



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA IZOBRAŽEVANJE,
ZNANOST IN ŠPORT

Resolution on the Slovenian Scientific Research and Innovation Strategy 2030 (ReZrIS30)



5

Address by the Minister Prof. Dr. Simona Kustec

8

Address by Director-General, Science Directorate
dr. Tomaž Boh

10

Resolution on the Slovenian Scientific Research
and Innovation Strategy 2030 (ReZrIS30)

18

Objective 1. Effective governance of the
scientific research and innovation system

22

Objective 2. Enhanced investment in
research and innovation

24

Objective 3. Researchers' career
development and excellent science

26

Objective 4. Excellent and internationally
competitive research infrastructure

28

Objective 5. Accelerated cooperation
between science and industry, knowledge
transfer and innovation

32

Horizontal objectives

Content

Resolution on the Slovenian
Scientific Research and
Innovation Strategy 2030
(ReZrIS30)

Prof. Dr.
Simona
Kustec

Minister of
Education,
Science and Sport



Honourable researchers, the research,
academic and innovation communities
of the Republic of Slovenia, dear readers,

we live in vibrant times marked by many unknowns and the associated unpredictability of everyday social, economic, environmental, technological dilemmas and challenges. At the global level, we find ourselves at a crossroads of future development. The solutions are far from obvious and straightforward. To identify them, we need to be able to understand, to describe, to act. The basis for such an approach are knowledge, reason, science and innovation, which are not an end in themselves, but are able to connect, cooperate, integrate, and are based on excellence, competitiveness and respectful ethics.

This is the fundamental vision of a modern scientific research and innovation community, required by society at large and supported by development-oriented policy-making. Slovenia and the European Union, where our country had intensified its prominence during the

Presidency of the Council of the European Union in the second half of 2021, have embraced this support with full responsibility and commitment. Dialogue and cooperation have laid the foundations for a renewed European Research Area (ERA), and paved the way for the first overarching national Act on Scientific Research and Innovation and the new Resolution on Slovenia's Scientific Research and Innovation Strategy 2030.

A functioning and coherent research area, represented by open, innovative, stimulating and competitive science, is one of the fundamental pillars of a knowledge-based and intellectually-oriented society that is sustainable, responsible and oriented towards the further advancement of civilisation. The scientific research and innovation community is pursuing this mission by:

- intra- and interdisciplinary integration and collaboration;
- a balance between basic and applied science;
- an effective governance system;
- mobility and exchange;
- values and principles that advocate research autonomy, openness, and a level playing field irrespective of gender, age, cultural, disciplinary, geo-political, legal and other differences.

The text of the Resolution on the Slovenian Scientific Research and Innovation Strategy 2030, which is in front of you, has been shaped by the pathways and processes described above. It was drafted by a special international working group set up by the Science and Technology Council of the Government of Slovenia, and the final text was then first approved and adopted by the Slovenian Government and then by the National Assembly.

The new resolution lays down the strategic foundations for placing Slovenia's scientific research and innovation area on the global map of leading, innovative, successful and commendable scientific research and innovation systems. It is responsive to the current situation, to processes in the domestic and international community, and places special emphasis on ethical responsibility and the development mission of scientific research and innovation. It is inextricably linked to the activities of higher education (which is why the document was drafted in parallel with the Resolution on the National Programme for Higher Education, which was adopted by the National Assembly of the Republic of Slovenia on the

same day as the Resolution on the Scientific Research and Innovation Strategy of Slovenia 2030), the Slovenian Industrial Strategy, the Smart Specialisation Strategy, and the leading EU and international strategic documents of the OECD, UNESCO, and others.


The content of our country's Science, Research and Innovation Strategy 2030, with a particular focus on digitalisation and green sustainability, is based on the following key programme elements and drivers:

- research excellence and ethics,
- ensuring an appropriate research environment and the role of researchers,
- nurturing the next generation of young researchers,
- ensuring access to world-class research and technological infrastructure,
- ensuring Open Science and Open Innovation,
- setting up a system for identifying new opportunities, particularly in niche areas,
- an internationally comparable system for monitoring and evaluating the performance and achievements.

In order to support these objectives, the State has committed itself, with the almost simultaneous adoption of the Act on Scientific Research and Innovation and the resolution, to increase public investment in scientific research and innovation to 1.25% of GDP by 2030, and to increase total investment in scientific research, development and innovation to 3.5% of GDP by 2030. Research and innovation will be focused on areas that address key issues and challenges of sustainable development in line with the 2030 Agenda and the related green and digital transformation.

I would like to thank all of you who have actively and committedly participated in all the processes described above and in the creation of the content of the resolution, thus enabling it to see the light of day. You have done invaluable work for the Slovenian scientific research and innovation community! And to the researchers and innovators, I wish that my words in this foreword will guide you in successfully, resolutely and responsibly performing your daily activities.

Prof. dr. Simona Kustec,
Minister of Education, Science and Sport



Dr. Tomaž Boh

Director-General, Science Directorate

Scientific research and innovation has always had an important place in Slovenia, with at least a clear declarative recognition that it is key for our social development. At the same time, the experience with the implementation of the Research and Innovation Strategy of Slovenia 2011-2020 has taught us that even a well-conceived strategy is ill-fated to weak implementation if it is not backed-up by an appropriate legal basis and necessary financial resources.

With the adoption of the Act on Scientific Research and Innovation, we are establishing a solid systemic and financial framework that will ensure adequate autonomy for scientific research in general, and research institutions in particular, clearly defines responsibilities and secures financial and organisational stability. I therefore believe that the objectives set out in the text of the strategy in front of you are bold and ambitious, but at the same time achievable.

Slovenia has an important role to play in the creation of the European Research Area (ERA). During Slovenia's Presidency of the Council of the European Union, the foundations for the future governance of the ERA were laid down, and the Member States and the European Commission are working intensively to develop it further in cooperation with all key stakeholders. Slovenian Scientific Research and Innovation Strategy 2030 (ZRISS 2030) is also firmly anchored within the ERA framework, as its strategic objectives represent elements that are also the fundamental building blocks of the ERA.

The text of ZRISS 2030 had been evolving over time, with its fundamental objectives emerging during evaluations of the previous strategy (RISS 2011-2020) and also during the preparation phase of the Slovenian Presidency of the Council of the EU. ZRISS 2030 is divided into five overarching objectives, specified through horizontal targets and key measure. Further specification of measures and the definition of monitoring criteria will be carried out in sectoral action plans, which will have a more focused and shorter time span, and can be flexibly adapted to emerging social circumstances, if necessary. Slovenia's overall objective is to be among the leading innovators on the European Innovation Scoreboard (EIS) by 2030, which is why the primary level of monitoring is also based on the monitoring of the EIS indicators, which will, among other things, enable us to perform an international comparative analysis.

Key milestones in our quest for ZRISS 2030

- On 30 March 2020, the Science and Technology Council (STC) appointed a Working Group tasked with preparing the first outputs and guidance documents of ZRISS 2030.
- On 20 January 2021, the STC adopted the guidance document for ZRISS 2030.
- On 17 December 2021, the Government of the Republic of Slovenia adopted the Draft Resolution on the Slovenian Scientific Research and Innovation Strategy 2030.
- On 23 March 2022, the National Assembly adopted the Resolution on the Slovenian Scientific Research and Innovation Strategy 2030.

Scientific research and innovation are key areas for sustainable development of society and for ensuring improved quality of life and well-being for all. The systemic framework for appropriate development is in place, we are successfully integrated into the international space, and I therefore believe that the next decade in Slovenia will be a decade of successful development based on knowledge - science and innovation. The system will be inclusive and open, and I believe that each of the stakeholders will contribute its share to the ultimate success.

I would like to thank all of you who have participated in the process of preparing this document, as well as all those who will contribute to its implementation.

