

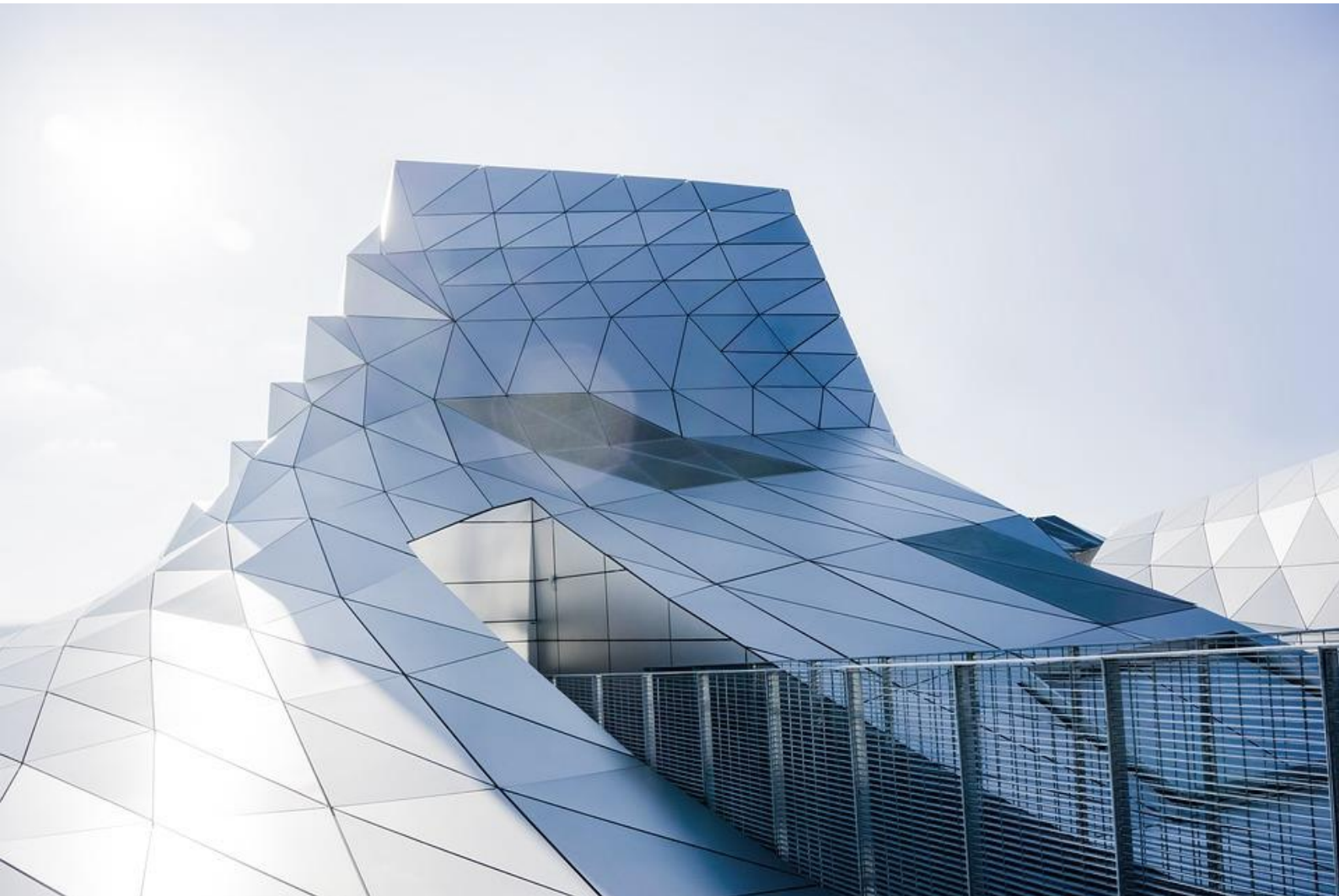


2014-2020 Operational
Programme for the
European Union Funds
Investments in Lithuania



MINISTRY
OF FINANCE

VISIONARY
ANALYTICS



EVALUATION OF PROGRESS IN IMPLEMENTING THE OBJECTIVES OF THE OPERATIONAL PROGRAMME DESIGNED FOR PROMOTION OF RESEARCH AND DEVELOPMENT AND INNOVATIONS

SUMMARY OF THE FINAL REPORT

Vilnius, 2017 05 31

The evaluation was ordered by the Ministry of Finance of the Republic of Lithuania, following contract No 14P-79 signed on 19th of October 2016. The evaluation was financed from the European Social Fund.

Evaluation objectives and questions

The evaluation was carried out in October 2016 – May 2017 under the contract “Regarding the implementation progress of the program’s objectives for research, experimental development and innovation promotion services” (contract No. 14P-79) between Visionary Analytics and Ministry of Finance of Republic of Lithuania signed on the 19th of October, 2016. The evaluation was funded from the European Social Fund.

