGATOR (PI) AFFILIATED IN A BRITISH INSTITUTION ON THE CITATION OF PUBLICATIONS CREATED IN THE ERC-FP7-CZ PROJECTS

The eCorda database allows not only the identification of publications that have arisen from projects solved in various institutions, but also from projects of various PIs. All analysed publications were created within the framework of the ERC-FP7-CZ and ERC-H2020-CZ projects solved (or co-solved) in Czech institutions. However, a Czech institution can be either a host institution where the principal investigator carries out the main part of his research (which may be a Czech or a researcher of another nationality), or a partner institution that provides the principal investigator with additional services: partial research activities, expertise, partial data analyses are carried out there on equipment that the principal investigator does not have in the host institution, etc. These partner institutions employ researchers who participate in these activities and thus cooperate with the principal investigator and, of course, then also participate in the resulting publications as co-authors.

Within these grants, the principal investigator may be affiliated to a Czech or foreign institution. In the ERC-FP7-CZ projects analysed in this paper, publications with a valid DOI were produced in projects led by the principal investigators affiliated with either a Czech or a British research institution, only one publication arose from the project of the principal investigator affiliated in an Austrian institution. In order to verify the hypothesis that the high citation of publications from ERC-FP7-CZ may be due to the participation of British scientists in the role of the main authors, we have separately downloaded publications from the eCorda database from projects led by the principal investigators from the Czech Republic and from Great Britain and analysed them separately. In this analysis, we omitted one publication of the principal investigator affiliated in an Austrian institution.

It turned out that publications from projects led by the principal investigator affiliated with a British institution represent almost half (about 43%) of all publications and have an average citation rate almost 2 times higher than publications from projects led by the principal investigator affiliated with a Czech institution (Fig. 4 top and bottom). This confirms our hypothesis that the high average citation rate of publications resulting from the ERC-FP7-CZ projects is due to the participation of British researchers in the role of principal investigators - or main authors. What's more, projects led by the British principal investigator also have a much higher productivity, as on average they produce 56 publications per project, while in projects led by the Czech principal investigator there are only 25 publications per project (Fig. 4 in the middle).

CONCLUSION

On the whole, our analysis shows that ERC-CZ is a relatively successful programme, as it produces on average a slightly higher number of publications per project than the number yielded by ERC projects with the participation of Czech institutions in the H2020 programme. The bibliometric quality of publications from ERC-CZ also is comparable to that of publications resulting from the ERC-H2020-CZ projects. Although ERC-CZ publications have a slightly lower intensity of inter-

national collaboration than ERC-H2020-CZ publications, their standardized citation rate (CNCI) is the same. Almost two times more publications per project are produced on average in ERC-FP7-CZ projects, and these publications also have a significantly higher citation rate, but this is due to the participation of experienced British principal investigators (PI) in almost half of these publications.

NOTES

¹ The DOI (Digital Object Identifier) is a unique identifier of a digital object accessible through digital networks (e.g., a scientific article on the web). DOI uniquely identifies digital objects on the Internet.

² CNCI (category normalized citation impact) is the average number of citations of a set of publications normalized by field of publication, their type and the year in which they were published. The set of all publications registered in WoS has CNCI = 1. CNCI values greater than 1 indicate that a given set of publications is cited more than the industry average, i.e., the average for the given field of science.

³ Q1 journals – the top quarter (highest quartile) of journals from each field with the highest IF (impact factor) in the given field.

⁴ International publications are those that have authors from at least two different countries.

⁵ First author – indication of the importance of the author according to WoS. The first author mentioned usually is the author who contributed the most to the creation of the publication.

⁶ Corresponding author – indication of the importance of the author according to WoS. The corresponding author is usually the lead manager (ideological leader) of the entire publication.

⁷ Czech publications are all publications for which at least one author has an address in the Czech Republic.

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PARITA KUPNÍ SÍLY JAKO ALTERNATIVNÍ FINANČNÍ UKAZATEL PRO HODNOCENÍ ÚČASTI V PROGRAMU HORIZONT 2020 A DALŠÍCH RP

Abstract: The article briefly discusses the possibility of using purchasing power parity as an alternative financial indicator for assessing the participation of individual EU and associated countries in the Horizon 2020 programme and in other FPS. The application of purchasing power parity can serve as an alternative view of how the Czech Republic is doing financially within these programmes. The example of the H2020 programme shows that financial indicators for the Czech Republic (and for a number of other new EU Member States) are not nearly as unfavourable as it seems when working only with nominal values.

