

# **Implementation Plan 2016-2019 for achieving the objectives of the Estonian Research and Development and Innovation Strategy 2014-2020 “Knowledge-based Estonia”**

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## **Chapter 3 National Roadmap for Implementing the European Research Area**

### **Introduction**

The European Research Area (ERA) is one of the cornerstones of the EU flagship initiative Innovation Union and an essential component of the Europe 2020 strategy. It focuses on maximising the potential of European research systems, fostering innovation, strengthening the research and technological capacity of Member States as well as their competitiveness and capability to solve major social problems. In 2015, the EU Competitiveness Council adopted conclusions on the ERA Roadmap 2015-2020 which included a proposal that the Member States should implement the ERA Roadmap by using relevant measures in their national specific action plans or broader RDI strategies by mid-2016<sup>1</sup>.

Some other Member States (e.g. Germany) have developed a specific ERA strategy and action plan, but doing so is not appropriate in Estonia. We have a valid RDI strategy and Operational Programme for EU Structural Funds, which have been drawn up building on the strategic trends and documents of the EU. Hence, the achievement of objectives set out in Estonia's strategic documents essentially means that Estonia contributes to the building of the ERA. The stronger the Estonian research system, the more Estonia can contribute to Europe's economic growth and competitiveness.

To detail Estonia's contribution to ERA Roadmap tasks, we will address these aspects of the Estonian RD strategy more thoroughly by describing these in the Implementation Plan of the strategy, monitoring their implementation and addressing these in a separate chapter in reports concerning the relevant period of the RD strategy. The major objectives of the RDI strategy will be addressed in the action plan of the Government of the Republic and their implementation in the report on the Government's work plan.

This chapter of the Implementation Plan of the RDI strategy highlights the measures envisaged in the RDI strategy and the Operational Programme for Structural Funds (because the strategy activities are partially financed from the EU Structural Funds), which either

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<sup>1</sup> <http://data.consilium.europa.eu/doc/document/ST-8975-2015-INIT/et/pdf>

directly or indirectly contribute to the implementation of the ERA Roadmap's priorities. The ERA Implementation Plan will be renewed in the same cycle with the Implementation Plan of the RDI strategy, and the monitoring of the ERA National Roadmap will take place in line with monitoring the Implementation Plan of the RDI strategy by devoting a separate chapter to it. The Research and Development Council (RDC) will discuss and the Government of the Republic will approve the ERA National Roadmap concurrently with the Implementation Plan of the RDI strategy.

The ERA priorities were identified in the Communication on strengthening ERA partnerships issued by the Competitiveness Council in 2012. Consequently, the ERA Roadmap identifies a limited number of priorities that have the greatest impact on European research and innovation. Due to the differences in national RD systems, each Member State will determine the suitable approach for implementing the ERA priorities. At the end of 2015, the European Research Area and Innovation Committee (ERAC) provided the core indicators for monitoring the implementation of the ERA Roadmap.<sup>2</sup> For national monitoring, the ERA indicators will be combined with available indicators that best characterise our system's development, and synchronised with the monitoring cycles of the ERA Roadmap (once every two years).

**Priorities of the European Research Area:**

1. Effective national research systems
2. Optimal transnational cooperation and competition (jointly addressing grand challenges and effective investment in research infrastructures)
3. An open labour market for researchers
4. Gender equality and gender mainstreaming in research
5. Optimal circulation, accessibility and transfer of scientific knowledge
6. International cooperation

The following table brings out activities in the RDI strategy, which conform to ERA priorities. A lot of measures listed in the RDI strategy and interrelated. The most important activities have been listed for each ERA priority.

**Table 1. ERA priorities, objectives, indicators and measures/activities in RDI strategy**

<b>Priority 1. Effective national research systems</b>	
Objective	<p>A national RD system that has an appropriate structure and functions effectively. Consistent monitoring and evaluation of research and innovation policies in making political choices as well as implementation decisions; taking into account the best practices of other countries and the EU in identifying shortcomings and success factors; increasing efficiency and effectiveness on national as well as European level. Achievement of tasks set out in the RDI strategy.</p> <p>Enhance the excellence and efficiency of the RDI system. Increasing the level of financing of public sector RD to 1% of GDP. Improve cooperation between enterprises and RD institutions, and between ministries and RD institutions.</p>

<sup>2</sup> The ERA operational programmes of Member States should contain indicators, incl. their start levels.