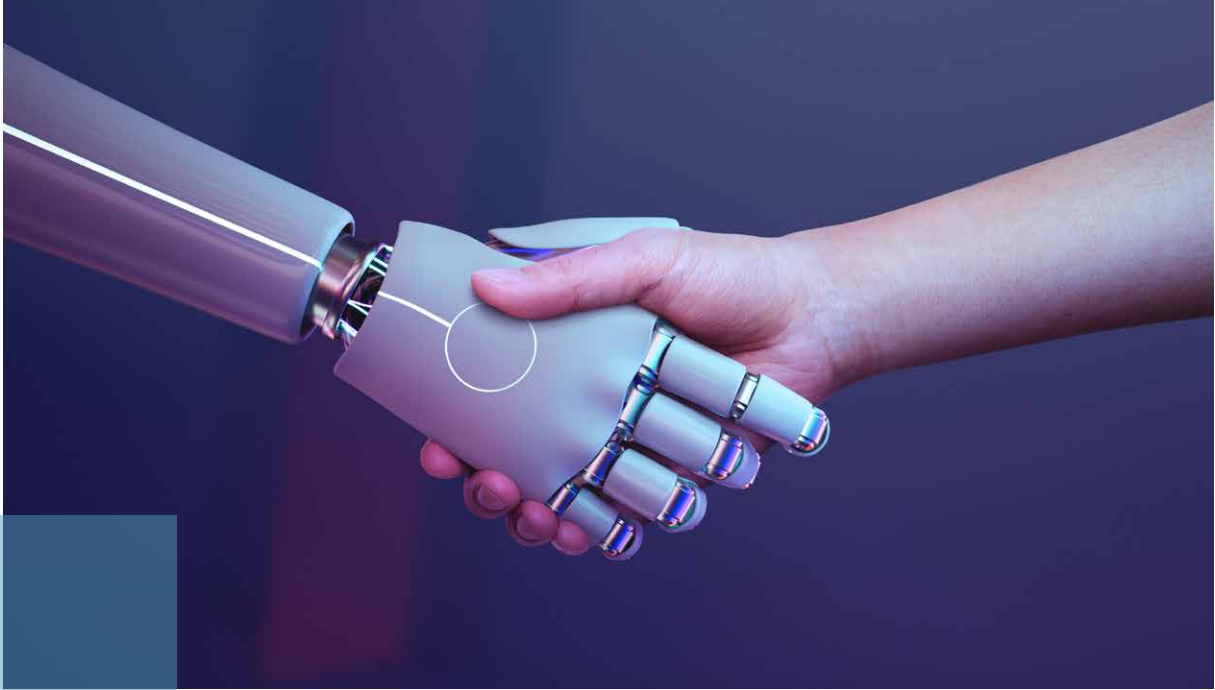
Resolution on the Slovenian Scientific Research and Innovation Strategy 2030 (ReZrIS30)

A society based on knowledge and innovation is the society of the future. Research and innovation, which must become an integral part of sector-specific policy decisions, play a central role in this regard, and are therefore a key link of society. In fact, scientific research and innovation (R&I) systematically develops new knowledge, skills and competences and their application for sustainable development, improved quality of life and well-being for all.

Slovenia was ranked 15th among EU Member States in the latest European Innovation Scoreboard (EIS) in 2021, remaining in the group of moderate innovators. The EU's innovation performance has been improving throughout the period 2014–2021. It deteriorated in Slovenia from 2018 to 2020, but this trend was overturned in 2021. The EU Member States have committed to increasing funding for research and development (R&D) activities by 2020, in order to meet the 3% of GDP target for R&D. While the EU is making slow progress toward this goal, Slovenia lost a significant advantage during the RISS implementation period of 2011–2020 and fell below European average. Compared to Slovenia, EU innovation leaders invest more than

three times as much in R&D funding per capita.

The Slovenian Scientific Research and Innovation Strategy 2030 (hereinafter: ZRISS 2030) is a key strategic document for research, development, and innovation which serves as a basis for policy-making in the areas of social, economic and sustainable development and societal challenges. The implementation of the Recovery and Resilience Plan (RRP), which in its reform part builds on and operationalizes the 2030 ZRISS, and the European Cohesion Policy Programme 2021–2027 will provide additional momentum and focus to the measures, identified within ZRISS 2030.



ZRISS 2030 is inextricably linked with the national higher education programme, and both are aligned with the Slovenia 2030 Development Strategy and with other national sectoral strategic documents (e.g. Slovenian Industrial Strategy 2021–2030, Slovenian Smart Specialisation Strategy, Integrated National Energy and Climate Plan, National Environmental Action Programme 2030, Digital Slovenia and the National Programme for the Promotion of the Development and Use of Artificial Intelligence in the Republic of Slovenia until 2025 and the Action plan Slovenia – the country of innovative start-ups). ZRISS 2030 establishes a contextual and financial framework for other social and economic activity strategies in specific areas (e.g. health, climate and environment).

At implementation level, ZRISS 2030 will be supplemented by action plans and topical strategic documents (Research Infrastructure Roadmap, Open Science Action Plan, Action Plan for Knowledge Transfer Offices and

Equal Opportunities Action Plan). The action plans will further elaborate on the measures, identify and present activities as well as implementation timelines, indicators and foreseen funding.

ZRISS 2030 is based on the outputs and guidelines adopted by the Science and Technology Council of the Republic of Slovenia (hereinafter referred to as “the STC”) on 20 January 2021, and addresses the key challenges faced by Slovenia, namely societal, international and national challenges, and, ultimately, organisational challenges. Because of their cross-cutting nature, the topics are addressed within the context of different challenges, however the overall objectives include all of the STC’s essential recommendations.

The objectives take into account the emerging framework of the European Research Area (ERA), where national policies in the field of R&I are developed with regard to the wider geographical aspect of research and innovation (R&I) and the internationalisation of research

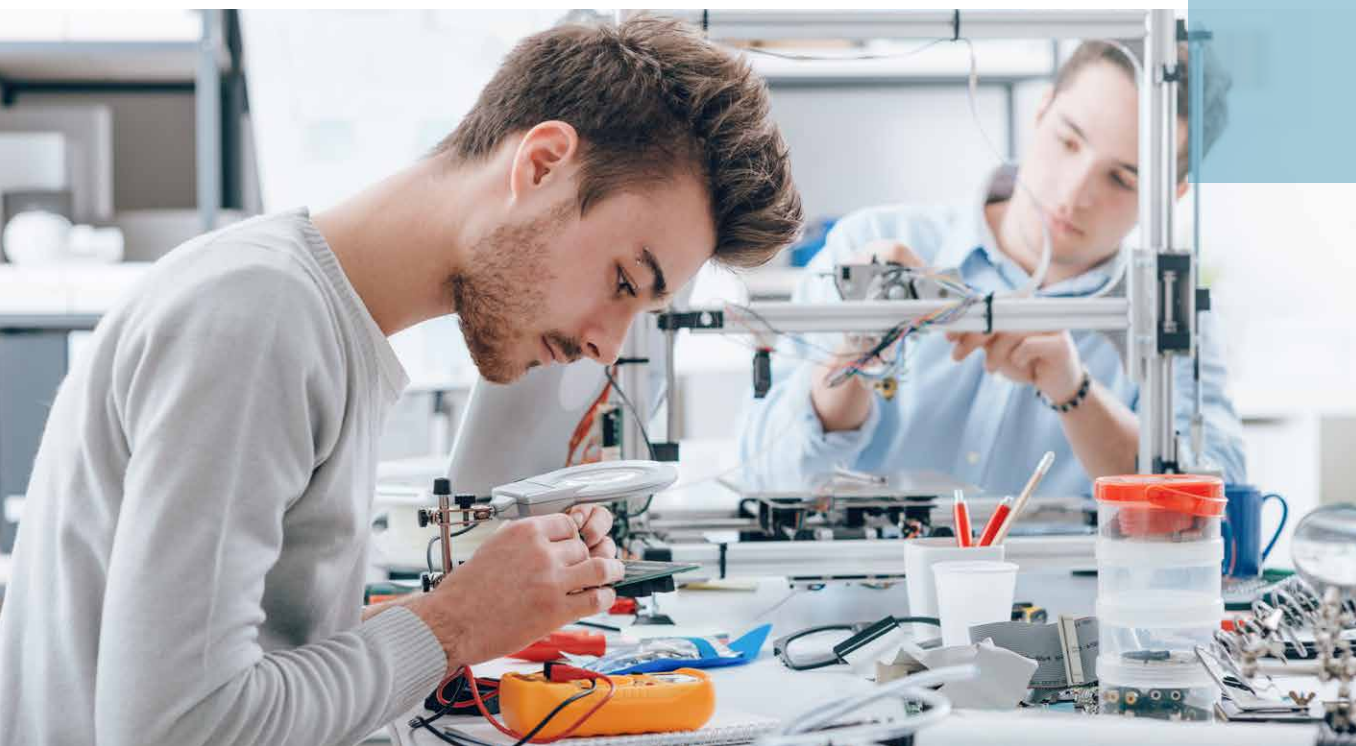
activities. As Europe faces major societal, economic, security, and environmental challenges, the aim of strengthening and relaunching the ERA is to increase competitiveness and, above all, the well-being of EU citizens. To achieve this, it is critical to implement a green and digital transformation.¹