Abstrakt: Článek se stručnou formou zabývá možností využití parity kupní síly jako alternativního finančního ukazatele pro hodnocení účasti jednotlivých zemí EU a asociovaných zemí v programu Horizont 2020 a dalších RP. Použití parity kupní síly může sloužit jako alternativní pohled na to, jak si ČR vede z finančního hlediska v rámci těchto programů. Na příkladu programu H2020 je vidět, že finanční ukazatele pro ČR (a i pro řadu dalších nových členských zemí EU) nejsou zdaleka tak nepříznivé, jak se při práci pouze s nominálními hodnotami zdá.

INTRODUCTION

The basic characteristics of monitoring the Czech Republic's participation in the Framework Programmes of the European Union for Research and Development (hereinafter referred to as "EU" and "FPS") include, among other things, the so-called nominal financial indicators – i.e. amounts presented in the Euro currency as collected in the non-public database eCorda¹ of the European Commission's Directorate-General for Research and Innovation and presented to the public through the interactive visualization of the European Commission's Horizon Dashboard².

Subsequently, the eCorda database serves as the main source of information for the creation of reports of the CAS Technology Centre on the participation of the Czech Republic in the FPS and for the preparation of other analytical materials. Among other things, they monitor the financing of FP projects in individual EU Member States and in associated countries to FP³. At the same time, the EU's "financial contributions are a key issue in understanding EU-13 participation" in the FPS for Research and Development (Pazour et al. 2018, p. 47). Financing of projects with Czech participation is compared with financing of projects in old and new EU Member States⁴. Individual authors point to a lower average level of support from the FPS budget for the Czech Republic and the new EU Member States compared to the old countries (e.g. Pazour et al. 2018), even in cases where these values are recalculated, for example, to 1 participation per 1 million inhabitants (e.g. Frank, Albrecht 2016; comparison of the participation of entities for Prague and selected European cities, Vojtěch 2019) or per unit of expenditure on research and development (Frank 2021).

In the context of financial indicators and their subsequent use in specific analyses, the Horizon 2020 programme ('H2020') and other FPS often pays close attention to personnel costs, as there are significant differences in the modalities and levels of remuneration between old and new EU Member States, as well as between new Member States (Chvojková 2020). According to the European Court of Auditors (2018), "personnel costs are a key cost category, accounting on average for approximately 45 % of the total costs of H2020 research projects". According to expert estimates of the Technology Centre of the Czech Academy of Sciences, their representation is even 70–80%, according to the Austrian Research Promotion Agency 60–90% depending on the specific project. The results of the H2020 audit presented in Prague on 14 May 2019 also indicate a 75% representation of personnel costs in the total costs of H2020 projects (Bancos 2019). The FP H2020 and Horizon Europe payroll rules, as amended on 29 June 2022, "fully respect the level of remuneration set in each institution" and the level of remuneration under these programmes should correspond to the normal level in each country or organisation. Since there are significant differences between EU Member States in the performance of their economy, the standard of living and therefore also wage and price levels, we consider it useful to use an alternative financial indicator to evaluate the Czech Republic's participation in the H2020 programme and thus contribute to the discussion within the framework of the final evaluation of this programme.

Eurostat, the Organisation for Economic Co-operation and Development or the World Bank use the purchasing power standard in addition to nominal indicators in Euro or US dollars, which, unlike nominal indicators, takes into account the difference in price levels between

