

# Investing in R&D and the development of an innovative and smart economy: a “map” of achievements, lessons learnt and the remaining development needs

## SUMMARY

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## Introduction

The map of investments in R&D and the development of innovative and smart economy: achievements, lessons learnt and the remaining development needs lay down the trends of research, development and innovation (RDI), growth and competitiveness of small and medium-sized enterprises (SMEs), and skills for smart specialization, transitional period of the industry and entrepreneurship of the Ministry of Economy and Innovation and the Ministry of Education, Science and Sport for the 2014-2020 EU financial period.

The aim of the document is to refine the logic behind state investments establishing ways to develop activities of RDI, SMEs and skills. The first part of the report discusses the challenges in the implementation of activities of RDI, SMEs and skills in order to identify the key development needs and the lessons learnt in the 2014-2020 (and earlier) programming periods, also focusing on discussing positive trends and achievements. The review refers to results of ex-ante evaluations and research, but the purpose of this document is not to provide an evaluation of all the measures financed, as they require separate evaluations.

The second part of the report discusses possible activities in the development of RDI, SMEs and the necessary skills, also identifying the necessary conditions for investments to have the expected effect.

The analysis was conducted taking into account the Letter No. (24.77E-03)-6K-1905422 2019 of the Ministry of Finance of the Republic of Lithuania of 18 October 2019 and minutes No. 47 of the Government of the Republic of Lithuania of 20 November 2019.

## 1. Trend and lessons learnt

### 1.1. RDI capacities and advanced technologies of the business sector

Challenges	Lessons learnt	Remaining gaps
Low ratio of business investments in RDI to GDP	<ul style="list-style-type: none"> <li>➤ There is a lack of interconnection of measures for investment incentives that cover RDI activities of different enterprises at different stages;</li> <li>➤ The existing measures are not sufficient and do not ensure the systematic transformation of enterprises to high-tech and medium-high tech enterprises.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To increase the interoperability of measures, to coordinate and aggregate measures, to implement comprehensive RDI programmes;</li> <li>➤ To encourage systematic creation and provision of innovation support and consulting services to enterprises, initial work related to enterprises, their ideas and long-term planning of enterprise development;</li> <li>➤ To provide for separate measures or funding subsidies for regions.</li> </ul>
Low level of foreign direct investment (FDI) in RDI	<ul style="list-style-type: none"> <li>➤ Lithuania lags far behind other countries in the region in terms of the share of FDI accrued in the country compared to its GDP;</li> <li>➤ The measures being implemented allowed to attract a significant number of FDI projects;</li> <li>➤ The potential to promote brownfield regeneration remains untapped;</li> <li>➤ FDI incentives are not in demand due to inappropriate method of their implementation, co-financing and lack of quality applications.</li> </ul>	<ul style="list-style-type: none"> <li>➤ There is a lack of incentives for investors operating in Lithuania to attract their divisions that carry out R&amp;D activities and create higher value-added products, aftercare services;</li> <li>➤ There is a lack of infrastructure for optimal functioning of free economic zones in the zones and industrial, research and technology parks;</li> <li>➤ Conditions are not created for financing “build to suit” infrastructure projects, thus the potential to attract the so-called brownfield investments remains untapped.</li> </ul>