The goal of the evaluation was to improve the implementation of research, development and innovation (R&D&I) measures of the Operational Programme (OP) and to assess their progress measures. The objectives of the evaluation were:

- to evaluate the relevance, sufficiency, coherence and institutional coordination of the R&D&I measures of the OP,
- to evaluate efficiency and effectiveness of the R&D&I measures of the OP.

The evaluation aimed at answering the following **evaluation questions**:

- What are the relevance and sufficiency of the R&D&I facilitation measures in the context of the OP and Smart Specialisation strategy?
- How do measures reflect lessons learned in 2007-2013 and experts' recommendations?
- How do current measures supplement the 2007-2013 investment: how is the current research infrastructure enabled, what is the additionality and costs of the new infrastructure, how will the new products be used after implementation of projects?
- How is the coordination of R&D&I investment ensured?
- How can the best practises of other EU member states be applied in Lithuania?
- What are the success factors for achieving the planned results and what is the probability to reach planned targets?
- Are the preconditions for commercialisation of R&D&I results and increase in business R&D expenditure satisfied?
- How could the efficiency of current R&D&I measures be improved in terms of funding form?
- What is the expected impact of the OP on business innovativeness, cooperation and technology transfer?

Methodology

In order to answer evaluation questions and create expected results, theory based impact evaluation was carried out. Additionally, participatory evaluation approach guaranteed the inclusion of all relevant stakeholders. The following data collection

and analysis methods were used: desk research, case studies of other EU member states, case studies of R&D&I measures, interviews with stakeholders and beneficiaries, surveys of beneficiaries, statistical and graphical analysis, and focus groups.

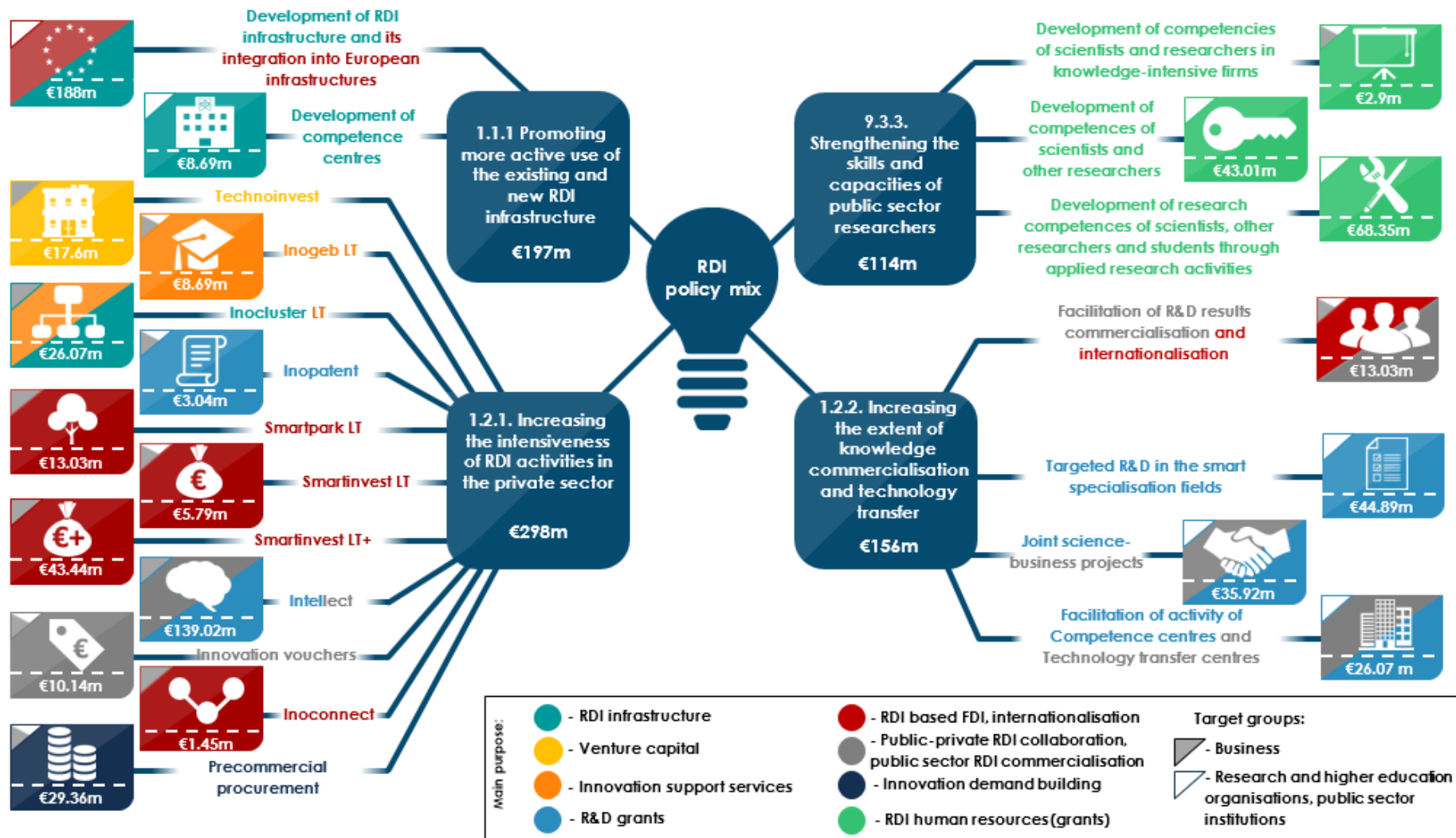
Surveys were carried out between 16th of January to 17th of February, 2017. They were prepared using Suveygizmo tool and piloted before launch. Statistics are presented in table 1 below.