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countries (including in countries using the common currency), in addition to nominal indicators. When using nominal values, countries with high price levels show higher values of economic aggregates than countries with lower price levels. That is why the basic indicator of EU regional policy is gross domestic product (“GDP”) per capita expressed in purchasing power standard (“PPS”). This indicator then determines the achievable amount of support from the European Structural and Investment Funds. For instance, according to Eurostat data, the Czech Republic reached 67% of the EU27 average in 2020 when expressing GDP in € per capita and 93% in terms of purchasing power parity. Similarly, e.g. Slovenia – 75% of the EU27 average in GDP/person in € and 89% of the EU27 average in GDP/person in PPS. The GDP indicator is supplemented (e.g. Mejstřík 2015) by the indicator of net disposable household income per 1 inhabitant in order to determine what part of it remains available to the permanent resident population. Eurostat also reports the net disposable household income indicator in PPS. Individuals and individual organisations also work with the principle of purchasing power parity – when planning foreign trips, business trips, internships or employment relationships abroad, they compare the domestic and foreign price levels. That is why, and given the significant proportion of personnel costs in the total FPs costs – and the proximity of personnel costs to the indicator of net disposable household income, as well as the fact that Eurostat includes household consumption (co-financed by FP in this particular case) in the calculation of purchasing power parity – the quantification of financial support in purchasing power standard using the example of the H2020 programme seems appropriate.

SOURCE DATA FOR ANALYSIS

Extracts from the eCorda database were used to convert the financial data of H2020 and FP7 projects into purchasing power parity – for H2020 as of 17 May 2022, for FP7 as of 30 April 2021. In terms of the type of participants, only the so-called beneficiaries were included in the analysis.

In the H2020 programme, 35,931 projects were evaluated, in which 159,592 participations were recorded. The total cost of participants in these projects amounted to €83.55 billion and the EU contribution to these projects amounted to €68.63 billion. In FP7, 25,809 projects were evaluated with 139,241 recorded participations. The total cost of participants in these projects amounted to €65.91 billion and the EU contribution to these projects amounted to €46.09 billion.

Participants’ costs and EU contribution were aggregated by participant’s country. For H2020, the data for the 37 countries, which Eurostat allows for comparison, cover 97% of the total cost of the participating beneficiaries as well as the same share of the EU contribution. In the case of FP7, this share is 96%.

Detailed statistics on the participation of individual countries in H2020 are presented by Frank (2021). For this reason, the purpose of this contribution is only to present to the reader the position of countries according to financial indicators converted into purchasing power standard. For this purpose, amounts have been calculated separately for coordinators and project participants, as ‘coordinators receive a bigger proportion of the project budget’ (Pazour et al. 2018, p. 48).

METHODOLOGY FOR CALCULATING PURCHASING POWER PARITY

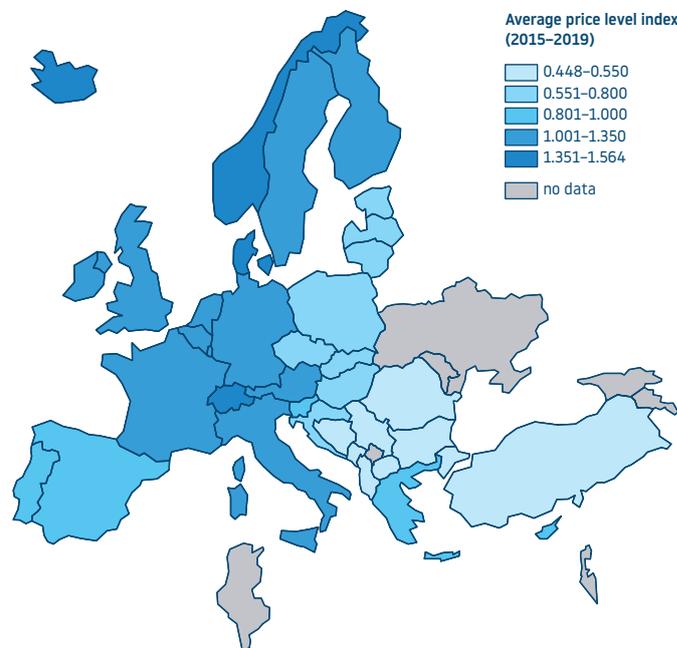
In order to quantify the costs of H2020 projects and the amount of EU support per country, the price level index i_t was first calculated for each country and for each year in the period 2014–2020, $i_t = P_e / P_p$, where P_e is GDP expressed in € and P_p is GDP expressed in PPS. For the sake of consistency of data and methodology, Eurostat was chosen as the data source, which as of 18 April 2022 had data for 27 Member States, selected associated countries and the United Kingdom⁵.