The EU's development strategy is based on the pursuit of new, environmentally friendly manufacturing methods, breakthrough technologies, and new forms of work. A number of EU Member States and regions have established a clear link between their development strategies and the rapid development of research potential. To effectively address societal challenges, scientific research as a horizontal activity must be integrated into all sectoral policies. It must be involved in and influence all

social processes, not just the economy, but also health, defence and security, public administration, culture, and other service activities (e.g. tourism), etc.

The importance of integrating knowledge into all subsystems of society was also highlighted in the previous Research and Innovation Strategy (RISS 2011-2020). It had particularly highlighted the radical societal changes of the last decades, which are still relevant in the context of disruptive technological changes and challenges. This has introduced additional risks and more unpredictable societal dynamics. The outbreak of the COVID-19 epidemic has shown that sustainable development depends not only on knowledge of natural and social processes, but also on anticipating and being able to respond to their further evolution. The relevance of science for

¹ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A new ERA for research and innovation, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:628:FIN>.



society has been re-emphasised and the research community has become even more aware of the importance of interdisciplinary and transnational cooperation. Only science, underpinned by openness (of research results and research infrastructure), has been able to respond swiftly and effectively to the unexpected challenges of the pandemic, which is a major societal challenge.

Natural disasters and climate change are visible indicators of the circumstances, challenges, and risks associated with our quest for human prosperity, and range from unequal social development to irresponsible environmental management. The 2030 Agenda and the corresponding Sustainable Development Goals (SDG)² represent our global response to these challenges, however, many bottlenecks have been slowing down their implementation. As a result, policy measures promoting R&I should help achieve the SDGs. Translating research results into economy or society is only possible through an integrated approach to addressing societal challenges, interdisciplinary collaboration and the introduction of Open Science principles. The transition to “Society 5.0” is based on people with responsible behaviour close to their hearts, while economic growth and social progress must give way to strengthening of sustainable development, democracy, equality, quality of life, and well-being for all.

R&I should become a supporting pillar of progress, with appropriate government policy focus and above EU average funding. The government must contribute to the adoption of a development strategy that generates critical mass and improved prospects for global excellence, as well as greater opportunities for international cooperation and the development of a modern innovation ecosystem. Slovenia is a country of start-ups and strong innovators with a successful system of knowledge transfer to the economy and society in general, which will enable greater added value and contribute a significant part of revenues to the state budget, subject to an appropriate and efficient tax environment. Greater cooperation leads to intensified knowledge transfer, to the expansion of a culture of innovation and to an increase in the number of innovation-intensive enterprises with high added value.

Science respects and reinforces the constitutional principles of democracy, the rule of law and the social state, the separation of powers, the protection of human rights and fundamental freedoms, and the economic, social and environmental benefits of the knowledge produced. It is based on the pursuit of the SDGs³, thus going beyond an EU focus and demonstrating its engagement and impact in the global arena. Science must respect and act according to the principles of socially responsible science, based on the common values and principles of the ERA as recognised in Europe.

² 2030 Agenda for Sustainable Development: (see <https://www.gov.si/zbirke/projekti-in-programi/uresnicevanje-agen-de-2030/>)

³ Available at: https://unis.unvienna.org/unis/sl/topics/sustainable_development_goals.html.

Science, research, and development bring about verified methodologies as well as original solutions, with a focus on the [following key areas](#):

- 1 | consistent commitment to excellent science, both breakthrough and priority/thematic oriented, as a precondition and guarantee for ecologically, democratically, and socially just social and economic development, prosperity, and security;
- 2 | ensuring an appealing research environment with appropriate financial and non-financial remuneration, recognition of the social role of researchers from research organisations (ROs) and industry, thereby increasing the attractiveness of the research profession;
- 3 | establishing a system for identifying and developing potential in niche areas that can contribute to the overall development of society;
- 4 | shortening the path from scientific results to societal uptake, in particular in the fields of sustainable development and medicine;
- 5 | guaranteeing the freedom of scientific research by facilitating the autonomy of ROs and science as such in terms of their/its responsibility for achieving the objectives set and their/its interdependence with economic and social development;
- 6 | efficient and transparent organisation of research, transparent and coherent governance and performance of supporting institutions (agencies, ministries), as well as periodic international evaluation of ROs and the system in general;
- 7 | nurturing next generation of top scientists, including measures for individual career paths while promoting the development of different career paths, with a special focus on the careers of women in research;
- 8 | ensuring access to and updating world-class international research infrastructure, as well as technological, entrepreneurial, and innovation infrastructure, and e-infrastructure;
- 9 | strengthening the interdisciplinarity of research by integrating societal perspectives in research and the dissemination of research results at both institutional and inter-institutional level;

- 10 | ensuring a regular and transparent international evaluation of ROs and the selection procedures for funded R&I activities, based on a transparent, internationally comparable system of values and indicators;
- 11 | proactively introducing Open Science principles and open innovation; promoting polycentric and diversified RO development.

The advancement of R&I will focus in particular on the following areas:

- [stable funding](#) for science to deliver new insights and original ideas;
- fostering close [cooperation between](#) science and industry to support the economic stability and prosperity of Slovenian society;
- effective and transparent [management and evaluation](#) of the whole research area for effective and excellent science;
- creating attractive and [competitive working conditions](#) and fostering the career development of researchers towards excellent science;
- strengthening and ensuring international integration of [research infrastructure](#), as well as developing and establishing national [infrastructures](#) for an appealing research environment, increased research-industry cooperation, and increased international mobility;
- coordinated integration of [R&I into all sectoral policies and at the heart of development policies](#);
- an [R&I system firmly embedded in ERA](#) and the wider international area, actively co-creating it, inclusive of all stakeholders in the system and responsive to societal challenges.

In doing so, it will be important to promote Open Science in order to improve research quality, efficiency, and responsiveness, while also ensuring socially responsible science (ethics and integrity in research and by researchers), gender equality, and equal opportunities in R&I.

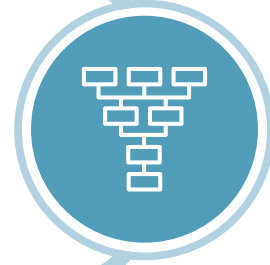
EXPECTED DEVELOPMENT IMPACTS AND RESULTS IN THE FIELD OF SCIENTIFIC RESEARCH AND INNOVATION IN THE REPUBLIC OF SLOVENIA UNTIL 2030

1. Slovenia will become a successful knowledge-based and innovation-based society by 2030, ranking among the **innovation leaders** on the EIS.
2. Public investment in R&I will reach 1.25 % of GDP by 2030, with public investment already at 1 % of GDP in 2027, and **total investment** in R&I will reach **3.5 % of GDP by 2030**.
3. R&I will focus on key issues addressing the challenges of sustainable development in accordance with the objectives of the 2030 Agenda, the related green and digital transformation, and the Slovenian Smart Specialisation Strategy, in particular:
 - 1 | environmental research, sustainable management and conservation of the natural environment, resources, biodiversity, agriculture, forestry, food, and sustainable and rational use of natural resources;
 - 2 | the digital transformation of the economy and society as a whole, supported and developed by high-performance computing for data-intensive modelling and its application, with integration into EU and global development flows;
 - 3 | the quality of life, as well as health and safety of future generations;
 - 4 | sustainable management of energy, food and water resources in climate-resilient conditions;
 - 5 | the challenges of a sustainable economic transformation, particularly in the fields of energy (including storage and resources) and future sustainable mobility, as well as the related transition to a circular economy and a sustainable society, while taking into account the principles of a just transition.