Table 1. Survey statistics

Type of survey	Invitations send	Number of responses	Funded / not funded respondents
1. Survey of Intellect applicants	278	101	44/57
2. Survey of SmartInvest LT+ applicants	22	9	4/5
3. Survey of Inocluster LT applicants	11	7	6/1
4. Survey of applicants in the Development of doctoral studies project (PhD supervisors)	506	203	107/88*
5. Survey of doctoral students in the Development of doctoral studies project	305	117	NA
<i>Total:</i>	<i>1122</i>	<i>437</i>	<i>NA</i>

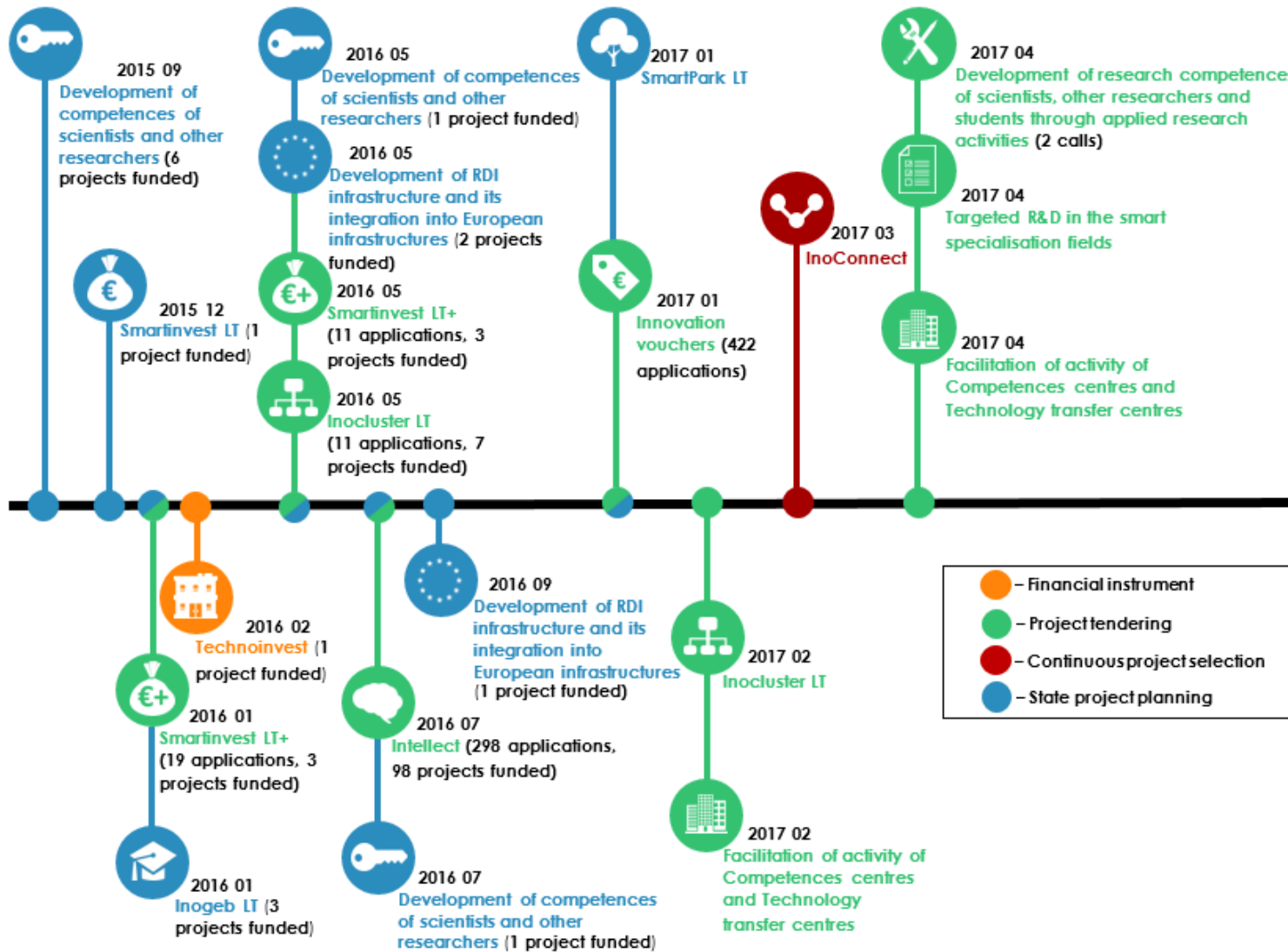
Source: Visionary Analytics, 2017. * – a question about funding status was answered by a share of respondents. PhD supervisors who received funding, but did not find suitable PhD student are considered as not funded.