Eurostat does not have data for all associated countries for H2020 and FP7 – therefore Armenia, the Faroe Islands, Georgia, Israel, Kosovo, Moldova, Tunisia and Ukraine do not enter into the analysis presented. If the calculated price level index was higher than 1, these were countries with a higher price level (and a higher nominal GDP than real GDP). If the index was lower than 1, on the contrary, these were countries with a lower price level (and thus a lower nominal GDP than real GDP).

The time series obtained in this way was balanced using the method of simple three-member moving averages, $\bar{x}_t = (i_{t-1} + i_t + i_{t+1}) / n$, where i_t are the price level indices for individual years and n is the number of evaluated years. As a result, the indices for 2014 and 2020, respectively 2007 and 2013 were omitted. Subsequently, the simple three-member moving averages yielded the average value of the price level index for the period 2015–2019 and 2008–2012, that is $\bar{i} = (\sum \bar{x}_t) / n$, for each country. The nominal amounts of the total cost of projects and EU support for each country were then divided by this value.

For example, the values of the price level index for the Czech Republic in the period 2014–2020 amounted to 0.64–0.73, the average value of \bar{i} for the whole period was 0.69. By comparison, in Denmark, in the same period, the index was 1.33–1.37, while the average value of \bar{i} over the whole period was 1.35 (Cartogram 1). If the total cost of the beneficiaries’ participations in H2020 for the Czech Republic is €591 million and the EU contribution is €497 million, then in purchasing power parity they amount to 857 million PPS and 720 million PPS respectively (Figure 2).

CARTOGRAM 1: COMPARISON OF EU COUNTRIES AND ASSOCIATED COUNTRIES FOR THE H2020 PROGRAMME ACCORDING TO THE AVERAGE VALUE OF THE \bar{i} PRICE LEVEL INDEX FOR THE PERIOD 2015–2019. SOURCE: EUROSTAT, OWN CALCULATION BY CAS TC

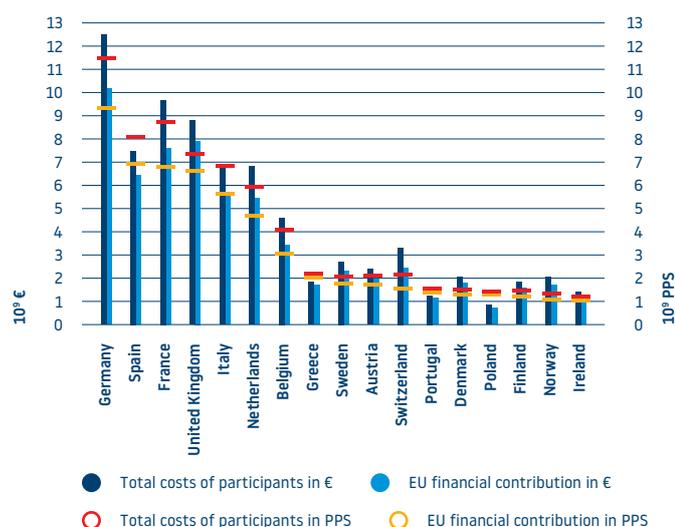


H2020: “EVERYTHING IS SOMEWHAT DIFFERENT”

At the level of absolute amounts expressed in € and in PPS, the countries compared do not, with some exceptions, show significant differences in their ranking (Figures 1 and 2). One of these exceptions is Spain, which ranks 4th in terms of nominal EU contribution to H2020, while in purchasing power standard it ranks 2nd, ahead of France and the United Kingdom. A similar statement applies to Poland (17th place in €, 14th place in PPS), Portugal (16th place in €, 12th place

in PPS) or Greece (13th place in €, 8th place in PPS). On the contrary, Switzerland, for example, has the 8th highest contribution of the EU in nominal terms due to its high price level, but it falls to the 11th position in PPS. The same also applies to Norway. The Czech Republic ranks 18th in both expressions of the EU contribution.