Slovenia will achieve the expected development impacts and results through the **five overarching objectives, horizontal targets and key** measures outlined below, which will contribute to moving towards the goal of being among the ten best performing EU countries as measured by the EIS. Monitoring and tracking the indicators of the EII will also help to determine the effectiveness of the actions set out.

Objective 1.

EFFECTIVE GOVERNANCE
OF THE SCIENTIFIC RESEARCH
AND INNOVATION SYSTEM



ENHANCED INVESTMENT IN
RESEARCH AND INNOVATION

Objective 2.

Objective 3.

RESEARCHERS' CAREER
DEVELOPMENT AND EXCELLENT
SCIENCE



EXCELLENT AND
INTERNATIONALLY COMPETITIVE
RESEARCH INFRASTRUCTURE

Objective 4.

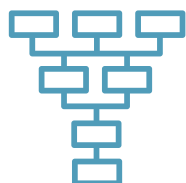
Objective 5.

ACCELERATED COOPERATION
BETWEEN SCIENCE AND INDUSTRY,
KNOWLEDGE TRANSFER AND
INNOVATION



Objective 1.

Effective governance of the scientific research and innovation system



Measure 1.1

Establish R&I as a horizontal development policy.

Measure 1.2

Increase the autonomy of ROs, while ensuring accountability for achieving targets and reducing administrative burdens.

Measure 1.3

Integrate research, higher education and innovation at the operational and institutional levels into a single, effective system based on synergies and complementary capacities.

Measure 1.4

Establish a national information hub to provide active support to researchers in the transfer of research results, organize periodic Slovenian Research and Innovation Days and link up with the Knowledge Transfer Offices and Project Offices.

Measure 1.5

Carry-out an international evaluation of the R&I system and its institutions, based on peer-counselling activities, to ensure transparency of procedures and institutional performance.

Measure 1.6

Establish an internationally comparable and independent research performance assessment of ROs in each research field, based on a transparent system of indicators.

Measure 1.7

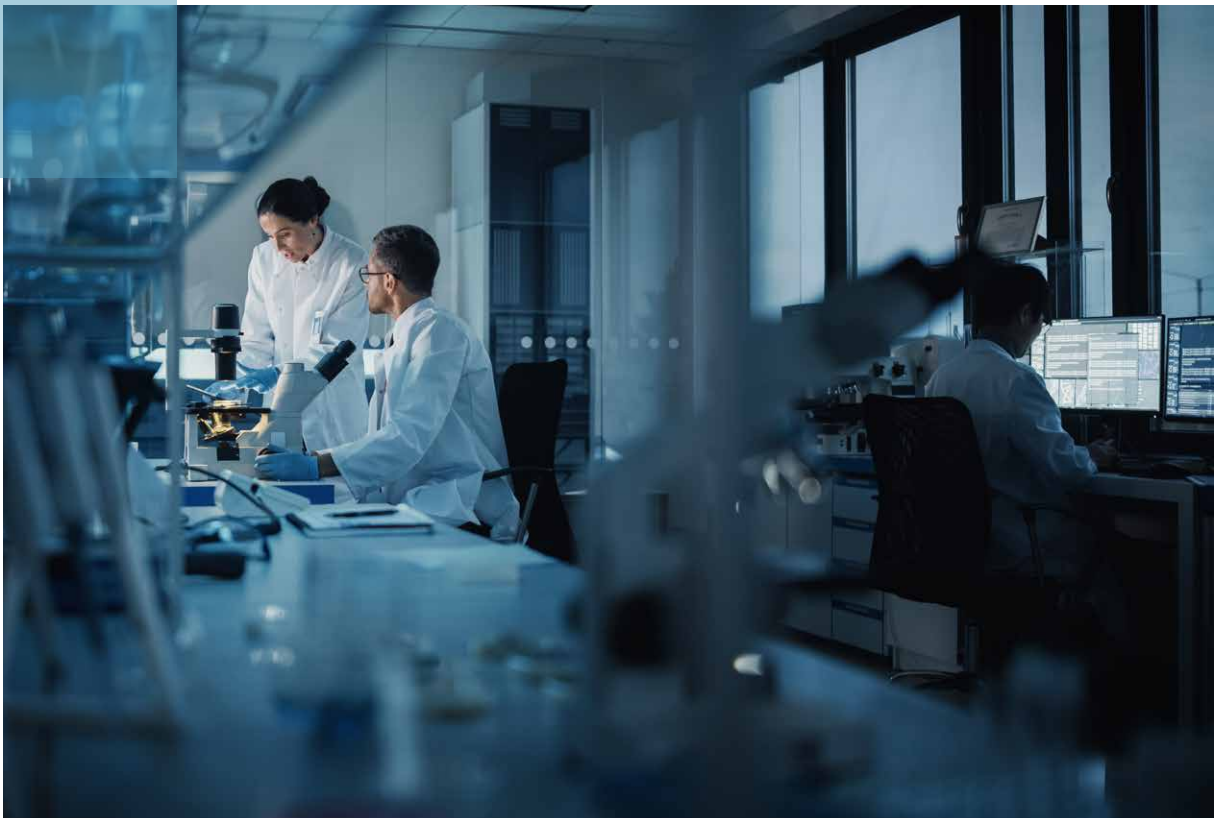
Secure dedicated resources to popularise scientific research, development, and innovation activities, including by promoting the potential of regional development.

Measure 1.8

Build and establish the Science Centre as a central institution in the field of science popularisation.

Measure 1.9

Strengthen the human resource capacity of R&I actors and support system institutions, facilitating their cooperation, and coordination and integration with ERA.



-
- Measure 1.10** Coordination of the development, implementation, monitoring and evaluation of funding instruments and other strategic documents to promote excellent research, “dual transition” in all areas, and appropriate responses to societal challenges.
-
- Measure 1.11** Establish a coordinated process for managing the entire R&D cycle at all levels of technological development (TRL 1-9) based on national development needs, specifically the Slovenian Smart Specialisation Strategy, and in the framework of The Strategic Research and Innovation Partnerships (SRIP).
-
- Measure 1.12** Establish a unified system of state aid for R&I activities, and research and technological equipment.
-
- Measure 1.13** Improve and optimize the competitive financing of scientific research, along the lines of the ERC and the EIC, including through the renewal of the evaluation system, targeted funding for R&D projects with high breakthrough potential and complementary support for EU-level initiatives.
-
- Measure 1.14** Establish conditions and incentives for active participation of ROs in international cooperation programmes (including the European Defence Fund - EDF), as well as incentives for the establishment of project offices and their connection to the work of the knowledge transfer offices, and a strong national network of contact points.



Measure 1.15

Further develop intellectual property (IP) legislation, establish an effective system for the protection and use of IP, encourage the emergence of an integrated system of substantive high quality support services to assess current and potential future IP protection, and provide high quality innovation support to both ROs and enterprises.

Measure 1.16

Further develop legislation and good practices on the protection of personal (special types of) data and their processing for scientific research purposes in order to effectively protect the rights of individuals, prevent misuse and ensure the availability of data needed for research, and thus a competitive research environment.

Objective 2.

Enhanced investment in research and innovation

2



Measure 2.1

Establish synergistic instruments in the fields of science, innovation, and higher education that enable shared activities, and thus a more efficient use of available resources.

Measure 2.2

Establish a system to achieve synergies and complementarity among different sources of funding, with a focus on the use of the “Seal of Excellence” mechanism in fields with significant scientific or innovation potential.

Measure 2.3

Establish a legal framework and develop support mechanisms for the complementary use of EU and national funds.

Measure 2.4

Ensure an adequate share of funding for complementary actions to the EU Framework Programme for Research and Innovation (EU Framework Programme) in those parts that are designed to enhance scientific excellence, as well as in actions that will enable/improve/increase the effectiveness of preparing proposals for calls under the instruments in these parts of the EU Framework Programme.