<p>Weak integration of SMEs in international value chains (IVCs) and international initiatives</p>	<ul style="list-style-type: none"> <li>➤ The existing cluster support schemes contribute more to the support of the existing clusters, but do not necessarily ensure the maturity of clusters and the development of common products in the value chain;</li> <li>➤ Lithuanian businesses and research and higher education institutions (REI) get insufficiently involved in international RDI projects;</li> <li>➤ Measures designated for clusters have been observed to be fragmented, therefore the aim to consolidate the measures is relevant.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To create a more comprehensive cluster programme financing different types of activities for clusters of different maturity level linking them to cluster incubation / support services;</li> <li>➤ Financing can be allocated as a long-term subsidy for at least 5 years, if a cluster demonstrates good performance, thus facilitating the development of cluster maturity, networking, export of services and joint RDI activities;</li> <li>➤ To finance clusters operating in areas of priority to the state;</li> <li>➤ To finance strategy-based participation in IVCs.</li> </ul>
<p>Insufficient share of innovative enterprises among all enterprises</p>	<ul style="list-style-type: none"> <li>➤ The measure “Inostartas” does not meet the needs of the target group for using it.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To encourage the creation and development of innovative start-ups operating internationally and new or spin-off enterprises engaged in RDI activities;</li> <li>➤ To implement measures for early stage start-ups, to promote maturation, incubation and acceleration programmes.</li> </ul>
<p>Low level of business cooperation with research institutions</p>	<ul style="list-style-type: none"> <li>➤ The “Inočekiai” measure for the promotion of outsourced research in the traditional business sector is the most appropriate instrument for promoting</li> </ul>	<ul style="list-style-type: none"> <li>➤ Systemic changes are needed in research and higher education institutions, including the creation of incentives for researchers to work with business representatives, facilitation of</li> </ul>

	<p>business and research cooperation;</p> <ul style="list-style-type: none"> <li>➤ A few SMEs only are able to implement large RDI projects with research and higher education institutions;</li> <li>➤ Cooperation between business and science has been encumbered by vague interconnection between the measures implemented by the Ministry of Economy and Innovation (EIMIN) and the Ministry of Education, Science and Sport (ŠMSM).</li> </ul>	<p>conditions for researchers to provide experimental development and business consulting services, especially for young researchers.</p> <ul style="list-style-type: none"> <li>➤ Cooperation between research and business would be enhanced by better management, assurance of the provision of services to research and higher education institutions, and the reduction of administrative burden inside research and higher education institutions and the share of projects allocated therefor.</li> </ul>
<p>Insufficiently innovative public sector organizations</p>	<ul style="list-style-type: none"> <li>➤ Measures promoting pre-commercial procurement can create significant added value;</li> <li>➤ Despite some positive changes, innovation indicators of the Lithuanian public sector still remain poor, the quality of public services is insufficient, and public sector organizations still lack incentives to create innovations.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To encourage the progress of the public sector for it to fund targeted measures focused on stimulating the demand for innovation;</li> <li>➤ To implement measures for providing consultations and legal assistance to organizations willing to engage in pre-commercial or innovative public procurement;</li> <li>➤ To create a tool for the procurement of innovative products (innovative public procurement), which would allow public sector organizations to try a way of procurement of RDI results, which would be similar, but would better meet their needs;</li> <li>➤ To implement targeted RDI programmes by expanding the necessary research carried out by</li> </ul>

		<p>the Research Council of Lithuania, allocating more funding to them and allowing not only research and higher education institutions, but also businesses to participate in them.</p>
<p>There is no clear, uniform and qualified innovation support system</p>	<ul style="list-style-type: none"> <li>➤ There is no continuous system for the provision of innovation support services, which would be financed from the national budget funds;</li> <li>➤ A consistent approach and harmonized measures for improving the ability of businesses to master innovation is missing;</li> <li>➤ There is no common, integrated and qualified ecosystem created, which would provide innovation support and consultation services to businesses;</li> <li>➤ The current projects are poorly interconnected, their activities are fragmented, while the services of facilitation of the innovation process, support and consultations provided to enterprises make up a small share of all the necessary support services;</li> <li>➤ An excessive attention has been placed on promotion and publicity services, lacking consultations.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To create a clear and uniform innovation support system, which would allow to consistently develop the ability of enterprises to master innovations Lithuania-wide;</li> <li>➤ Innovation support and consultation services should be provided on a continuous basis, i.e. they should be planned as normal public sector services rather than as an implementation of short-term projects.</li> <li>➤ Business consultations should be specialized and as personalized as possible.</li> </ul>