FIGURE 1: COMPARISON OF THE RANKING OF COUNTRIES BY TOTAL COST OF PARTICIPANTS AND BY EU CONTRIBUTION TO PARTICIPANTS IN H2020 IN NOMINAL TERMS IN € AND IN PPS. FIGURE 1 SHOWS COUNTRIES WITH AN EU CONTRIBUTION OF MORE THAN PPS 1 BILLION. SOURCES: ECORDA (17.05.2022), EUROSTAT, OWN CALCULATION BY CAS TC



Much more interesting is the conversion of the EU contribution into 1 participation of a given state or group of states (Cartogram 2). The average value of the total cost of the projects was €524 thousand per 1 participation in H2020, the average value of the EU contribution per 1 participation was €430 thousand. In this representation, the Czech Republic reported a total cost of €350 thousand per 1 participation and an EU contribution of €294 thousand per 1 participation. In the case of the EU contribution expressed in this way, related to 1 participation, the Czech Republic ranked 21st among the monitored countries and 3rd among the new EU member states (after Cyprus and Estonia). Poland and Slovenia also had similar values for the EU contribution per 1 participation.

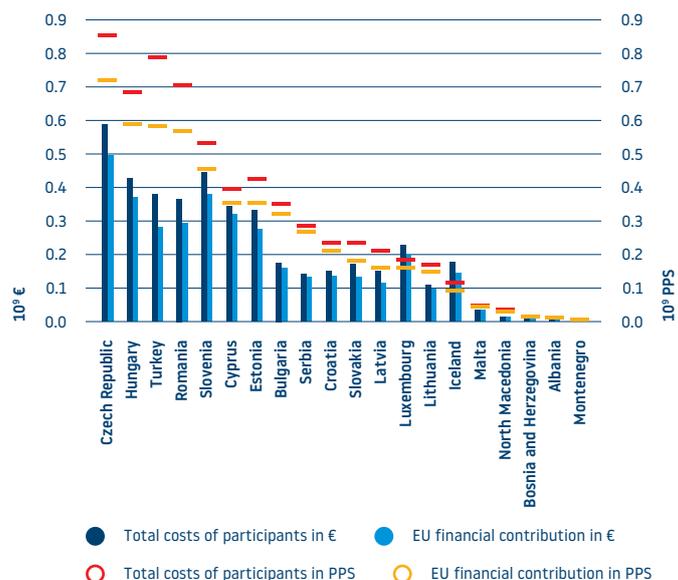
By contrast, Norway (€569,000), the Netherlands (€533,000), France (€527,000), Germany (€524,000) and Switzerland (€502,000) reported the highest values of the EU contribution per 1 participation.

If we express the value of the EU contribution to 1 participation in purchasing power standard, the ranking will change significantly, as many new EU Member States or countries associated with H2020 will come to the forefront. Turkey (with a value of $\bar{i} = 0.48$) with 501 thousand PPS per 1 participation and Serbia (with a value of $\bar{i} = 0.49$) with 489 thousand PPS per 1 participation, will rank 1st and 2nd. Poland is placed fourth ($\bar{i} = 0.59$; 477 thousand PPS/participation), the Czech Republic seventh ($\bar{i} = 0.69$; 426 thousand PPS/participation), Estonia eighth ($\bar{i} = 0.78$; 415 thousand PPS/participation) and Hungary tenth ($\bar{i} = 0.63$; 407 thousand PPS/participation). Thus, in purchasing power parity, these countries have EU contribution values per 1 participation similar to Germany ($\bar{i} = 1.09$; 482 thousand PPS/participation), France ($\bar{i} = 1.11$; 473 thousand PPS/participation) or the Netherlands ($\bar{i} = 1.14$; 466 thousand PPS/participation).