Measure 2.5

Develop the necessary basis for Slovenia to invest at least 5 % of public funds in scientific research, development, and innovation for joint programmes, European partnerships and research infrastructure by 2030, thereby pursuing the ERA objectives.

- Measure 2.6** Establish a system of domestic venture capital funds with state participation, financing innovation in the early stages of technological development (TRL3-TRL7) of at least 0.5% of GDP public funds and at least 0.5% of GDP private funds.
- Measure 2.7** Establish long-term stable institutional funding for scientific research, development, and innovation activities of public research organisations, including the institutional (stable) and development (variable) pillars of funding.
- Measure 2.8** Ensure adequate equity financing for innovation through domestic venture capital funds, with a significant share of public funding of at least 0.5 % of GDP.
- Measure 2.9** Promote business investment by introducing cascading financial instruments and R&I vouchers for industry to foster collaboration between ROs and industry.
- Measure 2.10** Arrange appropriate financial incentives to increase investment in R&I of new products.
- Measure 2.11** Strengthen the innovation potential of start-ups by creating an appropriate support environment in their first year of operation (access to markets and incentives).

Objective 3.

Researchers' career development and excellent science

3



Measure 3.1

Continue development of an internationally comparable system of promotions and academic titles, with criteria that take into account the diversity of research careers.

Measure 3.2

Strengthen a dedicated instrument to help early-career researchers build a self-sustaining research career.

Measure 3.3

Reform the remuneration system for researchers that provides internationally comparable remuneration conditions, is flexible and encourages a diversity of research careers.

Measure 3.4

Increase the proportion of permanent staff, taking into account the autonomy of ROs.

Measure 3.5

Ensure working conditions comparable to European standards for the overall career development of researchers.

Measure 3.6

At least double the funds for the reintegration of young Slovenian scientists who have been educated abroad in the activities of universities and research institutes. And, in line with absorption capacities, increase each year the funds earmarked for co-financing basic projects carried out by researchers returning to Slovenia from abroad (the dr. Aleš Debeljak Programme).

Measure 3.7

Strengthen researchers' international, inter-sectoral and inter-institutional mobility.

Measure 3.8

Increase funding for bottom-up lead excellent science without predetermined thematic priorities or specialisation, including support for emerging research areas.

Measure 3.9

Secure resources in priority areas, identified in national and EU strategic documents, to build competencies for competitive advantage in science, the economy and for the general development of Slovenian society, and for innovative approaches in the design of development solutions involving interdisciplinary integration.

Measure 3.10

Establish support mechanisms to increase above the EU average the number and value of successful applications within the Excellence Pillar of the EU Framework Programme, awarded to ROs from the Republic of Slovenia, as applicants or hosts institutions.

Measure 3.11

Provide support for the world's top scientific groups and organisations in their respective fields.

Measure 3.12

Increase support for cutting-edge research, and further promote ERC, MSCA and EIC grantees, as well as the coordinating role in EU projects, in order to increase the success rate of Slovenian applicants and to spread scientific excellence and promote internationalisation.

Objective 4.

Excellent and internationally competitive Research Infrastructure

4



Measure 4.1

Improve mechanisms for facilitating access to internationally competitive and modern research and technological infrastructure, and establish complementary national infrastructure capacities.

Measure 4.2

Modernize and build new Research Infrastructure (RI) in priority research fields.

Measure 4.3

Associate to international RIs in all research fields, particularly those on the ESFRI Roadmap, and build national infrastructure capacities in accordance with the country's sectoral strategic priorities.

Measure 4.4

Enhance the field of RIs, in accordance with EU standards, based on complementarity between national capacities and international RIs.

Measure 4.5

Set-up conditions, enabling European centres of distributed RIs to operate in Slovenia.

Measure 4.6

Establish e-Infrastructure as a stand-alone infrastructure as well as a horizontal support for research.

Measure 4.7

Further develop and enhance cooperation of a community that will ensure coordinated development of e-Infrastructure in Slovenia.

Measure 4.8

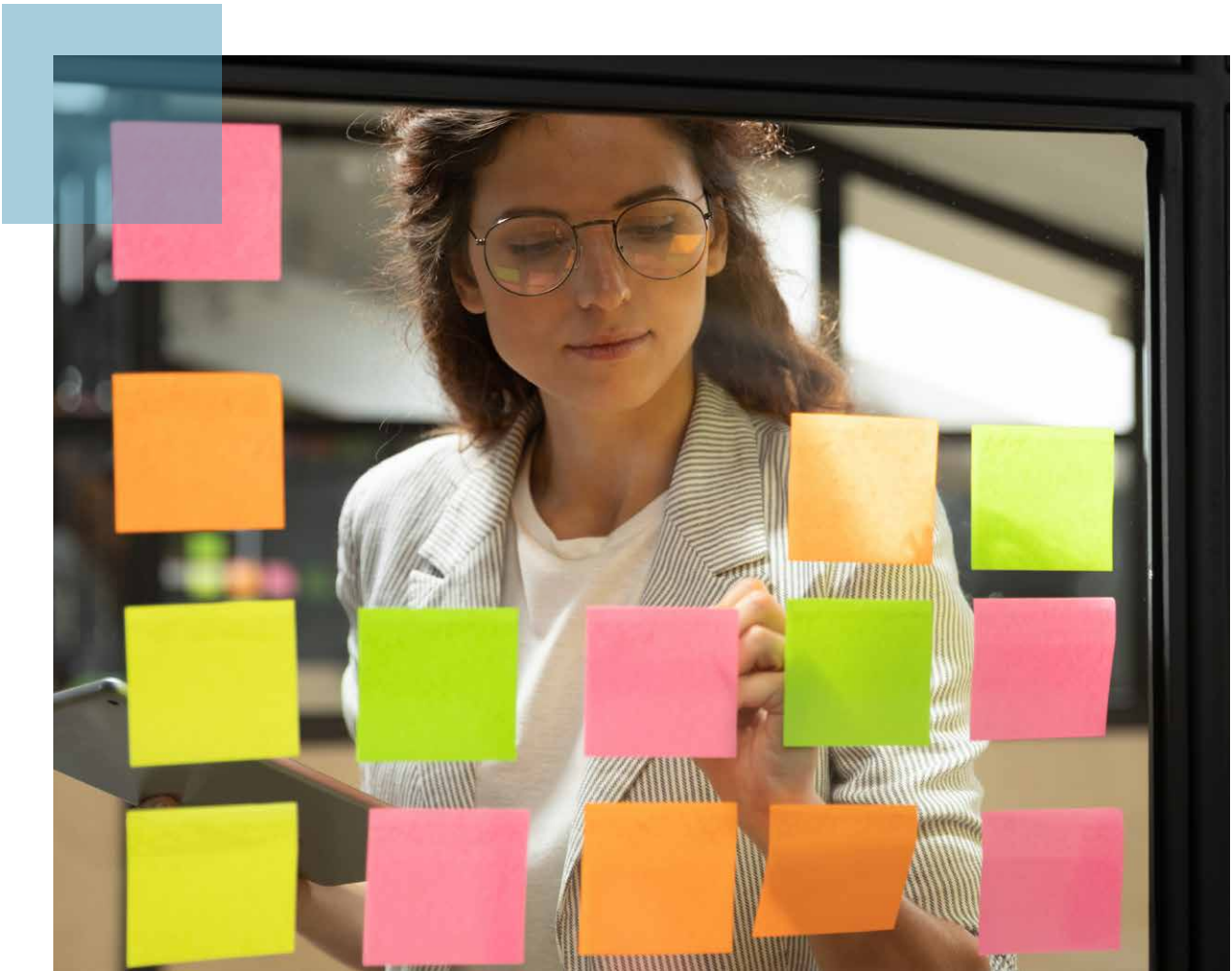
Further develop permanent training mechanisms for researchers on the use of RI and e-Infrastructure.

Measure 4.9

Develop a new approach to technological infrastructures in order to introduce new or improved products, processes, or services with high added value and market potential in a real-world environment.