Indicators	<ul style="list-style-type: none"> <li>• Composite indicator based on the Research Excellence Indicator developed by JRC (components: Highly cited publications; PCT patents; ERC grants; MSC actions).</li> <li>• Level of investment in public sector RD. Base level 2014: 0.81% of GDP; target: achieve and maintain a level of 1% of GDP.</li> <li>• Number of high-level articles per million inhabitants (<i>Eurostat; Thompson Reuters Web of Science</i>). Base level 2014: 1551; target for 2020: 1600.</li> <li>• Share of the expenditure of the public sector RD financed by the private sector. Base level 2014: 4%; target for 2020: 7%.</li> </ul>
Activity in RDI Strategy and support measures in the Operational Programme for EU Structural Funds	<p>1. Support the development of the areas of responsibility of institutions of higher education and research and development institutions, also their structural changes, focussing on fundamental strategic activities and the reorganisation of the network of institutions; increase the responsibility of research institutions for the effectiveness of their activities. (RDI Strategy, p. 1.1.)  <b>Support measures: Institutional Development Program for Research and Development Institutions and Higher Education Institutions (ASTRA);</b> EU Structural Funds.</p> <p>2. Ensure an increase in the volume of the main funding instruments of RD (baseline financing, institutional and personal research grants, grants for maintenance and sustainable development of infrastructure, etc.) in line with temporary investments from Structural Funds to achieve the sustainability of the RDI system and the realisation of the established capacity. The requested synergy of different financing instruments and the balanced development of the RDI system will be ensured. (RDI Strategy, p. 1.2.)  <b>Support measures:</b> Increase the stability of research funding and, to this end, increase the baseline financing of research institutions with the aim of achieving an equal distribution between baseline financing and competitive research grants (action plan 2015-2019 of the Government of the Republic). Making proposals for the State Budget Strategy to ensure that RD is financed according to the objectives set out in the RDI strategy.</p> <p>3. Support research centres of excellence to advance world-class research. Support research grant applicants - who achieve very good results in top-level international competitions (European Research Council (ERC), European Molecular Biology Organization (EMBO)) but who do not receive a positive financing decision - in carrying out their planned research in Estonia.(RDI Strategy, p. 1.3. and 1.4)  <b>Support measures:</b> EU Structural Funds' measures "<b>Supporting centres of excellence</b>" and "<b>Supporting internationalisation, mobility and a new generation of researchers in the research and higher education through the Mobilitas Plus programme</b>".</p> <p>4. Reinforce, with the help of EU Structural Funds and activities financed from the state budget, the capacity of Estonian research institutions to participate in forms of cooperation based on quality competition, incl. in the programme Horizon 2020. (RDI Strategy, p. 1.5.)  <b>Support measures:</b> EU Structural Funds' measures "<b>Supporting</b></p>

	<p><b>internationalisation, mobility and a new generation of researchers in research and higher education through the Mobilitas Plus programme",</b> and measures from the state budget funded from Estonian tax revenue. Support for preparing ERC applications. Further development of RDI support structures and RDI support activities: the setting of priorities, development of networks.</p> <p>5. Take measures to increase the responsibility and capacity of ministries in the field of research and development. Create forms of inter-ministerial cooperation for additional funding and the better organisation of research and development in areas of government, proceeding from the principle that the main responsibility for the RD financed for socio-economic purposes lays on the ministry in charge of the field. (RDI Strategy, p. 2.12.) <b>Support measures:</b> EU Structural Funds' activity "<b>Enhancing sectoral research and development</b>" (RITA), plus the expenditure of ministries on sectoral RD.</p> <p>6. RDI, which forms the basis for changing the economic structure, is based on smart specialisation (RDI Strategy, p. 3.1-3.6). <b>Support measures:</b> The sub-measure „<b>Supporting applied research in growth areas of smart specialisation</b>“ of the EU Structural Funds' measure "Increasing the local socio-economic impact of the RDI system and smart specialisation for developing growth areas" supports research which is aimed at gaining new knowledge and skills. It results in new or improved products, production processes or services. The sub-measure "Specialised scholarships in higher education in the growth areas of smart specialisation" motivates students to pursue full-time studies in areas that the businesses and the government consider as having potential (growth areas of smart specialisation), and helps to ensure the required number of researchers and specialists.</p>
<b>Priority 2. Optimal transnational cooperation and competition</b>	
Objective	<p>Increase participation in the joint programming of research activities and the ensuing initiatives (e.g. joint programming initiatives). Set national priorities that are in line with the priorities of the European Strategy Forum on Research Infrastructures.</p>
Indicators	<ul style="list-style-type: none"> <li>• National GBAORD allocated to Europe-wide, bilateral or multilateral transnational public R&amp;D programmes per researcher in the public sector. Base level 2014: 976.7</li> <li>• Availability of national roadmaps with identified ESFRI projects and corresponding investment needs. Estonia has the corresponding roadmap in place - adopted by the Government of the Republic in 2014.</li> </ul>
Activity in RDI Strategy and support measures in the Operational Programme for	<p>1. Ensure in inter-ministerial cooperation the participation of Estonia in initiatives of the European Research Area, coordinate between ministries the participation of Estonia in research programmes of the Member States implemented for socio-economic objectives. (RDI Strategy, p. 4.1) <b>Support measures:</b> The activity is supported by the <b>programme for enhancing the RD capacity of public authorities (RITA)</b>, and the <b>Mobilitas Plus programme for supporting internationalisation, mobility and a new</b></p>