## 1.2. Researchers

Challenges	Lessons learnt	Remaining gaps
Few researchers in business	<ul style="list-style-type: none"> <li>➤ Incentives for business investment in RDI have led to an increase in the number of researchers in business;</li> <li>➤ Direct incentives for businesses to employ researchers have not yet paid off.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To improve the quality of doctoral studies, to help doctoral students to acquire competences necessary for researcher career in business;</li> <li>➤ To improve incentive mechanisms for businesses to hire researchers.</li> </ul>
There are too few doctoral graduates	<ul style="list-style-type: none"> <li>➤ Additional funding from European Structural and Investment Funds for doctoral study places did not affect a change in the number of doctoral students and graduates;</li> <li>➤ Only about a half of doctoral students graduate;</li> <li>➤ Few graduates in certain areas (such as ICT) has become a major impediment to RDI development and economic growth.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To improve the quality of doctoral studies;</li> <li>➤ To provide for mechanisms to ensure that doctoral students earn sufficient income for making a living from activities at research and higher education institutions directly related to their doctoral studies.</li> </ul>
Low appeal of the Lithuanian RDI system to researchers from abroad	<ul style="list-style-type: none"> <li>➤ So far, the measures carried out did not allow attracting the critical mass of researchers;</li> <li>➤ Costs of attracting one experienced researcher are very high.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To focus investments in order to attract a critical mass of researchers in priority areas;</li> <li>➤ To strategically exploit instruments of the EU Framework Programmes in order to increase the awareness / prestige of the measures being implemented in Lithuania and to reduce the</li> </ul>



		costs of attracting researchers.
The appeal of researcher career remains low - without addressing this issue, investments will not have the expected effect in many other areas	<ul style="list-style-type: none"> <li>➤ Low salary paid (especially to young researchers) and high salary fluctuations have an adverse impact on the appeal (lack of appeal) of the career in particular.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To increase long-term financing of research and higher education institutions from the national budget;</li> <li>➤ Tender-based RDI funding from European Structural and Investment Funds shall be spread over time and be based on a call calendar known in advance.</li> </ul>

### 1.3. Research and development infrastructure

Challenges	Lessons learnt	Remaining gaps
Growth in the scope and quality of research requires modern national R&D infrastructures and access to European infrastructures	<ul style="list-style-type: none"> <li>➤ Previous investments are too “scattered”. Not all the developed R&amp;D infrastructures have been put in use due to the lack of competences of researchers and RDI management. Most infrastructures are likely to be financially non-sustainable, i.e. they do not earn sufficient income to replace worn-out equipment or purchase new one that meets the changing needs and technological capabilities.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To participate in European R&amp;D infrastructures based on the analysis of long-term needs, opportunities and benefits.</li> </ul>
Better management of R&D infrastructure development	<ul style="list-style-type: none"> <li>➤ Many infrastructures have been developed on a project basis with a perspective of financing for a few years; there is a lack of a long-term infrastructure development concept and its implementation mechanisms.</li> <li>➤ The impact that the already created infrastructures have on R&amp;D development and the needs that remain unmet are not clear.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Before planning further investments in infrastructure, improving legal regulation and the strategic planning process is necessary.</li> </ul>

### 1.4. Creating high-level knowledge

Challenges	Lessons learnt	Remaining gaps
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Creating high-level knowledge	<ul style="list-style-type: none"> <li>➤ A significant breakthrough has not been achieved in the past decade, despite changes in the financing system and ever-increasing requirements. A more detailed evaluation is needed to identify the reasons therefor.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Foreign experts recommend:</li> <li>➤ To strengthen internationalization: a) to encourage researchers to go for internships abroad; b) to post publications in prestigious periodicals; c) to strengthen the abilities to prepare applications for international R&amp;D programmes.</li> <li>➤ To improve the quality of doctoral studies.</li> <li>➤ To raise salaries for researchers.</li> </ul>
To create conditions for creating high-level knowledge	<ul style="list-style-type: none"> <li>➤ Even though the scope of funding for R&amp;D activities carried out by research and higher education institutions has increased, it still remains one of the lowest in the EU.</li> <li>➤ Dependence on European Structural and Investment Funds has led to significant fluctuations in scopes of funding, which has had an adverse impact on the implementation of ambitious long-term R&amp;D activities.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To increase the scope of R&amp;D funding from the national budget.</li> <li>➤ To avoid fluctuations in R&amp;D funding scopes. To compile a multi-annual plan for tender-based R&amp;D funding and to comply therewith in periodically announcing calls for applications.</li> <li>➤ To avoid fragmentation, i. e. separate calls for specific activities, funding small-scale, short-term projects.</li> </ul>

