POLICY ANSWERS

SERBIA'S ERA INTEGRATION

An update by POLICY ANSWERS

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Executive summary

Progress related to ERA integration was achieved since the establishment of the new ERA along the following aspects:

- Serbia continues to integrate into the new ERA through the implementation of a R&D institutional funding reform and the introduction of a number of policy measures aiming at creating a favourable environment for R&D in order to close the gap to the EU Member States' standards.
- Gross domestic expenditure on R&D (GERD) amounted to over 520 million euros in 2021, rising from 0.91% of GDP in 2020 to 0.99% in 2021.
- The total number of published papers is on the rise. In 2021, Serbia had 9,598 publications, significantly more than the other Western Balkans economies. With regard to the number of citations, the performance is 43.6% of the EU average.
- The active population in the age group 25 to 64 years that is classified as *Human Resources in* Science and Technology (HRST) (i.e. having successfully completed an education at the third level or being employed in science and technology) as a percentage of total active population aged 25 to 64 years old is increasing and in 2021 was 36.4%, but still far from the EU27 average (48.6%).
- Serbia has made significant progress in establishing a system for the further development of deep-tech. Some important measures include: a new Law on Digital Assets, enabling further growth of the companies using blockchain technologies; a number of tax incentive schemes for start-ups and high-tech companies; introduction of new master and PhD programme in the area of artificial intelligence as well as two infrastructure investments: establishment of the Institute for Artificial Intelligence and government's approval of the future investments in Bio4Campus project.
- Serbia adopted a new Law on Gender Equality in May 2021, which has been aligned with the EU acquis. Since 2015, the percentage of female graduates with core Science, Technology, Engineering and Mathematics (STEM) degrees has steadily been growing from 39.23% to 42.56% in 2020. The overall percentage of female researchers in Serbia grew in the last years and has reached 52.3% in 2021.
- There has been a noticeable increase of the total share of open access publications as a result of a national Open Science Policy and implemented policy measures in this field.
- National research and innovation infrastructures have improved by investing significant budgets in the establishment of four Science and Technology Parks, but also the restructuring of existing and investment in new research infrastructures.

Challenges for further ERA integration:

- The implementation of strategic policy documents and action plans remains inefficient. The Government of Serbia needs to improve implementation, monitoring and evaluation of the strategies.
- Serbian institutions participate in only 7% of ESFRI Landmarks and 9% of ESFRI Projects. Increased membership in current and new ESFRI research infrastructures needs to be considered in the next period.
- The National Research Infrastructure Roadmap has expired in 2020 with no new updated version until 2022. The new roadmap is necessary to assist the relevant Ministry of Science, Technological Development and Innovation to invest in R&D in the most effective and optimal manner.
- Improvements are needed to increase international mobility and an open labour market for researchers. Currently, only CEEPUS (Central European Exchange Programme for University Studies) as a Central European student and academic staff exchange programme provides opportunities for students and teachers to study or work in Serbia.

- Despite an evident increase of GERD in 2021, the business expenditures on R&D remain significantly below the EU average. Recently introduced R&D tax incentives need to be promoted in larger scales across the economy in order to increase the investment of the business sector in R&D.
- To speed up the integration into the European Research Area (ERA), the cooperation between science and industry should be significantly improved. Currently, this cooperation is still in the infancy phase while investment in R&D is largely dominated by the public sector.
- Technology transfer is at a low level due to the lack of adequate programmes to encourage cooperation between science and industry. It is necessary to introduce new support programmes for technology transfer.
- The number of Patent Cooperation Treaty (PCT) patent applications filed from Serbia remains low with a decreasing trend in the period 2018-2020. The Ministry of Science, Technological Development and Innovation should consider changing the regulations for the evaluation of scientific research work. This regulation should be adopted to encourage researchers to apply for patents.
- The concept of Responsible Research and Innovation (RRI) is still not widely spread in Serbia. It should be integrated into governance of the R&D system in Serbia.
- Long range planning of development of the R&D system should be based on wide consultations between all quadruple helix stakeholders, using the foresight methodology and the Entrepreneurial Discovery Process as permanent activities towards Smart Specialisation of the economy and society both at regional and national level.

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4S	Smart Specialisation Strategy of the Republic of Serbia
AI	Artificial Intelligence
CEESDA	Consortium of European Social Science Data Archives
CERN	European Organisation for Nuclear Research
DARIAH	Digital Research Infrastructure for the Arts and Humanities
DCS	Data Centre Serbia for Social Sciences
EC	European Commission
EDP	Entrepreneurial Discovery Process
EIS	European Innovation Scoreboard
EIT	European Institute of Innovation and Technology
ERA	European Research Area
ESFRI	European Strategic Forum for Research Infrastructure
ESS	European Social Survey
EU	European Union
EUSAIR	EU Strategy for the Adriatic-Ionian Region
EUSDR	EU Strategy for the Danube Region
GBARD	Government Budget Allocations for R&D
GERD	Gross Expenditure on Research and Development
HERD	Higher Education Research and Development
HRST	Human Resources in Science and Technology
IF	Innovation Fund of the Republic of Serbia
KIC	Knowledge and Innovation Communities
MCCA	Marie Curie Alumni Association
MSCA	Marie Skłodowska-Curie Actions
MSTDI	Ministry of Science, Technological Development and Innovation
PCT	Patent Cooperation Treaty
RDI	Research and Development Institutions
ROARMAP	Registry of Open Access Repository Mandates and Policies
RRI	Responsible Research and Innovation
S3	Smart Specialisation Strategy
SAIGE	Serbia Accelerating Innovation and Growth Entrepreneurship

SEEDS	South-Eastern European Data Services
SME	small and medium sized enterprises
STEM	Science, Technology, Engineering and Mathematics
STI	Science, Technology and Innovation
STP	Science and Technology Park
WB	Western Balkans
WoS	Web of Science

1. National measures in support of the Horizon Europe association: achievements and challenges by ERA priority

1.1 ERA Priority 1: More effective national research systems

After the Serbian parliament appointed a new government in October 2022, it was decided to split the existing Ministry of Education, Science and Technological Development into two separate authorities: the Ministry of Education and the Ministry of Science, Technological Development and Innovation (MSTDI), the latter overseeing the R&D and innovation sectors. The new MSTDI is expected to put much more emphasis on R&D and to further improve R&D performance at both national and international level.

Integration into the European Research Area (ERA) is one of the strategic directions of the research and innovation (R&I) policy in Serbia. The Strategy for Scientific and Technological Development of the Republic of Serbia for the period from 2021 to 2025 "Power of knowledge" represents the national roadmap for integration into the ERA - the ERA Roadmap.

The MSTDI continues to coordinate the research sector reforms within the project “Serbia Accelerating Innovation and Growth Entrepreneurship (SAIGE)” being implemented in the period 2019-2024. The total value of the SAIGE is 84.5 million euros, financed with a World Bank loan (43 million euros) and IPA 2019 (41.5 million euros). Within the project’s sub-component “R&D Institutes (RDIs) Reforms”, SAIGE supports the design and implementation of institutional transformation plans for selected RDIs. By the end of November 2022, 18 RDIs have entered the transformation plan reforms. The SAIGE provides incentives, financial and technical support to the selected RDIs that have opted to increase excellence and relevance of their research, strengthen their management capacities and perform institutional transformation.