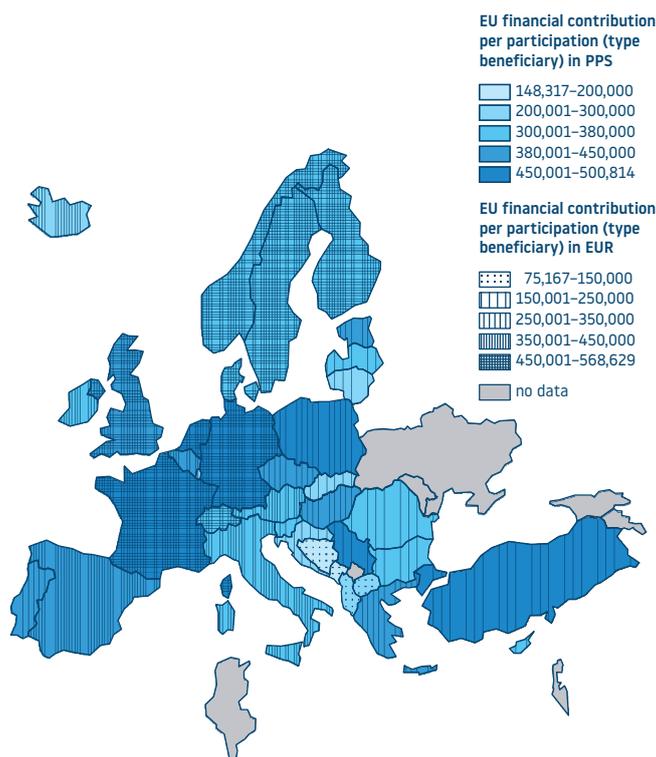
Despite the conversion to purchasing power parity, the associated countries of south-eastern Europe (Montenegro, Bosnia and Herzegovina, Albania, North Macedonia) maintain an unfavourable position. Of the new Member States this applies to Malta, Lithuania, Slovakia and Croatia. These countries report an EU contribution of less than 300 thousand PPS per 1 participation. Of the old Member States or developed associated countries, lower EU contribution values are those

with a very high price level – Iceland ($\bar{i} = 1.52$; 258 thousand PPS/participation), Luxembourg ($\bar{i} = 1.24$; 276 thousand PPS/participation), Switzerland ($\bar{i} = 1.56$; 321 thousand PPS/participation) and Denmark ($\bar{i} = 1.35$; 345 thousand PPS/participation).

FIGURE 2: COMPARISON OF THE RANKING OF COUNTRIES BY TOTAL COST OF PARTICIPANTS AND BY EU CONTRIBUTION TO PARTICIPANTS IN H2020 IN NOMINAL TERMS IN € AND IN PPS. FIGURE 2 SHOWS COUNTRIES WITH AN EU CONTRIBUTION OF LESS THAN PPS 1 BILLION. SOURCES: ECORDA (17.05.2022), EUROSTAT, OWN CALCULATION BY CAS TC



CARTOGRAM 2: COMPARISON OF EU COUNTRIES AND ASSOCIATED COUNTRIES ACCORDING TO THE AMOUNT OF EU CONTRIBUTION IN H2020 PER 1 PARTICIPATION IN € AND PPS. SOURCES: ECORDA (17.05.2022), EUROSTAT, OWN CALCULATION BY CAS TC



Even with the division of participations by role (participant vs. coordinator), the above picture is preserved, moreover, it is even more pronounced. In the case of coordinators, the EU contribution for 1 participation higher than 1 million PPS was reported by Poland, Bulgaria, Latvia and Serbia. However, the last three countries mentioned coordinated dozens of projects. The Czech Republic ranked 5th among the monitored countries. Its coordinators in the H2020 programme reported EU support for 1 participation of 962 thousand PPS – similar to Germany (926 thousand PPS/participation), the Netherlands (906 thousand PPS/participation), Belgium (898 thousand PPS/participation) or France (854 thousand PPS/participation). Similar values were also recorded in Estonia (905 thousand PPS/participation), Hungary (888 thousand PPS/participation), Turkey (872 thousand PPS/participation) and Slovakia (823 thousand PPS/participation).

For ordinary project participants, the highest value of the EU contribution in PPS per 1 participation was reported by Serbia (416 thousand PPS/participation) and Turkey (413 thousand PPS/participation), followed by Poland (384 thousand PPS/participation) and Romania (353 thousand PPS/participation). By comparison, the EU contribution per 1 participation in the H2020 programme was 370 thousand PPS in Germany and 355 thousand PPS in France. The Czech Republic placed seventh with 344 thousand PPS per 1 participation.