### 1.5. Knowledge transfer, commercialization and entrepreneurship

Challenges	Lessons learnt	Remaining gaps
Strengthening knowledge transfer and commercialization capacity	<ul style="list-style-type: none"> <li>➤ Even though there are many organizations (or structural divisions of research and higher education institutions), their institutional capacity to mediate between research and business,</li> </ul>	<ul style="list-style-type: none"> <li>➤ To reduce fragmentation of measures and to strengthen institutional capacity of intermediaries to perform their functions. This requires: (a) granting funding directly to</li> </ul>

	<p>to provide knowledge transfer and commercialization services has not been developed; for many years, these organizations have not received significant funding to perform their direct functions. The funding and support system is too fragmented.</p>	<p>intermediaries; (b) linking investments to ambitious return indicators and financial sustainability of intermediaries (i.e. the ability to sustain themselves and to generate financial returns for their stakeholders) in the long term; (c) provide for long-term, tier funding, which would increase steadily if the goals set were achieved in the previous period; (d) to encourage intermediaries to integrate into international ecosystems (such as the programme of the European Institute of Technology and Innovation).</p>
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### 1.6. International cooperation

Challenges	Lessons learnt	Remaining gaps
<p>Participation in international R&amp;D programmes</p>	<p>➤ The scale of participation in international programmes remains low. The underlying reasons have not changed (underdeveloped internal capacity of research and higher education institutions to provide comprehensive support to researchers; limited number of internationally competitive research teams; lack of incentives to participate in international programs); at national level</p>	<p>➤ To integrate goals for promoting internationalization in all intervention groups, i.e. to encourage:</p> <ul style="list-style-type: none"> <li>• attraction of researchers from abroad and international internships of Lithuanian researchers;</li> <li>• integration into European R&amp;D infrastructures;</li> <li>• creation of the highest-level knowledge and participation in international networks of researchers;</li> <li>• involvement in international networks for knowledge transfer</li> </ul>

		and commercialization, entrepreneurship skills development.
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### 1.7. Strengthening the growth and competitiveness of SMEs

Challenges	Lessons learnt	Remaining gaps
To maintain growth of the entrepreneurship level	<ul style="list-style-type: none"> <li>➤ The overall level of entrepreneurship in Lithuania is among the highest in Europe;</li> <li>➤ New businesses and small enterprises face market failures the most (including access to capital, lack of human resources, lack of competences, information asymmetries, etc.);</li> <li>➤ Low level of entrepreneurship in regions;</li> <li>➤ Insufficient measures for early-stage start-ups;</li> <li>➤ Venture capital funds can invest the major share of the allocated EU funds in Lithuania only;</li> <li>➤ “Soft” measures for promoting entrepreneurship ecosystem are important for the creation of the start-up ecosystem.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To focus investments on enterprises with the highest growth potential in Lithuanian and international markets;</li> <li>➤ To focus measures on promoting entrepreneurship in regions;</li> <li>➤ To finance not only the creation of new incubation and acceleration programmes, but also to encourage start-ups to participate in prestigious international acceleration programmes by reimbursing a part of costs of participation in them;</li> <li>➤ To improve the ecosystem favourable for private venture capital funds, especially through the implementation of tax incentives;</li> <li>➤ A low-value measure (up to EUR 40 000) is necessary at the beginning of enterprise’s activities (establishment, development of an enterprise, purchase of work equipment, compensation of costs of rent of premises).</li> </ul>
Low level of internationalization of SMEs	<ul style="list-style-type: none"> <li>➤ Measures have a limited direct contribution to export growth in the short run due to a small scale</li> </ul>	<ul style="list-style-type: none"> <li>➤ To finance purchasing knowledge from abroad (for example, by hiring professionals), financing trainings abroad or promoting employee</li> </ul>