Measure 4.10

Establish a system for managing research and technological infrastructure in compliance with state aid regulations.



Objective 5.

Accelerated cooperation between science and industry, knowledge transfer and innovation

5



- Measure 5.1** Proactive implementation of Open Innovation principles and market innovation commercialisation.
- Measure 5.2** Encourage knowledge transfer and foster a culture of patenting and other forms of IP protection (know-how, models, trademarks, etc.) in industry, public and non-governmental sectors, and the general public.
- Measure 5.3** Facilitate and promote collaboration between ROs and industry for knowledge transfer and the development of study content on the topics of innovation culture and employees' innovation competencies development.
- Measure 5.4** Sectorial cooperation through collaborative projects between ROs, industry, the public sector, and other societal stakeholders, as well as the creation of framework conditions for the effective collaboration and integration of ROs, higher education institutions, and the private sector through various knowledge transfer and knowledge circulation activities.
- Measure 5.5** Strengthen fast-growing companies through tailor-made financial instruments from banks and investment funds, which allow companies at various stages of development and growth to further support investment in product development and market entry, as well as through market entry support services.

Measure 5.6

Foster innovation in the public sector while taking into account the unique characteristics of public-sector organisations.

Measure 5.7

Strengthen a stable and inclusive system of cooperation between ROs and other institutions (e.g. SID Bank, various investment funds and networks, etc.), implementing knowledge transfer instruments.

Measure 5.8

Establish a support system for effective patent application on a national and international scale, and establish an intellectual property fund.

Measure 5.9

Improve the existing and establish new Knowledge Transfer Offices in ROs and accelerate knowledge transfer to industry, the public sector and to the wider society as one of their key strategic missions.

Measure 5.10

Promote joint research and industry start-ups (including spin-off companies).

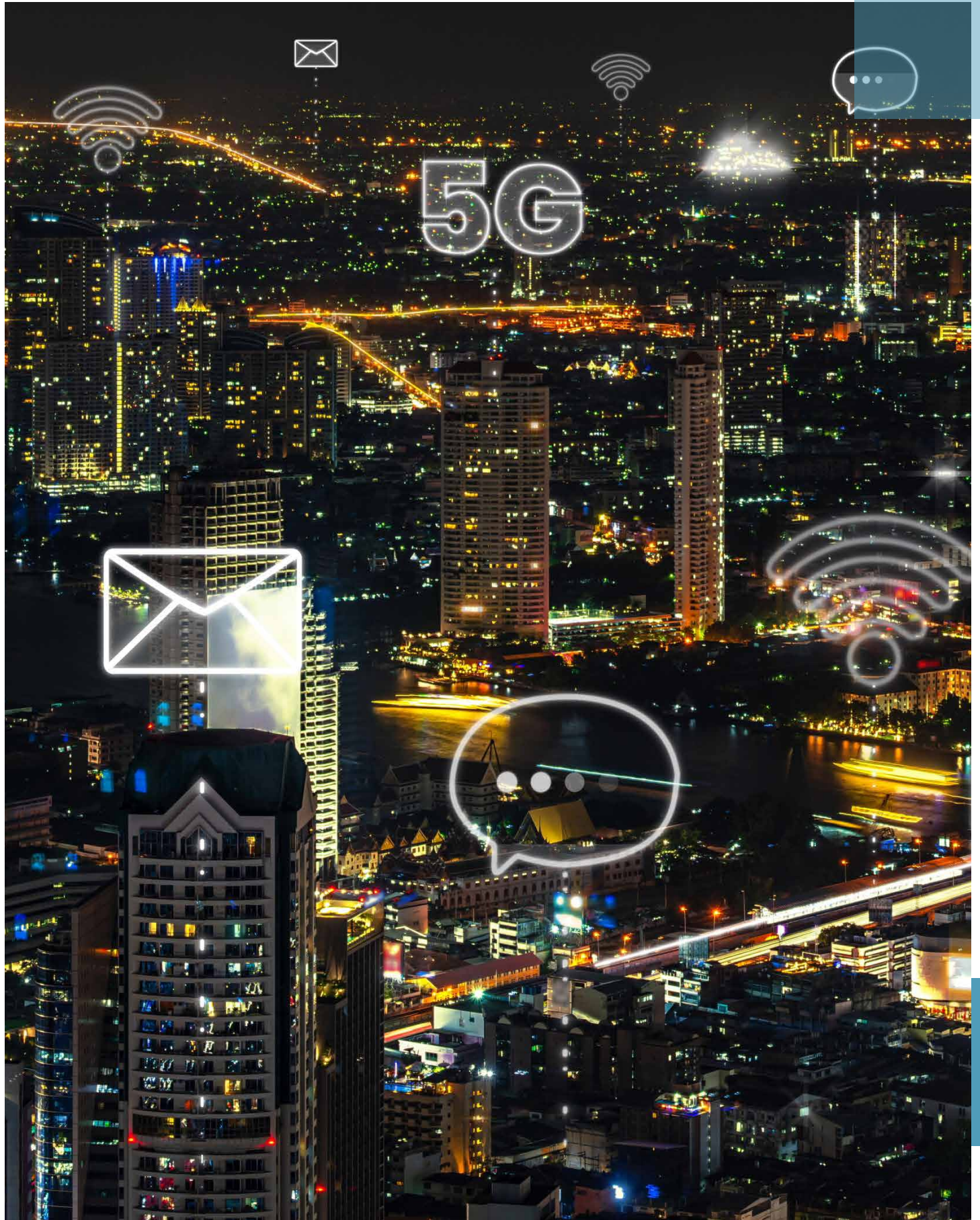
Measure 5.11

Provide services to small and medium-sized enterprises to enhance their innovation management capacities, including a mapping of the state of innovation capacities of enterprises and the development of an action plan to strengthen their innovation capacities.

Measure 5.12

Encourage companies to collaborate on strategic R&D projects with ROs and the state for next generation products and services and breakthrough innovations.