Operational Programme investment by specific objectives and measures



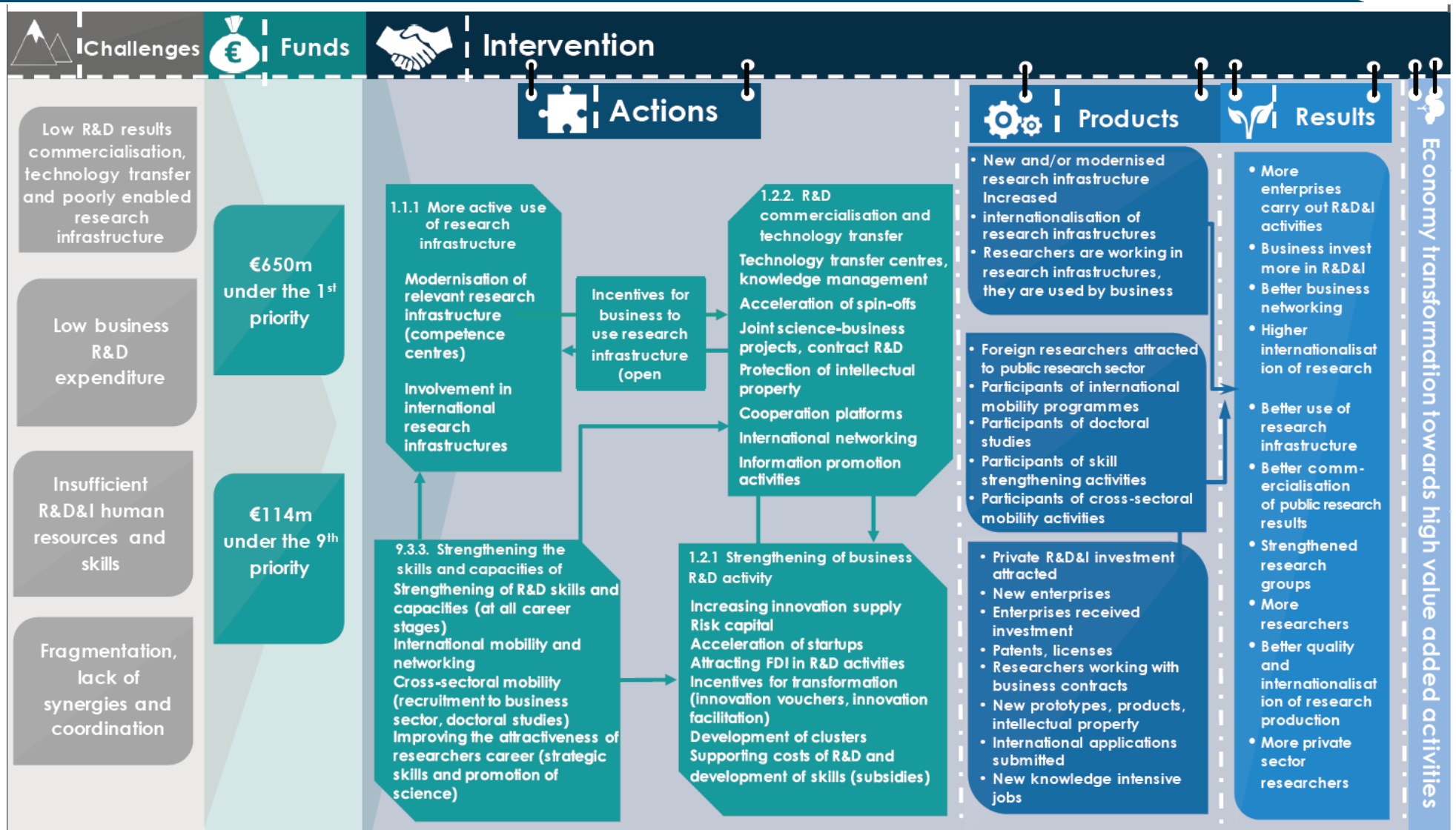
Source: Visionary Analytics, 2017, based on publicly available information from esinvesticijos.lt. Additionally, increase for Targeted R&D in the smart specialisation fields is expected due to cancelled instrument for independent R&D projects.