	<p>of the measures and the fact that the country's exports have been affected by much stronger external factors and cyclical fluctuations;</p> <ul style="list-style-type: none"> <li>➤ Shortage of specialists that have knowledge of sales and marketing in Western markets, and certain specific competences;</li> <li>➤ Fragmentation of EU fund measures for clusters.</li> </ul>	<p>exchanges with foreign companies, technology bridge measures;</p> <ul style="list-style-type: none"> <li>➤ Combining measures for clusters would be expedient, then focusing them on increasing the competitiveness of specific clusters or groups of clusters and the development of economic activities and the process of their aggregation;</li> <li>➤ To promote a long-term strategic attitude of cluster members, to change the attitude of enterprises to networking and to promote a culture of cooperation; to mature skills of cluster coordinators; to utilize the knowledge and infrastructure of cluster enterprises.</li> </ul>
<p>Low productivity levels of SMEs</p>	<ul style="list-style-type: none"> <li>➤ The competitiveness of regions with weaker absorption capacities has been lower compared to that of major cities;</li> <li>➤ For low and medium-low-tech companies to remain competitive, it is important to invest in technology upgrades, introduction of digital technologies, improvement of technological readiness of enterprises, higher value-added products, increase of productivity and digitalisation;</li> <li>➤ Digital maturity of enterprises is still relatively low, and the need for digitization will</li> </ul>	<ul style="list-style-type: none"> <li>➤ Enterprises still need to: raise digitization and technological competences, carry out small projects in e-business, especially for enterprises providing services;</li> <li>➤ To differentiate financing under the measure “Industrial Digitization LT” for smaller and larger projects of production companies seeking to apply advanced e-commercial solutions that are relevant for the implementation of smart specialization.</li> </ul>

	increase in the future.	
Low level of SME investment in eco-innovation and other resource-efficient technologies	<ul style="list-style-type: none"> <li>➤ Lack of political instruments to promote eco-innovation;</li> <li>➤ Poor perception of the importance of eco-innovation of public authorities and SMEs;</li> <li>➤ Investments in eco-technologies are not necessary for most SMEs in the provision of services or production;</li> <li>➤ The measure “Eco-innovations LT +” is basically the only incentive to implement technological eco-innovation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To educate enterprises on eco-innovation and its benefits, to create other incentives, for example: to develop an ecosystem for the collection and recycling of industrial waste, and reuse of resources; tax incentives and financial instruments encouraging the use of secondary resources and eco-innovation.</li> </ul>

### 1.8. Skills for smart specialization, transitional period of the industry and entrepreneurship

Challenges	Lessons learnt	Remaining gaps
Mismatch between supply and demand of specialists and their required competences	<ul style="list-style-type: none"> <li>➤ Too few engineers and technology specialists have been prepared;</li> <li>➤ Specialist competences do not fully meet the needs of the labour market;</li> <li>➤ Industry-related higher education and vocational training programmes are not attractive and do not meet market needs;</li> <li>➤ There are no mobile vocational information and guidance services</li> </ul>	<ul style="list-style-type: none"> <li>➤ To improve the system of monitoring and forecasting human resources;</li> <li>➤ To implement measure, which would allow ensuring the development of human resources in niche areas relevant to investors;</li> <li>➤ To implement measures and incentives encouraging students and adults to choose higher and vocational education programmes in areas relevant to the state;</li> <li>➤ To initiate the improvement of the programmes offered;</li> <li>➤ To initiate the development and implementation of interdisciplinary</li> </ul>