EU Structural Funds	<p><b>generation of researchers in research and higher education sector</b> (EU Structural Funds). Also, from the international cooperation grants of the Estonian Research Council and the ministries (support from the Estonian state budget funded from tax revenue).</p> <p>2. Ensure systematic development of infrastructure, incl. digital infrastructure. Plan investments in research infrastructure of national importance on the basis of a regularly updated action plan, in accordance with the quality conditions established in links with international infrastructures. Create opportunities for Estonian enterprises and research and development institutions for receiving high-technology orders through the participation in international research infrastructures. (RDI Strategy, p. 1.12 and 4.6. Plus support activities 1.11, 2.3, 4.2.)</p> <p><b>Support measures:</b> The activity is supported from the measure "<b>Supporting of research infrastructures of national importance based on the roadmap</b>" (EU Structural Funds).</p>
<b>Priority 3. An open labour market for researchers</b>	
Objective	Use open, transparent and performance-based recruitment methods for research-related positions. Make Estonia more attractive as a host country of research, development, innovation and higher education.
Indicator	<ul style="list-style-type: none"> <li>Open recruitment: researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector per year. Base level to be specified.</li> </ul>
Activity in RDI Strategy and support measures in the Operational Programme for EU Structural Funds	<p>1. Develop a career model which supports cooperation with enterprises and individual development opportunities, encourages occupational mobility, incl. in the entrepreneurial sector, and motivates young people to choose the profession of a researcher or an engineer. Support the openness of competitions for academic positions to foreign researchers. Monitor that equal opportunities, incl. gender balance, be ensured when filling positions, allocating grants and forming decision-making bodies. (RDI strategy p. 1.6).</p> <p><b>Support measures:</b> Supporting national legal framework; recruitment and personnel policy of RD institutions and participation of the Estonian Research Council and RD institutions in the EURAXESS network. EU Structural Funds support the activities through regulations as well as financially through <b>Mobilitas Plus programme that supports internationalisation, mobility and a new generation in research</b>, and <b>Dora Plus programme that supports internationalisation, mobility and a new generation in higher education</b>.</p>

	<p>2. Continue shaping, in inter-ministerial cooperation, a smart and flexible talent management and migration policy, and policy supporting the adaptation of new immigrants, which would increase the attractiveness of Estonia as a target country for research and study. Increase researcher mobility, incl. from enterprises, and ensure integrated financing of the research groups led by top researchers who have come to or are already in Estonia (RDI Strategy p. 1.8 and 1.9).</p> <p><b>Support measures:</b> Continue developing the supporting national legal framework (e.g. Aliens Act that supports the objectives, transposition of the Student and Researcher Mobility Directive, visa regulations, Research and Development Organisation Act, Universities Act). Other support measures contributing to the activity are the adaptation programme activities, recruitment and personnel policy of RD institutions, participation in the EURAXESS network, ensuring equal opportunities when filling positions, allocating grants and forming decision-making bodies, and EU Structural Funds' measures, such as <b>Mobilitas Plus</b> and <b>Dora Plus</b>.</p>
<b>Priority 4. Gender equality and gender mainstreaming in research</b>	
Objective	Reduce gender inequality in research institutions and decision-making bodies and better integrate the gender dimension in the RD policy, programmes and projects.
Indicator	<ul style="list-style-type: none"> <li>Proportion of women A grade in Higher Education Sector. There are no official data yet; the European Commission will specify the definition of the indicator.</li> </ul>
Activity in RDI Strategy	<p>Monitor that equal opportunities, incl. gender balance, be ensured when filling positions, allocating grants and forming decision-making bodies (RDI Strategy, p. 1.6)</p> <p><b>Support measures:</b> Policies and activities in ministries, research institutions, universities and funding organisations:</p> <ul style="list-style-type: none"> <li>Respecting the good legislative practice, incl. assessing the impact of legislative drafting on gender equality.</li> <li>Recognising the principles of gender equality in policy-making and preparation and implementation of RDI support measures.</li> <li>Promoting gender equality in RD institutions by means of structural changes, incl. in the development of recruiting and personnel policy.</li> <li>Creating equal opportunities in decision-making and assessment bodies to achieve a gender-balanced composition. Recognising the gender aspect in substantive research (ETAG) - the gender aspect is recognised in evaluations and, for example, gender equality experts are involved where necessary.</li> </ul>
<b>Priority 5. Optimal circulation, accessibility and transfer of scientific knowledge</b>	
Objective	<p>Fully implement the knowledge transfer policy at the national level to maximise the dissemination, acceptance and use of research results. The organisations conducting and financing research should make knowledge transfer cross-cutting by integrating it into their daily routines.</p> <p>Promote open access to research publications.</p>