Concerning research excellence and the most prestigious grants awarded by the European Commission (EC), following two ERC grants awarded to Serbian researchers in 2014 and 2016, a Serbian researcher has received an ERC grant worth 1.5 million euros for a project in the field of testing high-temperature superconductors and other open questions of modern physics in November 2022. While the total number of Serbian ERC grants is far below the level of the most developed EU Member States, it is important to note that there are also big differences between EU Member States. While Germany and France had a total of 1,642 and 1,275 ERC grants respectively, other EU Member States have received significantly fewer ERC grants: Romania (14), Croatia (8) and Bulgaria (3). Serbia is the only Western Balkans (WB) economy that has received grants in this programme of research excellence.

Research institutions from Serbia continue to participate in Marie Skłodowska-Curie actions (MSCA) within the Horizon Europe Programme, with 39 projects. In the previous European Framework Programme Horizon 2020, institutions from Serbia have been involved in an average of 6.6 projects per year in the period 2014-2020. Within Horizon Europe, 12 projects with Serbian participation were approved in 2022, indicating increased participation of researchers in this Excellence Science Programme. Serbia is also a member of the Marie Curie Alumni Association (MCAA) within the Western Balkans Chapter that aims at connecting MSCA fellows and alumni from the WB.

According to the *Scimago* database, the number of published Serbian papers continuously grows. In 2021, Serbia had 9,598 publications, which is significantly more than other WB economies. According to the European Innovation Scoreboard (EIS) 2022 and the indicator “the total number of scientific publications among the top 10% most cited publications worldwide”, Serbia achieves a performance of 43.6% relative to the EU average. While it is still far behind the EU standard,

this gap has become smaller over the last few years since this performance in Serbia increased by 14.6% points, while it has decreased in the EU by 3.8% points in the period 2015-2022.

The total number of Patent Cooperation Treaty (PCT) patent applications in Serbia continues to be modest. According to the data provided by the Intellectual Property Office of the Republic of Serbia, the average number of PCT patent applications in the period 2010-2020 was 39 per year, with a minimum of 21 PCT patent applications in 2011 and a maximum of 53 in 2019. The latest available statistics are from 2020 where 46 PCT patents were applied.

The Gross Domestic Expenditure on R&D (GERD) amounted to over 520 million euros in 2021, which is almost 1% (0.99%) as a share of GDP. This represents an increase of 8.8 percentage points compared to the previous year, but it is still significantly behind the EU27 average of 2.31% in 2020. Serbia's Government budget allocations for R&D (GBARD) as a share of GDP was 0.42% for 2021, compared to the EU27 benchmark of 1.46% in 2021.

According to the EIS, Serbia is seen as an emerging innovator with a performance at 61.8% of the EU average. While most individual indicators remained relatively low compared to the EU average, the overall performance gap to the EU is becoming smaller and, at 15.6% points, is higher than that of the EU (9.9% points).

Serbia is currently in the process of changing its institutional funding for R&D. Its aim is to set up institutional funding that would enable stability and development of research institutions, as well as project funding, which includes support for the best researchers through competitive projects. While the adoption of the Law on the Science Fund at the end of 2018 was a prerequisite and a starting point, the establishment of the Science Fund in 2019 and the start of its operation represents a significant step towards setting up competitive project financing. After its establishment, the Science Fund has continued to provide support for the development of scientific and research activities.

By September 2022, the Science Fund has granted 282 research projects within five programmes; a total of 43.9 million euros have been disbursed for approved projects. In addition, three public calls have been launched in 2022 and the applications are still under evaluation: IDENTITIES, PRISMA and the Green Program of Cooperation between Science and Industry. The programme IDENTITIES is aiming at supporting the development of scientific research in the field of social sciences and humanities, providing a total budget of 2 million euros. The objective of the programme PRISMA is to support research projects based on outstanding ideas that in the future may have a significant impact on the development of science and research, as well as society as a whole. The budget of the PRISMA programme is 25 million euros; these funds were provided from the budget of the Republic of Serbia, IPA funds of the European Union and through the SAIGE project. The Green Program of Cooperation between Science and Industry will provide support to researchers in Serbia to conduct applied research that will contribute to the reduction of environmental pollution. It will support sustainable development by solving problems that mitigate to environmental pollution, loss of biodiversity, unsustainable use of natural resources, etc. The total budget of the programme is 3.5 million euros, and the funds were allocated from the budget of the Republic of Serbia.

The implementation of the Smart Specialisation Strategy (S3) has entered its second year. The development of a new Action Plan for the period 2023-2025 is under way and was supposed to be published by the end of February 2023 (not adopted at the time point of the finalisation of this report). The first monitoring report for the implementation of S3 in the period 2021-2022 is expected in mid-2023.

The implementation of the Strategy for the Development of Artificial Intelligence in the Republic of Serbia for the period 2020-2025 is also ongoing and the first monitoring report for the first two years of implementation is expected in mid-2023.

According to the National Statistical Office, the total number of researchers in Serbia in 2021 was 16,962 which represent a slight increase compared to 2020 (16,662). The number of researchers per thousand inhabitants is also constantly growing; in 2021 it was 2.48. Although

this is a positive trend, the comparative data shows that Serbia still lags far behind the EU average. According to the Eurostat data, the active population in the age group 25 64 years that is classified as HRST (i.e. having successfully completed an education at the third level or being employed in science and technology) as a percentage of total active population aged 25 to 64 years in 2021 was 36.4%, but still far from EU27 average (48.6%).

1.2 ERA Priority 2a: Optimal transnational cooperation and competition

International cooperation takes place within the framework of bilateral and a number of multilateral projects and actions, but also through individual cooperation between researchers. Serbia continues to be active and successful in the EU research and innovation framework programme Horizon Europe and the European Institute of Innovation and Technology (EIT) as well as in EUREKA, COST, and the NATO Science and Peace for Security Programme (SPS Programme). Serbia also participates in the following initiatives: Digital Agenda Observatory; Western Balkan Regional R&D Strategy for Innovation; Central European Initiative; EU Strategy for Danube Region and Open Balkan Initiative.

Serbia has developed a remarkable network of researchers within the COST programme, established a procedure for joining new actions, and realised its potential through the national scientific programme. The participation of researchers from Serbia in the total number of ongoing COST Actions is constantly growing. In 2012, researchers from Serbia participated in 50% of the COST Actions (150 out of 301 actions), while in 2020 the participation share was 92.8% (researchers participated in 270 Actions out of 291). The latest available data for 2021 shows that out of 236 ongoing Actions, researchers from Serbia participated in 220 actions (93.2%). The total costs of Serbian researchers' networking activities financed by COST are constantly increasing, both in absolute numbers (in 2019 they amounted to 1.13 million euros) and in the number of percentages of participation.

Serbia has been actively participating in the EUREKA programme since 2002. By the end of 2019, 85 EUREKA projects with Serbian participation have been successfully completed, in which 12 large companies, 72 small and medium-sized enterprises, 18 institutes and 79 faculties participated, with a private and public sector investment of 217.39 million euros. The largest number of projects with Serbian participation was implemented in the field of information technologies (31), followed by new materials (16) and medical and biotechnologies (14). During 2021, 11 ongoing projects were financed from the budget and 1 self-financing project was ongoing. During the same year, a new Act on the conditions and methods of financing the realisation of national projects within the EUREKA Programme was adopted. In accordance with the new Act, a new public call within the EUREKA programme was published in 2021, and 9 Serbian project applications were submitted.