A BRIEF COMPARISON WITH FP7

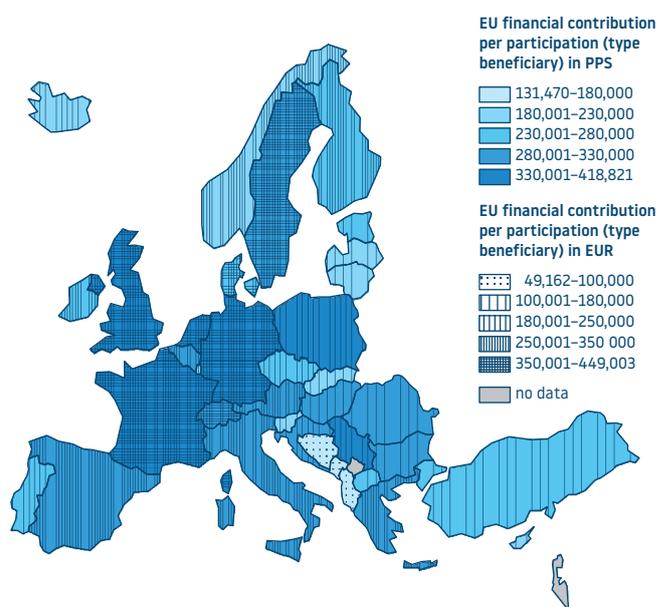
The ranking of countries according to the absolute amounts of the EU contribution expressed in € and PPS was essentially unchanged in FP7 and H2020, with a few exceptions. A significant positive exception was Spain (in € the shift from 6th place in FP7 to 4th place in H2020, in PPS the shift from 5th to 2nd place), followed by Portugal (in € the position remains, in PPS the shift from 15th to 12th place). Cyprus and Luxembourg also showed upward shifts in the rankings. On the other hand, significant negative exceptions were the United Kingdom (in € the position remains, in PPS a shift from 2nd place in FP7 to 4th place in H2020), Switzerland (in € the position remains, in PPS a shift from 8th to 11th place), from the new member countries Bulgaria (in € a shift from 23rd place to 26th place, in PPS a shift from 22nd to 25th place) and Hungary (in € and PPS a shift from 18th to 20th place). The Czech Republic maintains its position – in FP7 it received the 19th highest EU contribution nominally and in purchasing power parity, and the eighteenth in the H2020 programme.

If we convert the EU contribution into 1 participation, the ranking of countries in H2020 and FP7 is not stable. The average value of the total cost of FP7 projects was €473,000 per 1 participation, the average value of the EU contribution was €331,000 per 1 participation. In this statement, the Czech Republic reported a total cost of €333,000 per 1 participation (18th place) and an EU contribution of €197,000 per 1 participation (23rd place). Among the new EU member states, the Czech Republic was the first in the total cost of 1 participation, the fourth in the EU contribution to 1 participation (after Croatia, Cyprus and Poland, with Cyprus and Poland showing essentially the same values as the Czech Republic). The five countries with the highest values in € of EU contribution expressed per 1 participation are identical, with the exception of the United Kingdom and Norway in both FP7 and H2020.

When converting the EU contribution into 1 participation and purchasing power parity, the ranking of FP7 participating countries (Cartogram 3) is even more variable compared to H2020 (Cartogram 2). In the case of this indicator in H2020, the old Member States were represented 4 times in the top ten, while in FP7 5 times, plus Switzerland. For the new Member States, the position of Estonia (from 25th place in FP7 to 8th place in H2020), the Czech Republic (from 18th to 7th place) and Hungary (from 17th to 10th place) increased significantly in the EU contribution per 1 participation in terms of purchasing power parity. Of the associated countries, the same applies to Turkey (from 19th place in FP7 to 1st place in H2020). Serbia and Poland maintained their leading positions. On the other hand, Slovakia and Slovenia maintain their positions between 25th and 29th place in

both FP7 and H2020, as do Lithuania and Latvia (around 30th). On the contrary, Croatia and Bulgaria have fundamentally lost their positions – these countries have practically fallen through the entire ranking.

CARTOGRAM 3: COMPARISON OF EU COUNTRIES AND ASSOCIATED COUNTRIES ACCORDING TO THE AMOUNT OF EU CONTRIBUTION IN FP7 PER 1 PARTICIPATION IN € AND PPS. SOURCES: ECORDA (30.04.2021), EUROSTAT, OWN CALCULATION BY CAS TC



CONCLUSION

Given the different price levels in Europe, a significant difference in the way in which projects under the EU Framework Programmes for Research and Development are evaluated has been identified. The application of purchasing power parity can serve as an alternative view of how the Czech Republic is doing financially within these programmes. The example of the H2020 programme shows that financial indicators for the Czech Republic (and for a number of other new EU Member States) are not nearly as unfavourable as it seems when working only with nominal values. At the same time, it is possible to identify a positive trend in the growth of the number of participations and the acquisition of a higher amount of EU contribution at a lower price level in the Czech Republic and some of the new EU Member States.