	<p>promoting engineering and technology professions for young people in regions.</p>	<p>study programmes;</p> <ul style="list-style-type: none"> <li>➤ To create a tool for providing additional funding for on-the-job training schemes;</li> <li>➤ To promote:</li> <li>➤ the development of on-the-job training schemes;</li> <li>➤ vocational information and guidance services, promoting professions in engineering and technology for young people in regions.</li> </ul>
Inefficient lifelong learning system	<ul style="list-style-type: none"> <li>➤ Changing nature of jobs with the increasing influence of the Industry 4.0 and changing job requirements;</li> <li>➤ Increasing needs for retraining or acquisition of new qualifications;</li> <li>➤ Difficulties in attracting professionals to teach (give lectures);</li> <li>➤ Insufficiently effective mechanism for recognition of competences and qualification system.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To improve voucher-based measures in order to create conditions for improving qualifications of working people;</li> <li>➤ To implement measures to finance lifelong learning (to ensure sustainable financing of continuous education programmes);</li> <li>➤ To implement the mechanism for sustainable financing of trainings for acquiring competences necessary to start doing jobs suitable for the Industry 4.0;</li> <li>➤ To create a system which would encourage professional practitioners to share their knowledge and skills in the field working as vocational teachers (lecturers) part-time;</li> <li>➤ To support the installation and improvement of mastery qualification subsystems in order to develop the assessment and recognition of the competences acquired in work activities.</li> </ul>
Need for qualified	<ul style="list-style-type: none"> <li>➤ Difficulties in attracting</li> </ul>	<ul style="list-style-type: none"> <li>➤ To finance measures for promoting</li> </ul>

specialists from abroad	qualified specialists from abroad to fill job positions in the field of technology.	<p>and supporting measures aimed at attracting talented specialists from abroad;</p> <ul style="list-style-type: none"> <li>➤ To finance business support and promotion measures for foreign students who can work in local industrial companies, to attract and employ successful graduates;</li> <li>➤ To finance public initiatives for identifying the need for talents and their shortage, and developing mechanisms that would allow filling up this shortage;</li> <li>➤ To create an ecosystem favourable to specialists (incentives, implementation of measures for integration of specialists, for example: Lithuanian language courses, adaptation of the health system for foreigners and publication of general information about getting settled in the country and migration procedures).</li> </ul>
Fragmented and underdeveloped innovation training and innovation consulting system	<ul style="list-style-type: none"> <li>➤ Insufficient access to higher education infrastructure needed to meet challenges of Industry 4.0;</li> <li>➤ There is no training system for innovators.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To finance support measures for the use of infrastructure in research clusters and open access hubs (e.g. qualification improvement and training purposes);</li> <li>➤ To create a network providing services of Digital Innovation Hubs (DIH) and to promote the training of specialists and researchers working in them in order to acquire the knowledge and competences necessary for consulting businesses and providing innovation support services internationally, through the European Network of Digital Innovation Hubs;</li> <li>➤ To finance a support measure for the</li> </ul>



		development and support of a publicly available interactive platform or a website with remote control and technology modelling.
Lack of competences of student creativity and creation of innovations	<ul style="list-style-type: none"> <li>➤ A lack of skills, knowledge and traditions on how to promote the development and dissemination of technology, how to interest students in technology studies and vocational training, how to plan and pool resources, and find a place in technological value chains;</li> <li>➤ A few of graduates from general education institutions, who choose to continue studying (learning) technologies.</li> </ul>	<ul style="list-style-type: none"> <li>➤ To finance mobile services that introduce STEAM activities to students;</li> <li>➤ To finance professional activities for students of general education institutions aimed at raising their interest in professions in engineering and technology industry and to attract them to studies that train specialists in these fields;</li> <li>➤ To develop initiatives for establishing and supporting training companies and simulation businesses.</li> </ul>

## 2. Goals and groups of activities in 2021 - 2027

### 2.1. Task – 1.1. To strengthen research and innovation capacities and to install advanced technologies

#### *Activities being implemented*

- Creating conditions for conducting high-level R&D in research and higher education institutions, promoting inter-institutional, inter-sectoral and international cooperation in the implementation of R&D activities;
- Creating conditions for participating in international R&D programmes, networks and infrastructures by strengthening the capacities of research and higher education institutions to participate in R&D programmes and to manage international consortia;
- Strengthening the knowledge transfer and commercialization system by strengthening research and higher education institutions capacities to manage intellectual property and creating conditions for financial sustainability of research and higher education institutions;
- Start-up acceleration and development activities: development of the product idea (including idea hackatons), preparation of a business model and strategy, investment in tangible and intangible assets, working capital, sales and marketing activities, consulting, mentoring and soft landing, ensuring access to seed capital;
- Activities promoting innovation supply: services of development of new high value-added products ranging from a new product idea concept to the creation of a product prototype, development of intellectual property, protection and licensing, early pilot production of newly developed products and their preparation for the market, with a special focus on commercialization and specialized consulting activities (Central and Western Lithuania);
- Activities for promoting innovation demand: pre-commercial procurement and innovative public procurement;
- Activities for promoting international networking and strengthening high value-added-based mature clusters that cover the creation of joint strategies and products, their participation in international programmes, increasing access to foreign markets, involvement in RDI clusters and international value chains, including accessing EU key strategic value chains;
- Activities for attracting high-value-added FDI aimed at promoting cooperation and technology transfer between large companies and SMEs in the field of RDI.
- Support of financing models in line with needs of companies engaged in R&D that ensure the availability of financial resources (the capital region).