Serbia has been actively engaged within the framework of the NATO SPS Programme since 2007. Serbian scientists and scientific research organisations participate in 8 ongoing activities of the SPS Programme: 5 multi-year projects and 3 advanced research projects. The primary areas for cooperation include: Defence against nuclear, radiological, biological and chemical agents, counter-terrorism, security-related advanced technology, and energy and environmental security.

Serbia is participating in the EIT Knowledge and Innovation Communities (KIC). In 2022, Serbia and the EIT signed a Letter of Intent on jointly establishing an EIT Community Hub in Serbia under the Regional Innovation Scheme. The EIT Community RIS Hub will promote the activities of the EIT and opportunities for cooperation in the field of innovation, entrepreneurship and technology, providing members of the Serbian innovation ecosystem with access to the whole EIT Community.

Serbia is currently actively participating in the implementation of two macro-regional strategies: EU Strategy for the Danube Region (EUSDR) and EU Strategy for the Adriatic-Ionian Region

(EUSAIR). Within the EUSDR, Serbia is co-coordinating Priority Area 7 (Knowledge Society) and Priority Area 1b (Rail-Road-Air Mobility). The PA7 aims at: 1) better linking education and research policies, 2) increasing investments and 3) better coordination of national, regional and EU funds in order to stimulate excellence in R&D and develop and implement strategies to improve the provision and uptake of ICT. It is coordinated by Slovakia and Serbia, with the involvement of a wide network of key stakeholders. The most important achievements of PA7 include initiation of the Multilateral Call on Scientific and Technological Cooperation in the Danube Region (3 editions launched so far); support to policy making by publishing policy studies (tackling participation of Danube Region researchers in Horizon 2020, S3, evaluation of knowledge society, etc.); fostering S3 processes in the region; supporting cooperation across macro-regions focused on digital education. In the period 2023-2028, PA7 will be focused on support to policy development and policy initiatives, support to the ongoing projects and development of new ones and enhancing cooperation between core stakeholders of the Priority Area.

As part of the implementation of the EUSAIR, Serbia is currently coordinating one of the thematic priorities "Connecting the Region", together with Italy, with a focus on achieving goals in the fields of transport and energy.

In addition, Serbia is actively involved in the implementation of the EU's Western Balkans Agenda on Innovation, Research, Education, Culture, Youth and Sport.

According to the Web of Science (WoS), the number of co-publications with ERA partners has been relatively constant in the last few years. The total number of co-publications per 1,000 researchers in 2021 was 233.2, which is similar to previous years.

In 2021, the government budget allocations for R&D (GBARD) were 224 million euros, showing an increase of 8.7 million euros compared to 2020 (Statistical Office of the Republic of Serbia). The total GBARD is equivalent to 0.42% of GDP compared to 0.75% of GDP of the EU's average.

1.3 ERA Priority 2b: Make optimal use of public investments in research infrastructures

In terms of a national strategic framework, a national Roadmap for Research Infrastructures was adopted in December 2018, in line with the Action Plan for the implementation of measures to achieve the Roadmap's goals by the end of 2020. The updated document was supposed to be published in 2021. However, most of the measures have not been implemented and the updated Roadmap has not been published yet.

Serbia is active in the European Strategic Forum for Research Infrastructure (ESFRI). In 2021, Serbia participated in 7% of ESFRI Landmarks (institutions from Serbia are partners in 3 out of 41 ESFRI Landmarks) and in 9% of developing research infrastructure projects (institutions from Serbia are partners in 2 out of 22 ESFRI projects).

After being an Associate Member of CERN (European Organisation for Nuclear Research) since 15 March 2012, Serbia became CERN's 23rd Member State on 24 March 2019. Serbia is the first economy of the Western Balkans and one of 4 non-EU Member States (together with Switzerland, Israel and Norway) being member of this international scientific organisation. As a full member, Serbia participates in CERN's project of high importance: High-Luminosity Large Hadron Collider (HL-LHC), an ESFRI Landmark. The HL-LHC is currently in its construction phase (2017-2025) and it is envisaged that it starts operating in 2026.

Serbia is active in three Research Infrastructures in the ESFRI area of Social and Cultural Innovation: the Council of European Social Science Data Archives (CESSDA), the European Social Survey (ESS-ERIC) and the Digital Research Infrastructure for the Arts and Humanities (DARIAH). The Data Centre Serbia for Social Sciences (DCS) is an organisational unit of the Institute of Economic Sciences in Belgrade. Supported from 2012 by international funds through projects such as the South-Eastern European Data Services (SEEDS) project and CESSDA, DCS was formally

established in 2014. However, it is still in the infant phase. Within ESFRI's Research Infrastructures in the area of Environment, Serbia is a member of one distributed Research Infrastructure: eLTER (Long-Term Ecosystem Research in Europe). By joining eLTER, Serbia is expected to improve knowledge of the structure and functions of ecosystems and its long-term response to environmental, societal and economic drivers.

After digitalisation has been declared one of the Government's priorities, the Office for IT and e-Government has established the State Data Centre in Kragujevac, which is one of the most modern in the region in terms of technology and security standards. It is 5,000 square metres big and the cost of the project was 30 million euros. Furthermore, in the last few years the Government of the Republic of Serbia invested a significant amount of funds in the construction of science and technology parks (STPs), new research faculty buildings and the modernisation of laboratories. The STP Belgrade has successfully started its operations in 2015. Following this successful example, almost 39 million euros were invested in the construction and reconstruction of STPs in other regional centres of Serbia: Novi Sad, Niš and Čačak, which started their operation in 2020. There is also an intention to further expand the network of STPs. A total of 144 companies operate within the STP network in the Republic of Serbia, out of which 74 are start-ups and 70 are high-tech companies, with a total of 1,295 employees.

The project ANTARES (2017-2024) is aiming at evolving the Biosense Institute into a European Centre of Excellence for advanced technologies in sustainable agriculture; it remains a project of strategic importance for the Government of Serbia. A total of 14 million euros will be invested in this project, out of a total of 34 million euros which is the value of the entire project. ANTARES is the only example of a Teaming for Excellence Projects in the Western Balkans. Construction work on the new infrastructure officially started in May 2021.

In addition, 5 million euros were invested in the construction of the Verrocchio Centre of the Institute of Physics in Belgrade. The aim of this project is to connect existing expertise in the field of supercomputing in cooperation with the world's leading research infrastructures. However, the construction works are largely behind the original plan (due to be completed by the end of 2020) and are still ongoing.

The Government of Serbia has taken preparatory actions for the construction of a new bioeconomy hub in Europe - BIO4 Campus, a multidisciplinary research infrastructure for life sciences. Preparations are already underway, and a detailed regulation plan is being drafted. The BIO4 Campus will occupy almost 20 hectares of land, focusing on four key topics: Biomedicine, Biotechnology, Bioinformatics and Biodiversity. It will gather nine scientific institutes and five faculties from the University of Belgrade:

- 9 scientific institutes: Institute for Molecular Genetics and Genetic Engineering; Institute for Artificial Intelligence; Centre for Sustainable Management of Bioresources and Natural Products of the Institute for Biological Research "Sinisa Stankovic"; Institute for Medical Research; Institute for Multidisciplinary Research; Bioinformatics and Nanotechnology of the Institute "Biosense"; Centre of Excellence in Cardiovascular Medicine of Institute for Cardiovascular Diseases Dedinje; Institute for Appliance of Nuclear Energy; Institute of Chemistry, Technology and Metallurgy.
- 5 faculties from the University of Belgrade: Faculty of Pharmacy; Faculty of Biology; Agrifood-biotech centre from the Faculty of Agriculture; Translation centre from the Faculty of Medicine Biochemical Engineering, and Biotechnology of the Faculty of Technology and Metallurgy.