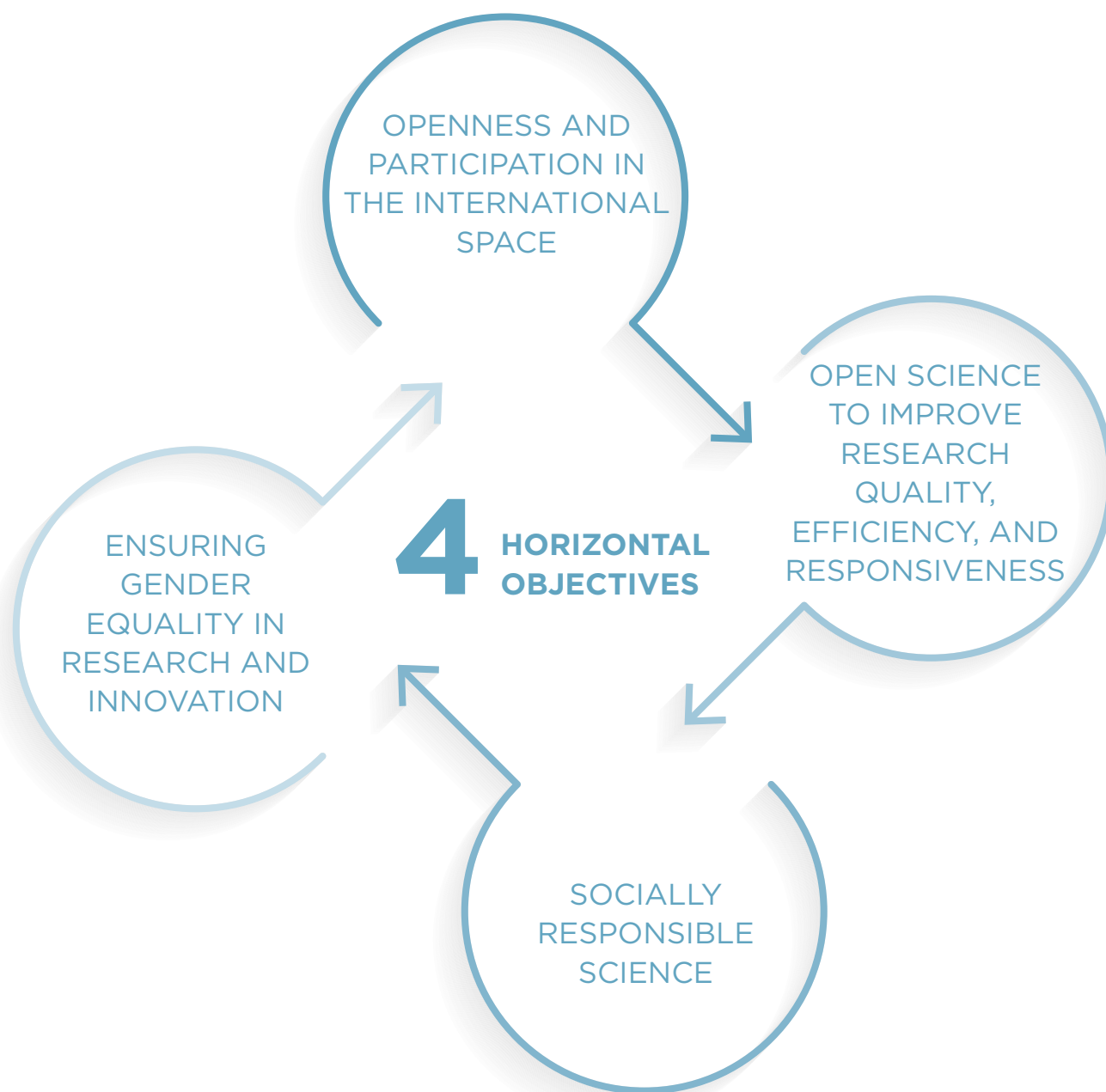
- Measure 5.13** Promote the recruitment or additional training and mobility of researchers in industry, including by reintroducing the Young Researchers in Industry instrument and a Temporary Recruitment for Researchers in Industry instrument
- Measure 5.14** Promote research, development and innovation cooperation activities in enterprises and ROs through the R&I Voucher instrument for all enterprises.
- Measure 5.15** Strengthen the technological breakthrough of enterprises or groups of enterprises with new solutions and products in the global market or strengthen their existing market position.
- Measure 5.16** Use public procurement to stimulate private investment and strengthen innovation capacity to address current challenges.



Objective 6.

6

Horizontal objectives



6.1. Openness and participation in the international space

- **Measure 6.1.1** Effective involvement in ERA and making full use of its instruments.
- **Measure 6.1.2** Expand the network for strategic bilateral and multilateral cooperation with successful global economies with high R&I investment.
- **Measure 6.1.3** Create framework conditions and a system built to attract high-quality professionals from around the world.
- **Measure 6.1.4** Improve communication channels with Slovenian researchers abroad.
- **Measure 6.1.5** Increase support to improve the success rate of EU Framework Programme projects within the Spreading Excellence and Widening Participation instrument.

6.2. Open Science to improve research quality, efficiency, and responsiveness

- **Measure 6.2.1** Effectively manage and finance the development of the national Open Science ecosystem and ensure its coherence with international standards, develop national structures and infrastructures related to Open Science, and foster their integration into international networks and infrastructures.

Measure 6.2.2

Introduce modern approaches to the evaluation of scientific research in accordance with Open Science principles (e.g. DORA -San Francisco Declaration on Research Assessment, Leiden Manifesto for research metrics, (European Research Area and Innovation Committee Guidelines) to increase the quality and impact of research.

Measure 6.2.3

Ensure that the results of scientific research are consistent with the FAIR (Findable, Accessible, Interoperable, and Reusable) principles, and that full and immediate Open Access is provided (subject to justified exceptions).

Measure 6.2.4

Establish a national Open Science community to implement and monitor Open Science in Slovenia, as well as its integration into ERA and beyond.

Measure 6.2.5

Promote the development of citizen science and public involvement in scientific research.

Measure 6.2.6

Promote the development of national scientific publishing that will operate according to the principles of Open Science.

6.3. Socially responsible science (ethics and integrity in research and among researchers)

- Measure 6.3.1** Establishment of a National Council for Ethics and Integrity in Science.
- Measure 6.3.2** Adoption of national guidelines for ethics, fairness and good practice in research, as a basis for codes for individual ROs, following the example of EU Member States.
- Measure 6.3.3** Encourage ROs to ensure and uphold a high degree of ethical standards by developing intrainstitutional definitions of procedures to prevent unethical behaviour and infringement procedures.
- Measure 6.3.4** Provide appropriate ethical review bodies in research in specifically sensitive research fields to increase the quality and level of participation in EU Framework Programmes.
- Measure 6.3.5** Mandatory conduct of ROs in compliance with the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers.
- Measure 6.3.6** Encourage ROs to acquire the European HR Excellence in research award within the framework of the Human Resources Strategy for Researchers (HRS4R).

6.4. Ensuring Gender Equality in Research and Innovation

Measure 6.4.1

Strengthen the commitment of public ROs to structural change related to gender equality and other intersectional factors, and introduce Gender Equality Plans (GEPs) as mandatory strategic documents for ROs that receive public funding.

Measure 6.4.2

Promote the development of measures within ROs against gender-based violence, including sexual harassment.

Measure 6.4.3

Take into account progress on gender equality objectives in the evaluation of ROs in the context of stable institutional funding.

Measure 6.4.4

Foster gender mainstreaming in research funding, including by integrating the gender dimension in research.



Measure 6.4.5

Ensure gender balance in the selection and appointment of members of the committees and working bodies in the field of R&I, and among the candidates for the highest national awards for outstanding achievements of Slovenian scientists.

Measure 6.4.6

Establish a ministerial expert body to support promotion activities, identify systemic barriers, and assist in drafting legal acts and other strategic documents in the area of gender equality and other intersectional areas in the field of R&I.

Measure 6.4.7

Provide comprehensive and transparent sex-disaggregated data for more effective policy-making and monitoring of gender equality policies in R&I.

Measure 6.4.8

Establish a national contact point to support applicants in calls for proposals under the EU Framework Programmes or in national calls, as well as to provide gender equality training.

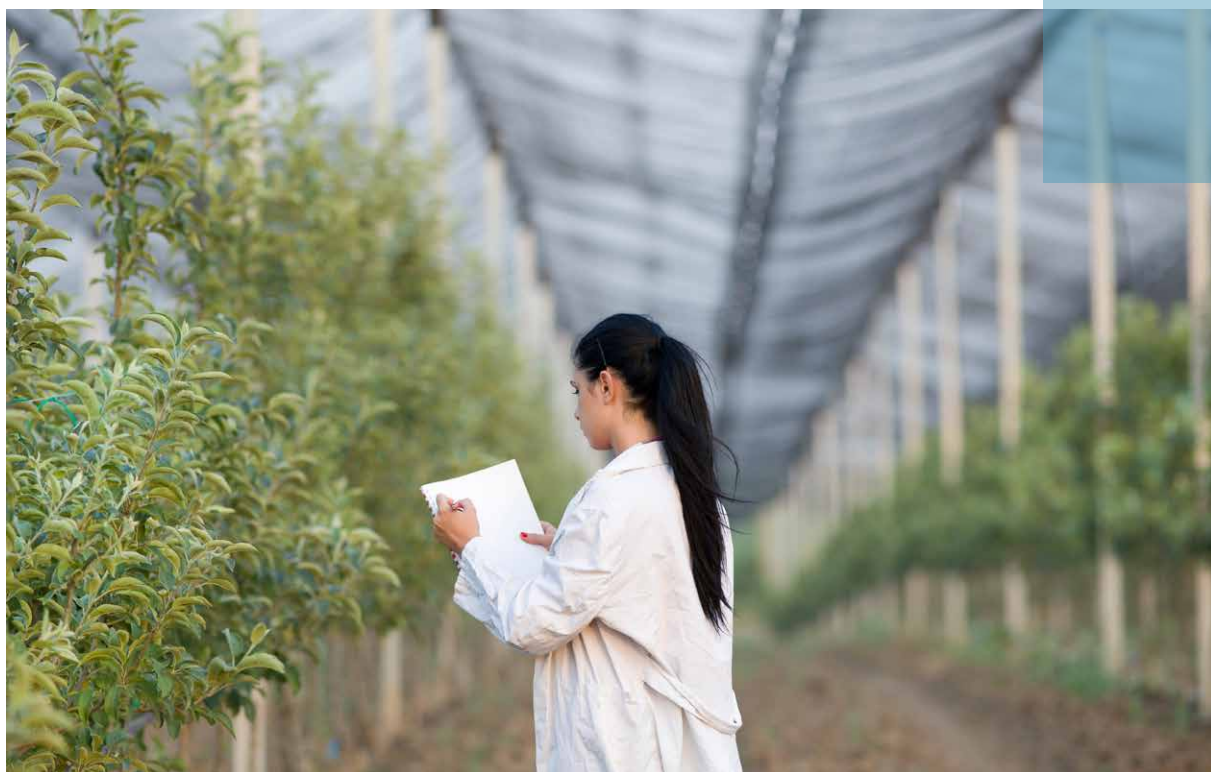
Monitoring the implementation of the strategic objectives 2021-2030