Calls and progress of measures




Source: Visionary Analytics, 2017, based on publicly available information from www.esinvesticijos.lt.




Intervention logic of R&D&I measures in the Operational Programme






Source: Visionary Analytics, 2017.

EVALUATION OF BUSINESS R&D&I SUPPORT MEASURES

	R&D&I measures of OP's specific objective 1.2.1 are strongly related to goals and programme-specific result indicators of the OP. They also largely comply with expert recommendations.	
ADVANTAGES <ul style="list-style-type: none"> • Both innovation supply and demand measures are used. • All stages of innovation cycle are covered. • Investments in science-business cooperation are foreseen. • Some attention is given to internationalisation. • Investments are concentrated in Smart Specialisation priorities. 	CHALLENGES <ul style="list-style-type: none"> • Lack of ambition to foster startups with high potential. Startups have to compete with advanced innovators. There is a lack of composite measures for startup development. • Lack of systemic approach to fostering transformation of potential innovators. There is a shortage of measures for idea facilitation and other simple assistance activities. • Lack of synergies between measures, which would allow companies to move through the innovation cycle from an idea to a product. 	

	The probability of achieving majority of programme-specific product targets, related to business R&D&I measures is high (if all of the planned measures will be implemented).	
	The target for result indicator <i>innovative enterprises cooperating with partners</i> has already been reached. Hence, the target value of the indicator or the indicator itself should be adjusted.	
	It is unlikely that the target of the indicator <i>business research and development (R&D) expenditure</i> will be achieved, despite the fact that the target is below EU average. Systemic approach is needed to foster business R&D expenditure. Measures outside EU funds are necessary (access to risk capital, tax exemptions, consultations, etc.). Low probability of achieving the target may also be related to the lack of incentives or knowledge to declare R&D activities for enterprises.	

THE MAIN CHALLENGES FOR EFFECTIVENESS OF R&D&I MEASURES

	Administrative burden is high due to excessive requirements and lengthy procedures. As a result, measures are not attractive to business. Administrative burden is related to requirements to provide many details in applications. This leads to lower flexibility of project implementation.
	Around half of the survey respondents thought that definition of R&D is too strict and not appropriate for business projects. Evaluation showed that in Lithuania the concept of R&D is interpreted strictly, despite DG REGIO suggesting focusing on project's contribution to long-term business competitiveness rather than on minor details.
	Despite the fact that only about one third of surveyed respondents thought that project selection is not transparent, challenges related to project selection and evaluation remain. The key issue here is competence and impartiality of evaluators. It is complicated to find evaluators for business projects; hence experts from research sector are often hired. Some applicants question competences of these experts to evaluate business-related projects. In addition, the prolonged search for experts results in longer project selection. Although there is a notion to create a cross-institutional database of experts, no concrete actions have been taken yet.



The probability that current measures will foster business R&D expenditure enough to reach the specific result indicator target is low-medium.

- Allocated investments are not sufficient compared to the ambition. €298 m was allocated to fostering business R&D (39% of the first priority axis funding), but systemic changes are also needed to reach the target.
- Although demand in launched calls was high, the quality of applications and ideas was quite low. Only €38 m of the planned €60 m were allocated to projects in the first call of the Intellect instrument.
- Additionality of measures is not high. For example, in the first Intellect call only 12.5% of funded enterprises stated that they would not have implemented their projects without funding. 42.5% of funded enterprises would have implemented their projects in smaller scope, and 45% of funded enterprises would have implemented their projects later.
- High administrative burden decreases demand for funding and worsens conditions for ensuring sufficient amount of applications.



The probability of increasing the share of innovative enterprises is medium.

- There is a lack of measures for potential and new innovators.
- Complex application system is more convenient for experienced innovators or the ones with EU funding experience. Over half of funded Intellect applicants successfully sought business R&D support measures previously. Inexperienced enterprises rated application procedures, R&D concept interpretation and other issues as challenging.




The probability of fostering creation and development of R&D-based national innovation networks and partnerships is low-medium.





- It is likely, that joint R&D projects will comprise only a small share of investment. Less than one third of successful Intellect applicants have included research organisations or higher education institutions as project partners. Their involvement is also affected by state aid rules.
- There is a high potential for development of contract research in Lithuania. The evaluation of Innovouchers LT measure (implemented in 2007-2013 period) found positive impact on incentives to cooperate and positive general opinion about the measure among businesses. However, this type of funding also faces challenges (e.g. lack of high quality knowledge management, low funding per project which does not help create significant results).
- OP investment may foster development of some clusters only. However, it is not necessarily bad. Concentrating funding on strong (i.e. less dependent on EU funding) clusters was recommended in previous studies.
- It is unlikely that international partnerships will be significantly strengthened. The reasons for this include low funding and ineffective additional selection criteria.