By November 2022, institutions from Serbia have participated in 30 research projects within Horizon Europe's thematic priority "Research Infrastructures", receiving 4.7 million euros of EC's contribution. This makes Serbia the most successful economy in the Western Balkans, given that institutions from North Macedonia have participated in a total of 17 projects, while other economies are significantly below these figures.

While the Western Balkans are still in the early stages of developing its deep-tech and start-up ecosystems, Serbia could be labelled as a frontrunner in this area. According to the Start-up Genome's 2022-report, Serbia has developed into one of the top locations for R&D and blockchain-based product development. This has been recognised by global leaders, with local startups attracting more than €123 million in investment since 2021. Various government efforts and policy instruments have played a significant role in this process. The Government of Serbia has invested significant efforts in setting up a favourable legal system, introducing incentives and investing in infrastructure for the further development of deep-tech in Serbia. A new Law on Digital Assets, adopted in December 2020, recognises virtual currency and digital tokens as legal digital assets, enabling the further growth of blockchain technologies and creating new financing options for start-ups. A number of tax incentive schemes have been introduced to establish a favourable start-up environment such as: IP box (only 3% corporate income tax for revenues from intellectual property developed in Serbia); R&D tax incentives; salary tax exemption for start-up founders and tax credit for investing in start-ups. Furthermore, the education system has been modernised by introducing Artificial Intelligence (AI) masters and PhD programmes, and boosting AI talent through retraining workers in AI skills. In parallel, the government has worked on ethics issues through creating a framework for establishing ethical AI applications.

Regarding the further advancement in this field, two infrastructure investments that will enable further growth of deep-tech in Serbia should be highlighted: 1) The establishment of the Institute for Artificial Intelligence in 2021 and 2) BIO4 Campus, labelled by the Government as a new Biomedical Hub in Europe (see above). The Institute for Artificial Intelligence will build further on the skills of the existing IT talent pool in Serbia.

1.4 ERA Priority 3: An open labour market for researchers

The share of foreign students studying in Serbia is 0.68%. The majority of the foreign come from Bosnia and Herzegovina and Montenegro, accounting for over 83% of the total number of foreign students. The total share of foreign students with citizenship of an EU Member State amounts to only 3.44%. Considering that the Ministry of Education does not provide any grants or programmes to attract foreign researchers and students to study or work in Serbia, these low figures are not surprising. According to the European Innovation Scoreboard (2022), Serbia was a host to 7.3% of foreign doctoral students as a percentage of all doctorate students in 2020. This performance is only at 36.3% of the EU average.

The European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers are very important for the research community in Serbia. So far, the following institutions from Serbia endorsed the Charter & Code principles: The University of Belgrade, the University of Niš, the University of Novi Sad, the University of Kragujevac, the Belgrade Metropolitan University, the Institute of Physics and the Institute of Field and Vegetable Crops from Novi Sad.

The online portal: "Study in Serbia" (www.studyinserbia.rs) serves as a database of learning opportunities in Serbia for foreign students. It allows foreign students interested in studying in Serbia through the Erasmus+ programme with an opportunity to find courses offered in foreign languages, as well as courses which provide additional opportunities for exchange students, such as consultations in English or language classes. The platform provides data on accredited institutions which are eligible for participation in Erasmus+ projects in line with the Agreement for the participation of Serbia in the Erasmus+ programme and the Stabilisation and Association Agreement.

With regards to researcher's posts advertised through the EURAXESS job portal, there is no central information available on how job offers are published. According to the situation in December 2022, 14 positions advertised on the EURAXESS job portal were coming from Serbia.

The national EURAXESS portal contains tools for researcher career development and recommendations for researcher career development policy. Services for researchers and scientific research organisations in the field of mobility and career development are provided by EURAXESS Service Centres and Centres for Career Development of Researchers. Since June 2017, the role of the EURAXESS Service Centre of the University of Belgrade has been taken over by the University Centre for Career Development and Student Counselling. This centre now has two additional roles: to provide support to mobile researchers and to take care of the career development of researchers.

1.5 ERA Priority 4: Gender equality and gender mainstreaming in research

Considering the strategic and legal framework related to gender equality in science and research, despite the existence of a solid legal framework, there is still room for improvement. The policy of equal opportunities is not consistently operationalised in the regulations. There is a lack of specific measures aimed at overcoming gender inequalities in science. This is particularly evident in the policies related to the career and advancement of female scientists, gender balance in research teams, management and supervisory bodies, as well as in the integration of the gender dimension into the contents of the research. Within the Strategy for Scientific and Technological Development of the Republic of Serbia (2021-2025), gender equality has not been a focus in neither the defined goals nor in the policy measures.

Serbia adopted a new Law on Gender Equality in May 2021, which has been aligned with the EU acquis. The amended legal act defines general and special measures in order to achieve and promote gender equality. 10 months after the implementation of the previous strategy, the Government of the Republic of Serbia adopted the new Strategy for Gender Equality for the period 2021-2030, accompanying the Action Plan for its implementation for the period 2022-2023. The evaluation of the previous strategy showed that important processes of promoting gender equality were initiated, but that uneven effects were achieved between different priority areas. The implementation was more effective in the areas of establishing policies, institutions, decision-making processes, budgeting, preventing and suppressing violence against women, and less effective in the areas of economic empowerment of women, improving the position of women from vulnerable groups, and gender-sensitive education.

After presenting the results of its first Gender Equality Index in 2016, making it the first non-EU Member State to produce an indicator-based assessment of how equal women and men are in the various fields of society, the Government of Serbia continued to present the results of this index in 2018 and 2021. The third index for the Republic of Serbia is 58 percentage points which represents an increase of 2.2 points in progress towards achieving gender equality compared to the previous index calculated in 2018, and an increase of 5.6 points compared to 2016. Compared to the index of the EU27 (67.4), Serbia still records lower index values, but the gap is narrowing.

There is still gender segregation in higher education. Data from the National Statistical Office shows that among graduates in 2021, 61.13% were female, which represents the continuation of the growth trend compared to 2020 (60.09%) and 2019 (58.83%). However, men still dominate in STEM fields (57.44%). They make up the majority in the fields of ICT (69.15%) and Engineering, Manufacturing and Construction (59.65%), while in Natural Sciences, Mathematics and Statistics women are more present (66.78%) than men. The share of women with a doctoral level qualification is higher than for men. In 2021, 55.51% of new PhD holders were women.

According to the National Statistical Office, the overall percentage of female researchers in Serbia in 2021 was 52.3%. There has been a noticeable increase in the number of female researchers in the past few years in all scientific fields. Data from 2021 show that the highest participation of female researchers is in Humanities (61.7%) and Medical and Health Sciences

(59.1%), and the lowest participation is in Engineering and Technology (40.8%), which is also the only scientific field in which women are less represented compared to men.

Serbia does not have concrete measures to support women in top-level positions in the R&D sector. The indicator "Share of women in Grade A positions in the Higher Education Sector" is not available for Serbia within the report She Figures (2021). According to the National Report on UNESCO Recommendation on Science and Scientific Researchers (2021), in 160 science and research organisations funded by the Ministry of Science, Technological Development and Innovation, men hold 116 leading positions, leaving only 44 to women. Furthermore, men are dominant among the members of the Serbian Academy of Science and Art, representing over 90% of all members in 2020. Since the establishment of the University of Belgrade until today, only two women have held the rector position.