Ministers responsible for science, development, and technology, as well as other departments, will be in charge of implementing the ZRISS 2030 in accordance with their respective responsibilities. They report on its implementation to the Government of the Republic of Slovenia, which forwards the report to the National Assembly of the Republic of Slovenia.

The Development Council of the Republic of Slovenia also monitors the results, effects, and developments in the field of R&I, including the implementation of the Scientific Research and Innovation Strategy.

The ministry responsible for science, in collaboration with the ministry responsible for technology, and in collaboration with international peer-counselling experts, prepares a periodic analysis of the achievements of the strategic objectives, analyses risk factors, and updates measures to manage and mitigate their negative impacts.

If necessary, an update of the action plans for the implementation of ZRISS 2030 is prepared, based on the results of the evaluations and analyses.



Stakeholders' involvement in the process of preparing zriiss 2030

ZRISS 2030 is based on the outputs of the STC, which is an expert advisory body to the Government of the Republic of Slovenia in the field of research and is also composed of representatives of researchers, technology developers and companies, representative trade unions and the public. A group of external experts also assisted in the preparation of ZRISS 2030, which co-created its draft version based on the initial position paper of STC.

On 5 July 2021, the ZRISS 2030 draft was published for public consultation, which lasted until 4 August 2021. 31 organisations and individuals responded to the draft. The ZRISS 2030 draft was also presented to stakeholders directly at the SVIZ (Education, Science and Culture Trade Union of Slovenia) event on 2 September 2021, the ASEF (American Slovenian Education Foundation) event on 3 September 2021, the SRIP – MATPRO event on 7 October 2021, and the KOsRIS (Coordination of Independent Research Institutes of Slovenia) meeting on 14 October 2021. A series of six workshops was also held, which were open to the interested public. The workshops focused on individual chapters of ZRISS and were held between 25 and 28 October 2021.

Due to the concurrent and complementary preparations of the National Programme for Higher Education and ZRISS 2030, an additional consultation with research organisations was organised on 15 September 2021 via a virtual platform.

Government action plans for the implementation of ZRISS 2030

Within one year of the adoption of ZRISS 2030, the ministry responsible for science, in collaboration with the ministry responsible for technology, shall prepare the sectoral action plans for ZRISS 2030 implementation, as outlined in the introduction. The action plans shall define the plan of activities within the framework of the measures proposed, the implementation timetable, the actors responsible for implementation, the envisaged indicators for individual measures, and the mechanisms and sources of financing. The action plans shall be sent to the Government of the Republic of Slovenia for adoption.

Indicators for monitoring the effectiveness of national policy for the implementation and promotion of scientific research and innovation activities

With ZRISS 2030, Slovenia is firmly embedded in ERA, where its performance is measured in relation to other Member States. The standard analytical tool in this context is a system of indicators that measures the strengths and weaknesses of EU Member States' R&I systems and their progress on the basis of a composite European Innovation Scoreboard (EIS). The elements of the composite indicators illustrate the relevance of the measures in each field. Individual indicators will be monitored in relation to other EU Member States and in relation to time in order to monitor the success of R&I policy implementation.

The structure of EIS in 2021 is based on four sets of indicators and twelve innovation dimensions, for a total of 32 indicators. If the methodology of the EIS changes, the monitoring will follow the revised methodology.

In 2021, the system of EIS indicators is defined in the European Innovation Scoreboard 2021 – Methodology Report⁴.

⁴ Available at: <https://ec.europa.eu/docsroom/documents/45971>, 18 October 2021.

Framework conditions

Human Resources	New doctorate graduates (STEM)
	Percentage population aged 25-34 having completed tertiary education
	Percentage population aged 25-64 participating in lifelong learning
Attractive research system	International scientific co-publications
	Top 10% most cited publications
	Foreign doctorate students
Digitisation	Broadband penetration
	Individuals who have above basic overall digital skills

Investments

Finance and support	R&D expenditures public sector
	Venture capital expenditures
	Direct government funding and government tax support for business R&D
Firm investment	R&D expenditures business sector
	Non-R&D innovation expenditures
	Innovation expenditure per person employed
Use of information technologies	Enterprises providing training to develop or upgrade ICT skills of their personnel
	Employed ICT specialists

Innovation activities

Innovators	SMEs with product innovations (goods and/or services)
	SMEs with business process innovations
Linkages	Innovative SMEs collaborating with others
	Public-private co-publications
	Job-to-job mobility of Human Resources in Science & Technology
Intellectual assets	PCT patent applications
	Trademark applications
	Design applications

Impacts

Employment impacts	Employment in knowledge-intensive activities
	Employment in innovative enterprises
Sales impacts	Medium and high-tech product exports
	Knowledge-intensive services exports
	Sales of new or improved products
Environmental sustainability	Resource productivity
	Air emissions by fine particulate matter (PM 2.5)
	Development of environment-related technologies

List of abbreviations

AJPES	Agency of the Republic of Slovenia for Public Legal Records and Related Services
ALLEA	European Federation of Academies of Sciences and Humanities
ARRS	Slovenian Research Agency
CST	Council for Science and Technology of the Republic of Slovenia
DORA	San Francisco Declaration on Research Assessment
EDF	European Defence Fund
EIC	European Innovation Council
ENRIO	European Network of Research Integrity Offices
EOSC	European Open Science Cloud
EPO	European Patent Office
ERA	European Research Area
ERC	European Research Council
ESFRI	European Strategy Forum on Research Infrastructures
EUIPO	European Union Intellectual Property Office
FAIR	Findable, Accessible, Interoperable, and Reusable
GDP	Gross domestic product
HRS4R	Human Resources Strategy for Researchers
ICT	Information and Communications Technology
IZUM	Institute of Information Science
MGRT	Ministry of Economic Development and Technology
MIZŠ	Ministry of Education, Science and Sport
MJU	Ministry of Public Administration
MK	Ministry of Culture
MKGP	Ministry of Agriculture, Forestry and Food

MOP	Ministry of the Environment and Spatial Planning
MORS	Ministry of Defence
MSCA	Marie Skłodowska-Curie Actions
MzI	Ministry of Infrastructure
NKT	Horizon Europe network of national contact points
NRRI	Research infrastructure Roadmap
OECD	The Organisation for Economic Co-operation and Development
PCT	Patent Cooperation Treaty
R&D	Research and Development
RISS	Resolution on Research and Innovation Strategy of Slovenia 2011-2020
RRP	Recovery and Resilience Plan
SAZU	Slovenian academy of sciences and arts
SDG	Sustainable Development Goals
SRIP	The Strategic Research and Innovation Partnership
SIS	Slovenian Industrial Strategy
SPIRIT	Public Agency for Entrepreneurship, Internationalization, Foreign Investments and Technology
SSS	Slovenian Smart Specialisation Strategy
STC	Science and Technology Council of the Republic of Slovenia
SURS	Statistical Office of Slovenia
SVRK	Government Office for Development and European Cohesion Policy
TRL	Technology readiness level
TTOs	Technology Transfer Offices