Recommendations

- To differentiate between large projects for experienced innovators and smaller projects for inexperienced or new innovators in the Intellect measure (already being implemented). More synergies are needed between Innovation vouchers and Intellect instruments.
- To ensure supply of instruments for high potential innovative startups (to increase their competitiveness in existing instruments, to implement a measure for acceleration of high potential startups. It should include funding and services needed at the early stage, such as mentoring, consultations, etc.).
- To increase attractiveness of measure targeting foreign investors. This includes continuous project selection, better conditions for young enterprises, better communication and assistance to applicants.
- To enable more flexibility in projects by putting more emphasis on results and impact of the project rather than on search for formal inadequacies.

EVALUATION OF THE PROMOTION OF MORE ACTIVE USE OF PUBLIC RESEARCH INFRASTRUCTURE AND R&D COMMERCIALISATION MEASURES

	Sufficiency and appropriateness of the policy mix of specific objectives 1.1.1 and 1.2.2 for facilitation of knowledge commercialisation, knowledge transfer and use of research infrastructure is low-medium.	
<p>ADVANTAGES</p> <ul style="list-style-type: none"> • Facilitation of internationalisation of research infrastructures, their integration into European infrastructures. • Various target groups are supported. • Researchers and students are encouraged to commercialise R&D results. • There are premises for commercialisation of R&D results. This promotes the use of research infrastructure. • Commercialisation is an important criterion for research projects' evaluation. 	<p>CHALLENGES</p> <ul style="list-style-type: none"> • Allocation of funding for research infrastructures is still more significant than funding for R&D commercialisation and technology transfer or strengthening of researchers' skills and capacities. • There were some weaknesses in the initial research infrastructure project selection and planning. The planned approach would not fully conform with the strategy to optimise the higher education network. In addition, some of the selected projects were not likely to have economic impacts. However, projects are currently being reviewed, which should help select the most promising ones. • Planned measures do not pay enough attention to enabling the use of research infrastructure by local and foreign businesses. The emphasis on the improvement of accessibility of research infrastructure services to external subjects is low. 	

	<p>The probability of achieving target of the result indicator external users from economic entities, who used the upgraded open-access R&D&I infrastructure, is low, because a share of planned research infrastructures are not relevant to business sector and the start of project implementation is late. It is unlikely that infrastructure projects will be finished in time to attract enough external users by 2023.</p>	
	<p>The probability of achieving targets of indicators international R&D&I infrastructures Lithuania is a member of and number of researchers from the private sector who use improved R&D&I infrastructure facilities is medium, as none of the projects related to these indicators have been launched yet.</p>	
	<p>The probability of achieving OP targets related to science-business cooperation, R&D results commercialisation and knowledge transfer (specific objective 1.2.2) is low-medium, as the implementation of relevant measures is late and there are other significant risks (e.g., demand for funding in Joint science-business projects is expected to be low).</p>	
	<p>The probability of achieving the target of specific objective's 1.2.2 result indicator is average, because: a) none of the related projects have started yet; b) historical data shows that the indicator does not have a steady trend. State aid rules may also have negative impact on joint science-business projects. This is especially relevant, since higher education institutions and research organisations could be treated as large enterprises and would have lower funding intensity. It is likely, that instruments where the state aid rules are employed will have low demand.</p>	

	<p>Infrastructure selected for funding complements current research infrastructure. However, it might be excessive, and its additionality is not always clear.</p>	
<ul style="list-style-type: none"> • A share of the research and study infrastructure projects aims at moving infrastructure, hence to optimise rather than to enable its use. • Measures aiming at integrating Lithuanian research infrastructure into international infrastructure networks originally planned to fund more, but small projects. However, steps are being taken to concentrate investment in fewer projects. • Some projects reflect Smart Specialisation priorities formally or indirectly. • Some of the projects fund operating activities rather than activities leading to long term changes. This should not be the case, despite the fact that these projects are important for the research and education system. 		



Assuming that investment, operating costs and revenues of research infrastructure will be similar to those incurred by infrastructure financed in 2007-2013, it is estimated that the infrastructure planned for 2014-2020 will cost additional €58 m for the state budget. This is in addition to infrastructure funded during the 2007-2013 financing period, which cost around €118 m, potentially leading to a significant burden to the state.



Economic impact of measures aimed at establishing knowledge intensive enterprises depends on the number of newly created enterprises. The number of new enterprises indicated in current plans may not be enough to achieve a breakthrough.