According to the report She Figures (2021), the average proportion of women among authors of publications in all fields of R&D in Serbia for 2015-2019 was 0.37, which is above the European level average (0.3). Furthermore, the women to men ratio of authorships in all fields of R&D for national, international and intra-EU28 collaboration in the period 2015-2019 was higher than the EU average: the share of women in publications resulting from national collaboration was 0.45 in Serbia compared to 0.35 of the EU average; the share of women in publications resulting from intra-EU27 collaboration was 0.37 in Serbia compared to the EU average 0.29; the share of women in publications resulting from international collaboration was 0.33 in Serbia compared to the EU average 0.26.

1.6 ERA Priority 5a: Optimal circulation, access to and transfer of scientific knowledge including knowledge circulation

The public research conducted by public research institutes is mainly financed by government budget allocations (66.3%), while the share of public research financed by the private sector was only 0.5% in 2021.

According to the EIS (2022), the level of public-private co-publications in Serbia was at 54.1% of the EU average. However, performance has increased (43.8%-points) in the period 2015-2022 leading to a decreasing gap in relation to the EU. The share of business expenditure in R&D in total expenditure for R&D has been increasing to 0.45% of GDP in 2021, but is still far below the EU average of 1.5% in 2021.

The MSTDI continues to provide support for the development of research personnel. There are five programmes that are launched on a yearly basis: the Programme for providing scholarships and facilitating progress of talented students and young researchers; the Programme for the training of research personnel; the Programme to support the purchase of foreign scientific literature; the Programme to support issuing of scientific publications and organisation of scientific conferences; and the Programme for the co-financing of scientific and educational centres, organisations and associations.

Considering the composite indicators provided by renowned European and world organisations, Serbia usually ranks higher than other economies in the WB region, but often below the EU average. Serbia has significantly improved its innovation infrastructure in the last years.

The Cabinet of the Minister without Portfolio in charge of Innovation and Technological Development initiated the development of a network of regional innovation start-up centres across Serbia. The Ministry launched the Programme for the establishment of regional start-up centres in the period 2018-2020. As a result of this programme, nine regional start-up innovation centres were established throughout Serbia. This call was targeting local municipalities to establish start-up centres in cooperation with other business support organisations. Financing the newly established start-up centres has continued in 2021 aiming at providing support to the work of regional innovation start-up centres.

The Innovation Fund of the Republic of Serbia (IF) remains the key national institution for fostering links between science, technology and the economy, encouraging the development of innovative entrepreneurship. Since 2011, the IF invested 58.9 million euros through different support programmes. It supported the implementation of 530 research and innovation projects and granted 919 innovation vouchers. In the long run, the IF has the potential to have an impact across the key priority sectors of the Serbian economy. In the next period, intensive engagement of the IF and growth of activities to support innovative actors in the innovation ecosystem is expected. According to the Strategy of Scientific and Technological Development of Serbia (2021-2025), the annual funding capacity will increase by 1.7 million euros in 2022 and 2.56 million euros in 2023.

Knowledge and technology transfer activities in Serbia have been supported by the IF's Technology Transfer Programme. It is targeting researchers from research institutes and can be used for the development and testing of prototypes, protection of intellectual property, additional development of inventions and professional support for various aspects of commercialisation. As part of this programme, as of 2019, a proof of concept scheme is also available through which financial and business support is offered for testing ideas, hypotheses or assumptions, which, if proven technically feasible, would represent the basis for future commercial products. So far, 2.33 million euros have been invested within this programme.

In addition to the IF's programme, the SAIGE project – described below – also provides support in the area of technology transfer to 18 selected research institutes. Its support is mainly oriented towards increasing internal capacities for technology transfer as part of the transformation plans of the institutes.

1.7 ERA Priority 5b: Open Access

Significant progress has been made in the area of open science over the past several years. Participation in European projects and initiatives, especially Pasteur4OA and OpenAIRE, has played an important role in the process of drafting and adopting Open Access policies. The progress started in 2019, when the key principles of open science were embedded in the new Law on Science and Research, making Serbia the first WB economy to regulate this topic by law. The National Platform for Open Access, adopted by the Government in 2018, obliged universities and scientific research institutes to define and adopt institutional policies on open science within six months in accordance with the national regulation. In accordance with this recommendation, all state universities and seven research institutes have adopted appropriate policies, platforms and regulations related to the application of open science principles.

According to the Web of Science, the share of open access articles in Serbia published in the period 1996-2022 was 38.17%, which is higher than the EU average (34.1%). Looking at the level of open access from year to year, it appears to be increasing every year to date. The open access level in 2021 was 58.47% which represents a significant increase compared to 2018 (41.29%). This trend is in line with progress achieved by EU Member States that have had an open access level of 61.62% in 2021. Furthermore, the share of articles in Serbia labelled as "gold open access" (articles that are detected as freely available from the publisher) in 2021 was 41.48%, and the share of articles labelled as "green" open access (articles that can be retrieved from a repository) in 2021 was 32.87%.

With regards to locally published journals within the Serbian Citation Index, they are also strongly oriented towards open access: there are more than 400 open access journals and a growing number of open access monographs.

As part of its research funding programmes, the Science Fund of the Republic of Serbia provides financial support to researchers for publication costs associated with open access publishing. They also set binding Guidelines for the Provision of Open Access to published outputs that result

from their funding. The Data Management Plan is a mandatory part of any project application submitted to the Science Fund.

Within the Transformation Plan Programme, support to the selected research institutes within the SAIGE project will also include dedicated assistance in developing Data Management Plans and Open Access Policies within the research institutes.

Besides the Serbian Government's Open Access Policy, 18 Serbian research institutes have joined the Registry of Open Access Repository Mandates and Policies (ROARMAP); this means that researchers are requested to provide open access to their peer-review research articles.

There are two national portals related to open access that are updated on a regular basis:

- The National Open Data Portal (data.gov.rs) contains information about open data sets of state bodies of the Republic of Serbia, but also of all other subjects with data that meet the conditions to be open.
- The National Open Science Portal (open.ac.rs) contains all relevant information about open science. All researchers and stakeholders can be adequately and timely informed about open access, open data, alternative metrics and other important open science topics.

The University of Belgrade regularly organises Open Science Days with the aim of informing the local research community about open science principles and current international activities in this area.

1.8 ERA Priority 6: International cooperation

According to the WoS data, 25.31% of all papers published by Serbian researchers are co-authored with partners from EU Member States and 29.49% with ERA partners. Overall, 48.7% of research papers in the period 1996-2021 were published as a result of international collaboration. International collaboration has been on the rise in the last 5 years. A total of 44.4% of research papers were published in international collaboration in 2017, compared to 52.4% in 2021. However, Serbia still records lower percentages of international cooperation in publications compared to other Western Balkan economies.

The structure of the Serbian economy is dominated by small and medium-sized low-tech companies with limited engagement in R&D activities. One of the most important challenges facing the Serbian R&D system in the last decade relates to the low pace of the business sector in engaging in R&D activities. Private sector R&D is mainly performed by larger companies. Consequently, the share of the Higher Education Research and Development (HERD) funded by the business sector (1.7%) is significantly below the EU27 average (7.17%). According to the data provided by the National Statistical office, the share of medium and high technology products as part of product exports was 35.71% in 2021. Knowledge intensive services exports as percentage of total services exports in 2021 were 54.36%.