The alternative view of the participation of the new member countries, including the Czech Republic, presented in this article thus raises a number of questions about the legitimacy of the demand by a number of representatives of these countries to equalize the level of personnel costs in FPs projects despite differences in countries' economic performance. Although the financial indicators presented in purchasing power parity can serve us well when comparing countries, at the same time it is necessary to respect the fact that they are more of "statistical constructs rather than precise measures" when working with them (European Commission 2012, p. 35). On the other hand, the reduction of distortions compared to nominal data, Eurostat's unifying calculation methodology and the key role of the purchasing power parity indicator within the framework of the financial relations of EU regional policy, has been regularly pointed out in the works, for example, of Mejstřík (2011, 2015), speak in favour of this approach.

When evaluating the participation of the Czech Republic in the FPs, it is also necessary to bear in mind that the purpose of participation in the FPs is not only to obtain funds per se or to remediate budgetary deficiencies in the regional, research and innovation policy of the

Czech Republic and the EU, but especially the international scientific and research cooperation necessary for solving challenges of a transnational nature and scope, including the accrual of scientific prestige resulting from it.

NOTES

¹eCorda – non-public database (full name External – Common Research Data Warehouse) managed by the Directorate-General for Research and Innovation of the European Commission (DG RTD). “This database in CSV format (from February 2021) is provided to selected groups of experts (EC employees, members of programme committees and authorized nationally nominated users of eCorda) usually 3 times a year in summary major editions and once each month in partial editions. The publication of data from this database is subject to the applicable ‘Confidentiality Rules for Framework Programme Data Stored in CORDA and eCorda’.

The eCorda database for H2020 exists in two forms – a database of grant agreements and participants (eCorda H2020 grant agreements and participants) and an eCorda database of project proposals and applicants. These two forms of database are independent of each other and the data in the database of project proposals and applicants are not retroactively modified according to reality, which may be the reason for a certain discrepancy of data in both databases.” (Frank 2021, p. 6). The basis for this contribution was the database of grant agreements and participants, which was made available by the EC on 17 May 2022.

²Horizon Dashboard – EC tool for internet interactive visualization of FP implementation data.

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard>

³Associated countries to FP — ‘third countries which have concluded an international agreement with the European Union as referred to in Article 7 of Regulation No 1291/2013 [Horizon 2020]. These countries participate in the programme under the same conditions as EU member states. Legal entities from the associated countries can participate in the H2020 programme under the same conditions as legal entities from EU member states’ (Frank 2021, pp. 10-11). At the time of writing, 16 countries have been associated – Iceland, Norway, Albania, Bosnia and Herzegovina, North Macedonia, Montenegro, Serbia, Turkey, Israel, Moldova, Switzerland, the Faroe Islands, Ukraine, Tunisia, Georgia, Armenia.

https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm

⁴The so-called old ones are those EU Member States that were members before 1 May 2004 (i.e. Germany, France, Italy, the Netherlands, Belgium, Luxembourg, Ireland, Denmark, Greece, Spain, Portugal, Austria, Sweden and Finland). The so-called new Member States (also called “EU-13”) are those Member States that joined the EU on 1 May 2004 (the Czech Republic, Slovakia, Poland, Hungary, Slovenia, Estonia, Latvia, Lithuania, Cyprus and Malta), on 1 January 2007 (Romania and Bulgaria) or on 1 July 2013 (Croatia).

⁵The United Kingdom became a third country on 1 February 2020 under the EU-UK Withdrawal Agreement, which assumed that legal entities established in the United Kingdom remained fully eligible to participate in and receive funding from Horizon 2020 until its

closure in 2020. For this reason, the UK is considered an EU Member State in the eCorda database for the H2020 programme and is reported as such in all statistical surveys’ (Frank 2021, p. 11).

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