- The current OP policy mix is little attractive for the creation of new enterprises, as it lacks specific measures.
- There is a measure aimed at fostering creation of spin-offs, and the past experience of MITA shows that demand for such measure should be sufficient. However, it may be diminished by requirements for higher education institution or research organisations to become shareholders in an established spin-off.



The infrastructure created in 2007-2013 will be employed at the low-medium level, if the external factors related to researchers' career criteria, motivation and other incentives, professional knowledge management and research export systems are not changed.

- Open access research infrastructure planned in current measures is more beneficial to public rather than private sector R&D institutions. Even public sector researchers use open access research infrastructure quite rarely.
- There are no measures directed towards renting research equipment. In addition, project selection criteria do not provide bonus for using open access research infrastructure in projects.
- Availability of public research infrastructure is not optimal. Only a quarter of enterprises which assessed it think that open access research infrastructure and research infrastructure available in science parks and clusters is easily accessible to business.
- Demand for open access research infrastructure is concentrated. Almost half of the enterprises which indicated intentions to use such infrastructure are planning to use 4 out of 25 centres in their projects.



According to the survey, some of the public R&D products created in 2007-2013 funding period will be used in 2014-2020.

- Around 60% (24) of successful Intellect applicants who assessed this criterion indicated that they are going to use R&D results created by public institutions in their projects.
- There are synergies between the current and 2007-2013 researchers' projects.
- However, there is a risk, that results of current projects will not be commercialised in 2014-2020 due to:
 - Delays in launching measures in specific objective 1.2.2.
 - Potentially low interest from higher education institutions and research organisations to participate in joint science-business projects, due to state aid rules.

Recommendations

- To finance a smaller number of research infrastructure projects with the highest potential. Saved funds should be allocated to measures directly contributing to R&D&I activities.
- To separate economic and non-economic activities, to identify effective cooperation, to recognise mediator's role of higher education and research organisations where appropriate, etc., if it may help reduce own contributions of higher education institutions and research organisations.
- To improve the system of knowledge and technology transfer and innovation support.
- The spin-off measure should also allow applications where higher education institutions and research organisations are not involved in management of spin-offs as shareholders. Composite financial and non-financial assistance should be available for new spin-offs.
- To introduce a new measure of technology bridges which would aim at fostering internationalisation of high potential startups and spin-offs by supporting their acceleration in an international environment and providing access to international markets.

EVALUATION OF MEASURES STRENGTHENING SKILLS AND CAPACITIES OF RESEARCHERS

	<p>Measures of the specific objective 9.3.3 aimed at strengthening skills and capacities of researchers are sufficient at medium-high level. In addition, they largely comply with the goals of the OP and expert recommendations.</p>		
<p>ADVANTAGES</p>	<ul style="list-style-type: none"> • Measures aim at strengthening skills and capacities of early stage researchers. • There are measures for internationalisation of researcher activities. • Emphasis on increasing attractiveness of research career. • Measures avoid funding similar research. 	<p>CHALLENGES</p>	<ul style="list-style-type: none"> • Definition of early stage researcher (up to 10 years after obtaining doctoral degree) is too broad. This diminishes funding opportunities for less experienced researchers, as they have to compete with more experienced peers. • OP measures do not ensure preconditions for attracting high level foreign researchers and Lithuanian researchers who emigrated. Despite ensuring possibility for foreign researchers to participate in projects, some obstacles (e.g. unattractive remuneration) remain. • Allocation of funds for measures aimed at strengthening researchers' skills and capacities is not sufficient. This is challenging due to: a) unattractive research career opportunities and shortage of researchers; b) high expected demand for funding which creates unnecessary competition between experienced and inexperienced, foreign and local researchers; c) allocated funds are insufficient to comply with expert recommendations. Without having sufficient human resources, there is a risk of failing to sufficiently use research infrastructure • Some projects are funding operating activities rather than directing investments towards long term structural changes.

	<p>The probability of achieving most of the output indicators related to strengthening researchers' skills and capacities is high or average, because there is a high demand for measures, despite of them being late.</p>	
	<p>The choice of the result indicator is problematic. Only one project (about 20% of funds of specific objective 9.3.3) contributes to it directly. Hence less than 80% of funding is not directly related to the target.</p>	

	<p>Public procurement procedures create difficulties during project implementation. It is especially relevant in measures targeting public research infrastructure and researchers.</p>	
<p>Public procurement increases duration of project activities, which is especially important in short projects. Failure to buy necessary equipment decreases the probability of finishing projects on time. Current public procurement rules may result in buying unsuitable equipment, which cannot be used in the project.</p>		

Recommendations

- To increase funding for researchers (also from non-EU sources).
- To introduce measures aimed at strengthening early stage researchers' skills and capacities and encouraging them to continue researcher careers.
- To introduce measures aimed at attracting talents from foreign countries, especially Lithuanians who graduated or work abroad, by making conditions more attractive to them.
- To improve the selection of applications' evaluators, and increase transparency and impartiality of evaluation procedures.