Serbia continues to support the mobility of researchers through active participation in bilateral cooperation programmes with EU Member States and other countries. More than 1,300 bilateral projects, including 1,000 with EU Member States, have been funded through public calls for proposals from 2010 to the end of 2020. Within bilateral scientific cooperation programmes, Serbia has cooperated with nine EU Member States:

- Austria - The implementation and financing of 27 approved projects for the period 2018-2020 has been extended until the end of 2021, due to the circumstances caused by the COVID-19 pandemic. For the new public call for the period 2022-2024, 53 project applications were submitted, out of which 52 passed the administrative check.
- Italy - A total of 37 projects have been funded. Currently, 12 projects are ongoing and extended until the end of 2022.

- Hungary - within 2 published calls, a total of 20 projects have been approved. The realisation of 10 bilateral projects for the period 1.10.2021 - 31.9.2023 is underway.
- Germany - within 12 published calls, a total of 178 projects have been financed by 2020. Based on the results of the public call from 2021, 10 projects were approved for financing in the new two-year period 2022-2023.
- Portugal - a total of 53 bilateral projects have been financed until 2020. Due to the circumstances caused by the COVID-19 pandemic, the implementation of 12 approved projects for the period 2020-2021 has been extended until the end of 2022.
- Slovenia - within 10 published calls, a total of 459 projects has been financed until 2020. The implementation of 50 approved projects for the period 2020-2021 has been extended until the end of 2022.
- Slovakia - within 7 published calls, a total of 106 projects has been financed by 2020. Within the new public call for the period 2022-2023, 53 applications were submitted, of which 17 were selected for funding in the period 2022-2023.
- France - A total of 9 calls were launched and 152 projects were approved for funding. The implementation of 20 approved projects for the period 2020-2021 has been extended until the end of 2022.
- Croatia - within the 5 published calls, a total of 161 projects have been financed by 2020 mainly in the areas of agriculture, food and environmental protection. The implementation of 42 ongoing projects was extended until the end of June 2022.

In addition to the cooperation with EU Member States, Serbia also has successful bilateral cooperation with China, India, the Republic of Belarus, and Turkey. The realisation of 6 strategic scientific research projects for the period 2021-2024 and 21 researcher mobility projects between the Republic of Serbia and the People's Republic of China for the period 2021-2023 is underway. In total, 43 bilateral projects with the Republic of Belarus were implemented by the end of 2021. Under the public call for co-financing projects of scientific and technological cooperation between the Republic of Serbia and the Republic of India, 146 projects were submitted, out of which 18 were approved for financing for the period 2022-24. The implementation of 10 bilateral projects for the period 2020-2023 between Serbia and Turkey is in progress.

Within the WB, Serbia has a bilateral scientific cooperation with Montenegro. So far, 65 bilateral projects have been financed and implemented by the end of 2021.

According to the data provided by the Serbian Intellectual Property Office, 13 (24.5%) PCT patent applications out of 53 were filed in cooperation with a partner country in 2019, most of them with EU Member States (20.8%). This percentage increased in 2020, when 22 (47.8%) PCT patent applications were filed in cooperation with a partner country, and 26.1% with EU Member States. Although these percentages are higher than the EU average (12.2% in 2019), they should be taken with caution due to the small absolute number of PCT patent applications and large percentage oscillations.

The improvement of international cooperation in the field of science and innovation and the strengthening of regional cooperation within the WB and the Danube region have been highlighted in the Strategy for Scientific and Technological Development for the period 2021–2025. Accordingly, the establishment of a coordinating body for international cooperation is foreseen within the implementation of this strategy.

2. Horizon Europe participation and financial contribution

Following successful participation in the Horizon 2020 Programme (2014-2020), Serbia has continued to be active in the Horizon Europe Programme (2021-2027). According to the data from November 2022, institutions from Serbia have already achieved a total number of 140 participations, signed 110 grants and received a total net EU contribution of 35.73 million euros in Horizon Europe. Out of the 140 participations, small and medium sized enterprises (SMEs) have taken part in 24 projects. Institutions from Serbia have submitted 889 proposals, out of which 667 were eligible for funding and 110 were funded (see Figure 1).

Figure 1: Data for signed grants up to 28/11/2022

Data for signed grants up to 28/11/2022

Note: Any discrepancies that might appear with respect to other data sources are mainly due to the following:
(i) The data include beneficiaries, third parties and partner organisations
(ii) Dates of data extraction might be different

Source: Horizon Europe Dashboard
Extraction date: 28/11/2022

Serbia	
Total number of participations	140
Total Net EU contribution	35.73 Mio. Euro
Number of applications	889
Number of EIC participations	0
Number of MSCA participations	0
Number of Seals of Excellence	0
Number of SME participations	24
Number of signed grants	110
Number of eligible proposals	667

Serbia's total ratio of applied and approved projects is significantly higher than the EU Member States average making Serbia the most successful economy in the Western Balkans.

Serbian participation is strongest in the thematic priority "Global Challenges and European Industrial Competitiveness" (Serbian institutions have participated in 79 projects, receiving a net EU contribution of 18.56 million euros) and "Widening Participation and Strengthening the European Research Area" (Serbian institutions participated in 32 projects, receiving a net EU contribution of 13.49 million euros) (see Figure 2).