Indicator	<ul style="list-style-type: none"> <li>Percentage of product or process innovative firms collaborating with higher education institutions or with public research institutions for their innovation activities.</li> <li>The proportion of Open Access papers (Gold and Green OA only) per country.</li> </ul>
Activity in RDI Strategy and support measures in the Operational Programme for EU Structural Funds	<p>1. Review the motivation system related to commercialisation in universities, linking it with the main objectives and the financing of universities. Increase the professionalism and impact of commercialisation and reinforce links with other participants in the innovation system. Continue the development of competence in the field of knowledge transfer, incl. the training and bringing in of experts, the development of the organisation and quality of knowledge transfer and the extension of the international contact network. Promote increasing awareness of intellectual property among researchers, students as well as the non-academic staff of universities. Support enterprises in the development of products and services of high added value in cooperation with universities and RD institutions, incl. continuing, also in traditional economic sectors, to increase added value through RD and improve the strategic development capacity of enterprises. Encourage raising more money from the private sector for financing universities. (RDI Strategy, p. 2.4, 2.7, 2.9. Plus support activities 2.6 and 2.2.)</p> <p><b>Support measures:</b> The activity is supported from the EU Structural Funds' measures „<b>Supporting applied research in growth areas of smart specialisation</b>“, and “<b>The Institutional Development Program for Research and Development Institutions and Higher Education Institutions</b>” (ASTRA). The study of Intellectual property rights financed from “<b>The Programme for Monitoring Research and Innovation Policy</b>” (TIPS), will contribute to increasing awareness of intellectual property (monitoring area 1).</p> <p>2. Encourage open access to public-financed research results and research data. Support extensions to databases in research institutions and research libraries, and ensure access to the most important research databases. Support consistently the preservation, expansion, digitisation and availability of data archives and research collections that are important for research and culture. Continue the development of central research information systems and services with the objective of making these convenient for foreign users (incl. state authorities and enterprises) and to allow fast access to research topics, performers and results. (RDI Strategy, p. 2.11, 1.11. Plus support activity 2.10.)</p> <p><b>Support measures:</b> Development of necessary regulations and support infrastructures - the main instruments for financing research provide the requirement of open access to research publications (at least Green Open Access). Activities are supported in the framework of acquiring licences for research databases and supporting research libraries and collections.</p>
<b>Priority 6. International cooperation</b>	
Objective	Develop and implement strategic approaches and activities required for international cooperation in the field of research, technology and innovation.
Indicator	<ul style="list-style-type: none"> <li>International scientific co-publications per thousand researchers (FTE)</li> </ul>

	<p>in the public sector.</p> <ul style="list-style-type: none"> <li>• Share of foreign researchers in the total number of researchers; the share of researchers from third countries. Base level: 2014 – 5.5% of foreign researchers, 2.5% from third countries.</li> </ul>
<p>Activity in RDI strategy and support measures in the Operational Programme for EU Structural Funds</p>	<p>Develop cooperation opportunities with third country researchers and research institutions. Enhance the international communication of achievements by Estonian research and researchers as well as the innovation activities of enterprises. Ensure in inter-ministerial cooperation the participation of Estonia in initiatives of the European Research Area, incl. in the joint programming of research, European innovation partnerships, and initiatives of the common area of the Baltic and Nordic countries. (RDI Strategy p. 4.4, 4.5, 4.1)</p> <p><b>Support measures:</b> The activity is supported by the EU Structural funds under measures "<b>Internationalisation of research and higher education</b>", <b>Mobilitas Plus (programme for supporting mobility and a new generation)</b>, and in the framework of funding international cooperation by the Estonian Research Council.</p>