OTHER EVALUATION QUESTIONS

COMPLIANCE WITH THE SMART SPECIALISATION STRATEGY



Specific objective 1.1.1 fairly complies with the programme and roadmaps of Smart Specialization priorities.

At least two out of eight activities in the Development of R&D&I infrastructure and its integration into European infrastructures measure (8% of the total measure allocation) raise questions regarding their compliance with Smart Specialization priorities. Two activities related to electronic resources (18% of the total measure allocation) comply with Smart Specialization priorities only indirectly. The remaining activities comply with Smart Specialization priorities, but some of them achieve this more formally.



Specific objective 1.2.1 highly complies with the programme and roadmaps of Smart Specialization priorities.

The following deviations were found:

- New measure (SmartPark LT), which was not identified in Smart Specialisation priority programme, was introduced. The measure is reasonable and complies with Smart Specialisation priority objectives.
- Funding for Intellect, Innovation vouchers, and Innopatent measures was reduced by €27.66 m. Funding for Smartinvest LT+ measure was increased by €14.48 m.



Specific objective 1.2.2 reasonably complies with the programme and roadmaps of Smart Specialization priorities.

The following deviations were found:

- The Independent R&D projects measure was cancelled. It was criticized for funding fundamental research.
- Funding for Targeted R&D in the smart specialisation fields and Joint science-business projects measures was reduced. However, due to Independent R&D projects being cancelled, funding for targeted R&D is likely to be increased. Funding for measure Facilitation of R&D results commercialisation and internationalisation was increased.

INSTITUTIONAL COORDINATION OF R&D&I MEASURES



Institutional coordination of R&D&I measures is ensured both formally and informally. Despite that, the coordination is not effective enough.

- Slow coordination processes between institutions raise some difficulties, especially when know-how and practices differ among institutions.
- Some stakeholder institutions receive relevant information only in the late stages of decision making, when amendments take more time. This problem can be avoided by involving all relevant institutions in the beginning of processes.

FUNDING FORMS



More financial instruments could be used in business R&D&I measures.

In order to decrease business dependency on subsidies and to accumulate sufficient funds for the period when EU funding diminishes, broader use of financial instruments could be beneficial.

- In the first priority axis 2.3% of funds were allocated to financial instruments. The share is lower compared to Estonia (13.31%) and Poland (5.8%).
- Surveyed Intellect applicants are more likely to agree with the change of funding form from subsidy to financial instrument (30% vs. 27%, who disagreed).
- Current accessibility to risk capital for high potential startups may be insufficient.



It is crucial to enable enterprises to develop their ideas and apply for funding at the time convenient for them.

Implementation of measures with project tendering may consist of calls of one, two or more stages. In addition, continuous project selection may be applied. The Irish example indicates that it is possible to create conditions for enterprises to develop their ideas and apply for funding at the time convenient for them, by having two-stage project selection with multiple application deadlines (making it almost like a continuous project selection) or using both project tendering and continuous project selection simultaneously.

PROBABILITY OF ACHIEVING TARGETS OF PERFORMANCE FRAMEWORK INDICATORS

Targets of all but two performance framework indicators will be achieved:

- Indicator *Value of the output indicator 'Number of researchers working in improved research infrastructure facilities' planned in project financing and administration agreements* will not be achieved due to delays in the implementation of related research infrastructure projects.
- Indicator *Researchers who participated in European Social Fund (ESF) activities for non-formal education programmes* may be due to delay in implementation of measures of specific objective 9.3.3.

Priority	Indicators of the performance framework	Value on March, 2017	Target value (2017)	Milestone (2018)	Target value (2023)
1	Total eligible expenditure recognised as declarable to the European Commission, EUR	83 155 687	96 022 059	132 864 048	798 680 983
1	Number of researchers working in improved research infrastructure facilities, full time equivalents	0	0	0	370
1	Value of the output indicator 'Number of researchers working in improved research infrastructure facilities' planned in project financing and administration agreements, full time equivalents	80	150	222 ¹	–
1	Number of enterprises receiving grants	108	28	56 ²	400
9	Researchers who participated in ESF activities for non-formal education programmes	23	320	374 ³	2200

Source: Data provided by LVPA, ESFA, and CPVA. Government of Republic of Lithuania, Operational Programme for the European Union Funds' Investments in 2014-2020 (with the amendments of 2017 02 08). www.esinvesticijos.lt

¹ Value indicated the annex of OP – 240.

² Value indicated the annex of OP – 76.

³ Value indicated the annex of OP – 480.