Figure 2: Net EU contribution by thematic priority

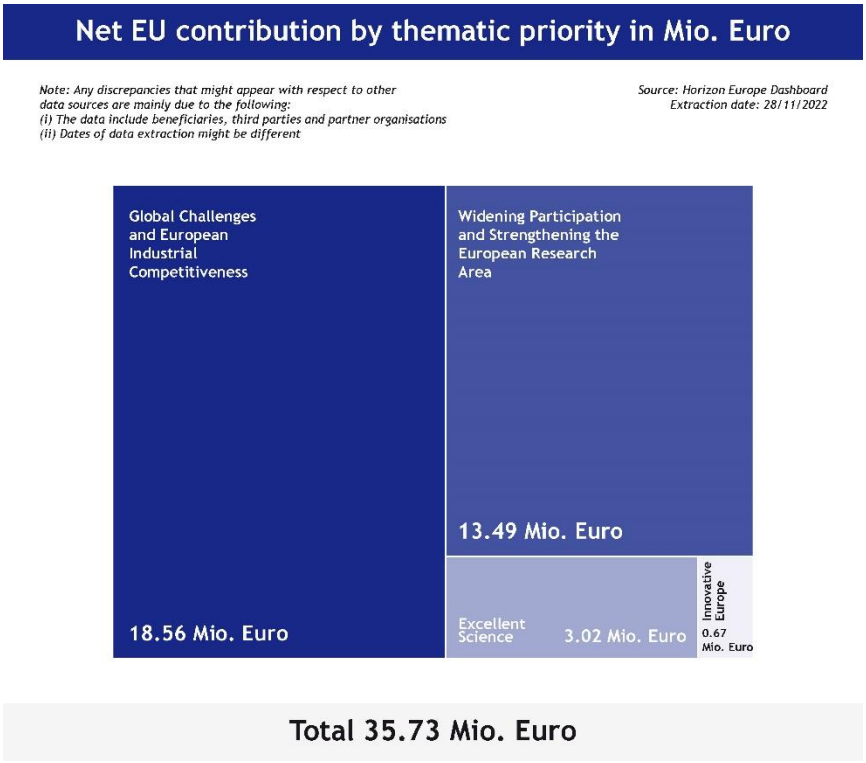
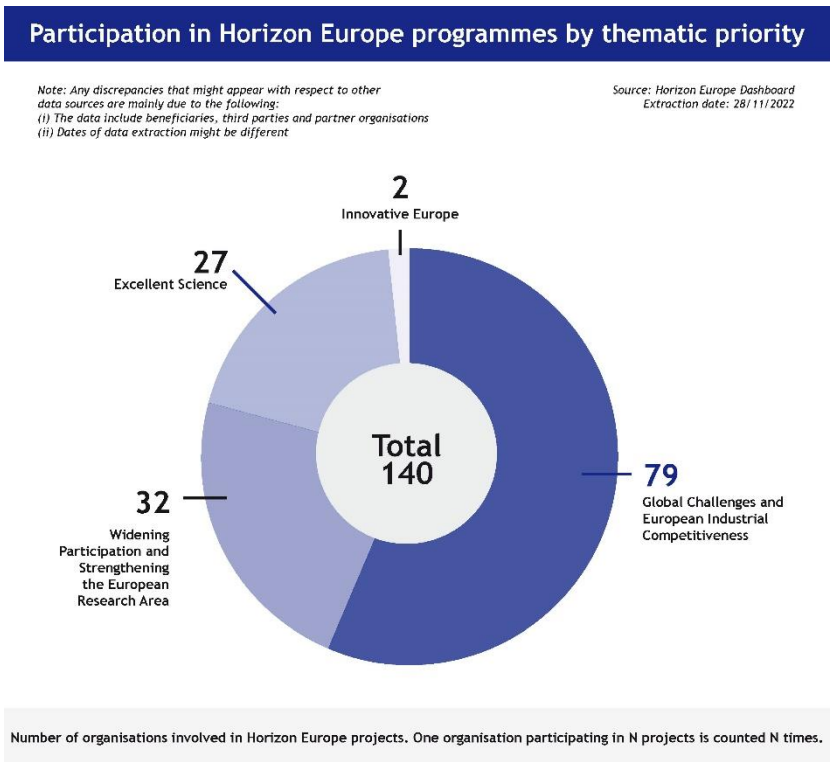
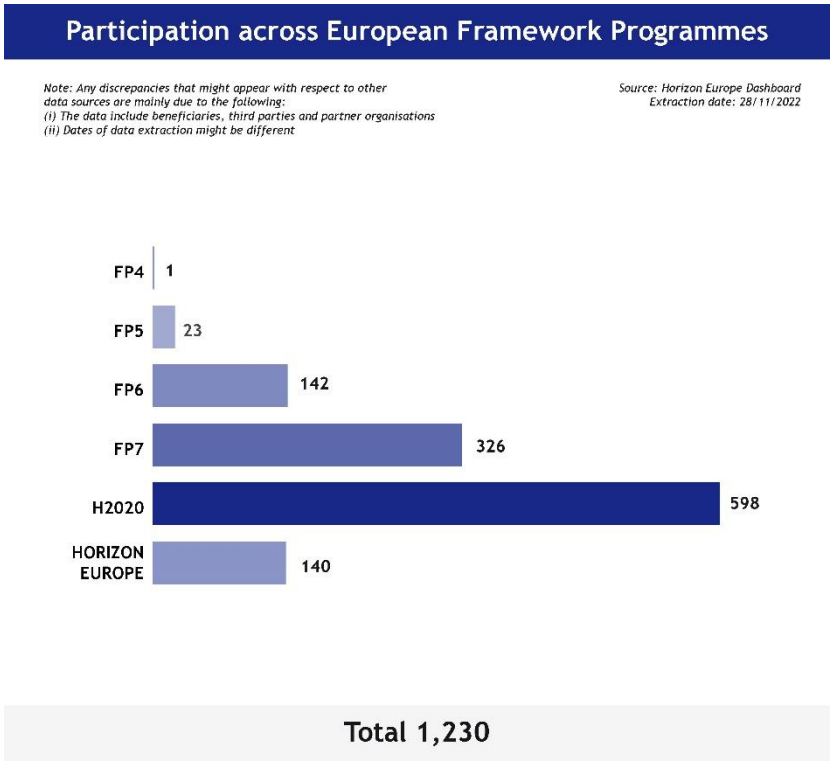


Figure 3: Participation in Horizon Europe programmes by thematic priority



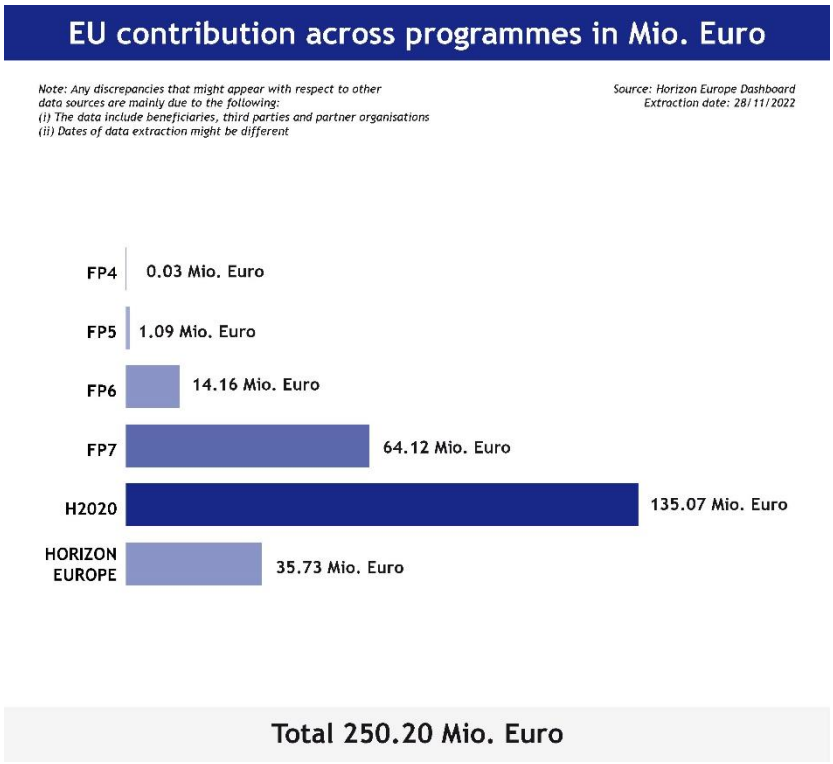
Starting with European Framework Programme 4, Serbia has recorded a significant increase in participation in the subsequent Framework Programmes (see Figure 4). Institutions from Serbia achieved 598 participations within Horizon 2020, which is a significant improvement compared to FP7 (326 participations), FP6 (142 participations) and FP5 (23 participations).

Figure 4: Participation across European Framework Programmes



In terms of approved funds, institutions from Serbia have doubled their participation in Horizon 2020 compared to FP7 (see Figure 5).

Figure 5: EU contribution across programmes in Mio. Euro



3. Smart Specialisation Strategy

The Smart Specialisation Strategy of the Republic of Serbia (4S) for the period 2020-2027 was adopted on February 27, 2020 ("Official Gazette of the RS", number 21 of March 6, 2020). It is a national level strategy and its design and process were initiated and coordinated by the former Ministry of Education, Science and Technological Development (from October 2022 on the new MSTDI). The identified four vertical priority areas of the 4S are: Food for Future, Information and Communication Technologies, Future Machines and Manufacturing Processes, and Creative Industries. The horizontal priority areas of the 4S are: Key enabling and emerging technologies and Energy-Efficient and Eco-Smart Solutions. Each vertical and horizontal priority area has sub-priorities.