### ***Main target groups***

Large enterprises, micro-, small- and medium-sized enterprises, research and higher education institutions, scientists and other researchers, other staff of research and higher education institutions, public sector entities

### ***Specific target areas, including the planned use of territorial measures***

All of Lithuania

### ***Cross-regional and cross-border actions***

The plan is to create possibilities for conducting them depending on need

### ***Planned use of financial instruments***

The plan is to use financial instruments based on ex-ante evaluation results

## **2.2. Task – 1.3. To strengthen the growth and competitiveness of SMEs**

### ***Activities being implemented***

In order to increase the growth in the productivity of SMEs and to reduce the gap compared to the EU, to encourage the move of SMEs to a circular economy increasing resource productivity and reducing the adverse effect of economic development on the environment, to create incentives for changes in the country's export structure increasing the share of higher value-added SMEs, and to improve conditions for the establishment and growth of SMEs in the country's regions, financing will be provided for the following activities:

- Implementation of innovative technologies in the areas relevant to Industry 4.0 and other high-impact technology, creating conditions for the development of mass production of innovative products or the provision of innovative services (Central and Western Lithuania);
- Investments in non-technological (brand, e-commerce solution process, design, business model, technology and digitization audit, etc.) innovations (Central and Western Lithuania);
- Investments in low-emission technologies (eco-innovation), production of sustainable "circular" products and provision of services in pursuit of industrial transformation in observance of the principles of circular economy and neutral impact on the environment (Central and Western Lithuania);
- Activities of internationalization of innovative activities of SMEs and identification of new export markets, including market research, marketing activities, development of relations

with strategic partners, presentation of opportunities abroad, certification of innovative products for SMEs (Central and Western Lithuania);

- Support of innovative financing models that meet the needs of SMEs and ensure access to financial resources (the capital region);
- Availability of financial resources for business establishment and development, creation and development of pre-acceleration programmes, acceleration activities for start-up SMEs in regions (Central and Western Lithuania).

#### ***Main target groups***

Micro, small and medium-sized enterprises

#### ***Specific target areas, including the planned use of territorial measures***

All of Lithuania

#### ***Cross-regional and cross-border actions***

The plan is to create possibilities for conducting them depending on need

#### ***Planned use of financial instruments***

The plan is to use financial instruments based on ex-ante evaluation results

### **2.3. Task – 1.4. To develop the skills needed for advanced specialization, transitional period of the industry and entrepreneurship**

#### ***Activities being implemented***

- Development of competences necessary for SMEs identified in the course of the entrepreneurial search process;
- Strengthening the capacity of SMEs to implement technologies and develop innovations by attracting researchers, technology specialists and engineers;
- Promoting cooperation between education, research and business through the implementation of an entrepreneurial search process in order to apply scientific knowledge in the processes of product development and market introduction;
- Strengthening the capacity of researchers by increasing the attractiveness of researcher careers and promoting the circulation of minds;
- Enhancing entrepreneurial skills in research and higher education institutions by implementing the one-stop shop principle and creating preconditions for financial sustainability of activities.

***Main target groups***

Micro, small and medium-sized enterprises, research and higher education institutions (including research and technology organizations (RTOs)), institutions involved in the entrepreneurial search process.

***Specific target areas, including the planned use of territorial measures***

All of Lithuania

***Cross-regional and cross-border actions***

The plan is to create possibilities for conducting them depending on need

***Planned use of financial instruments***

Using financial instruments is not planned, however, they may be used if market conditions change