The Action Plan for the Implementation of the 4S for the period 2021-2022 was adopted by the Government of Serbia on 20 April 2021. The delay in the development and adoption of the 4S Action Plan occurred due to the COVID-19 pandemic. The Action Plan comprises a comprehensive package of policy measures aiming at strengthening the knowledge-based economy. It has been designed for the period 2021-2022 to allow for timely review of policy instruments in light of future uncertainty about the potential impact of the global pandemic crisis.

The 4S and its Action Plan were designed with large-scale stakeholder engagement and visible implementation options, including financing and available programmes and policy instruments. An Entrepreneurial Discovery Process (EDP) had been successfully organised, including 178 conducted interviews with the business sector and 17 EDP workshops with a total number of 550 quadruple helix participants.

The policy measures under the Action Plan are largely supply-side, relating to financial, technological, human resources and infrastructure support to the business and research sectors in order to stimulate research and innovation activities, mostly through direct financing of R&D

costs. Accordingly, the main institution for the implementation of 4S is the Innovation Fund of the Republic of Serbia.

Currently, the implementation of the 4S is underway. Serbia does not have access to Structural Funds, so that most of the financing comes from national funds and partly from IPA and donor organisations. About 150.8 million euros were foreseen for the implementation of the Action Plan. According to the available data, it is estimated that more than 110 million euros have already been invested in the first two years.

As the Action Plan has expired at the end of 2022, the new 4S Action Plan is currently under development. During November 2022, EDP workshops have been organised within the four priority area working groups. The new Action Plan is expected to be developed and adopted by the Government by the end of March 2023.

Being strongly committed to the SDGs achievements, Serbia is in an advanced stage of developing Science, Technology and Innovation (STI) for the SDGs Roadmap based on the smart specialisation approach while participating in the United Nation's Global Pilot Programme on STI for SDGs Roadmap. The methodological and policy making efforts on smart specialisation for sustainable development, supported by the JRC and UNIDO, resulted in the inclusion of the SDGs component in the 4S and in the development of the STI for SDGs Roadmap. The output was a Strategy's Action Plan and the development of the pilot methodology that could be used by policymakers in other countries interested in developing STI for SDGs Roadmaps based on the smart specialisation approach. Being successfully designed and implemented, the Serbian Roadmap and Serbia's experience is effectively used as an example of best practice in the development of Roadmaps for sustainable development and was included in the "Guidebook for the Preparation of Science, Technology and Innovation for SDGs Roadmap" (the Guidebook) (UN-IATT and EC/JRC, 2021)[1].

4. Conclusion

The Serbian research system has made significant progress in the last few years in terms of ongoing funding reforms that have led to a more competitive science, to increased research excellence and relevance, to a more effective national innovation system as well as to increased transnational cooperation and competition. Despite the apparent advancement in the process of integration into the ERA, there are still a number of issues that need to be addressed.

Serbia needs to increase its efforts to improve inter-institutional, cross-sectoral and international research mobility. This includes activities aimed at supporting competitive scientific projects implemented by research teams that have set up renowned international collaborations in Europe and the rest of the world, as well as measures encouraging researchers and institutions to participate in European scientific associations and organisations.

While a significant amount of funds have been invested in the national scientific and innovation infrastructure, primarily in the construction of science and technology parks, the Government of the Republic of Serbia should consider increasing its participation in large Pan-European research infrastructures, focusing on those acknowledged by ESFRI. This should have multiple benefits to the research community, mainly by increasing research excellence through participation in high-level research projects.

In the area of gender equality, Serbia is above the European average when it comes to the number of women in science, the share of female doctoral students, etc. However, the current situation is that the number and share of women in high leading positions is significantly lower than those of men. The Government of Serbia needs to introduce concrete measures to support women in top-level positions in the R&D sector.

[1] https://sdgs.un.org/sites/default/files/2021-06/GUIDEBOOK_COMPLETE_V03.pdf

Serbia is generally characterised by a low level of technology transfer. There is a lack of skilled professionals in technology transfer, insufficient academia-industry interaction and low internal capacities of public research institutes to manage this process. However, this was recognised by the MSTDI and, in addition to the support provided to the public research institutes within the SAIGE project, new support programmes can be expected in the coming years. A major focus of the MSTDI will be to improve technology transfer in Serbia. Currently, in the framework of the SAIGE project and with the support of external experts, the MSTDI is scanning Serbia's innovation ecosystem, which should result in a detailed analysis and in a proposal of measures for further improvement and strengthening of technology transfer, with a special focus on biotechnologies.

Serbia has made enormous progress in the field of Open Access, both in terms of a well-defined strategic framework and in the implementation process. The topics of Open Access and Open Science are widely represented through awareness raising among stakeholders within ongoing international projects. In the coming period, the MSTDI will continue to provide support to research institutes in increasing their internal capacities in this field. The integration of Responsible Research and Innovation (RRI) principles as a new paradigm and comprehensive approach to responsibility into the R&D governance system is emerging in Serbia.

Serbia has signed a large number of bilateral cooperation agreements with many countries. However, there is still room for initiating new bilateral scientific and technological cooperation with leading EU Member States in the field of science, technology and innovation. Active participation in activities related to the implementation of the two macro-regional strategies EUSDR and EUSAIR should be intensified, for example in joint programming and better combining existing funds. Furthermore, initiation of new cooperation mechanisms, the mobility of researchers, a better utilisation of existing research infrastructures and the cooperation in the field of implementation of S3 should also be high on the agenda.

The S3 team in Serbia has made significant progress in implementing the first national Smart Specialisation Strategy. There is a good level of understanding of the necessities of the process and the decisions to be taken. However, several important decisions still have to be made, including the institutionalisation of the regular dialogue with the key stakeholders within the S3 priority areas working groups. Furthermore, strategic foresight and the EDP as a permanent process of long-term planning should be used as an appropriate approach for supporting S3 in the future. The monitoring and evaluation system for the implementation of strategic documents also needs to be improved.

POLICY ANSWERS

ABOUT POLICY ANSWERS

POLICY ANSWERS (R&I POLICY making, implementation ANd Support in the WEsteRn BalkanS) supports policy coordination in the Western Balkans and with the EC and the EU. 14 partner organisations, representing network nodes in the region and EU expert organisations, support policy dialogue through formal meetings (such as ministerial and steering platform and ad-hoc policy meetings), monitoring and agenda setting, capacity building and implementation of the EU's Western Balkan Agenda, as well as the alignment of thematic priorities. The project implements regional pilot activities and offers an information hub based on the westernbalkans-infohub.eu online information platform. The partners provide analytical evidence via monitoring and mapping activities of the stakeholder ecosystem, of the implementation of the Western Balkans Agenda and of the Western Balkans' integration into the European Research Area as well as via strategic foresight. POLICY ANSWERS also allows for tailored and targeted capacity building activities in the Western Balkans as well as regional alignment of priorities in relation to the digital transformation, the green agenda and towards healthy societies. Pilot activities provide learning opportunities on policy and programme level and reach out to final beneficiaries related to improved academia-industry cooperation, researcher mobility, inclusion of youth in policy processes, promotion of research infrastructures and increased innovation skills in all areas.

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