

APPROVED
By Order No V-59/4-48
of the Minister of Education and
Science of the Republic of Lithuania
of 29 January 2014

**PRIORITY SUSTAINABLE AGROBIOLOGICAL RESOURCES AND SAFER FOOD IN THE
PRIORITY AREA OF RESEARCH AND (SOCIO-CULTURAL) DEVELOPMENT AND
INNOVATION (SMART SPECIALISATION) AGRO INNOVATION AND FOOD
TECHNOLOGIES
ACTION PLAN**

**CHAPTER I
GENERAL PROVISIONS**

1. This Action Plan for the priority *Sustainable Agrobiological Resources and Safer Food* in the priority area of research and (socio-cultural) development and innovation (smart specialisation) (hereinafter – RDI Priority Area) *Agro Innovation and Food Technologies* (hereinafter – Action Plan) was developed under the Programme on the Implementation of the Priority Areas of Research and (Socio–Cultural) Development and Innovation (smart specialisation) and their Priorities approved by Resolution No 411 of the Government of the Republic of Lithuania of 30 April 2014 On the Approval of the Programme on the Implementation of the Priority Areas of Research and (Socio–Cultural) Development and Innovation (smart specialisation) and their Priorities (hereinafter – the Programme).

2. The Action Plan was developed to lay down the provisions implementing the priority *Sustainable Agrobiological Resources and Safer Food* (hereinafter – the Priority) in the RDI Priority Area *Agro Innovation and Food Technologies*.

3. The time frame for the implementation of the Action Plan is 2015-2020.

4. Terms used in the Action Plan shall be understood herein as follows:

4.1. **Agrobiological Resources** shall mean soil for farming or forestry purposes, water, plants and livestock, biomass generated from these and used for the production of food, feed, energy, building materials and other bioproducts. The sustainability of agrobiological resources means that resources are used in an efficient, competitive and sustainable manner while protecting biodiversity and unspoiled environment, developing new environmentally friendly technologies and production methods, meeting current needs of our society and preserving opportunities for future generations.

4.2. **Precision Agriculture** shall mean an integrated system of process management (handling) in a specific farm using information technologies and other precise instruments which includes farm management by matching specific soil properties to plant demands, systemizing data, such as soil absorption, crop sowing, fertilization, plant care right up to crop harvesting and cost (labour, use of machinery, etc.) analysis and is designed to increase long-term effectiveness, performance and profitability of a specific locality and total farm production at the same time minimizing adverse impact on wild life and environment. The aim of research in the area of precision agriculture is to develop and assess specific new programmes and tools enabling better matching of soil, crop care technological means and plant needs and mitigation of climate change effects, possibility to specify and introduce various technological means in the total farm management process in order to preserve resources by optimizing cost and benefit ratio.

4.3. **Safer Food** shall mean food that meets safety requirements and is characterized by additional and (or) better safety properties as a result of the application of innovative production and (or) packaging technologies and (or) innovative components.

5. All other terms in this Action Plan shall be understood as defined in the Programme.

CHAPTER II PRESENT SITUATION

6. In 2012, there were around 1.3 thousand firms operating in the production of foods, beverages and tobacco products, all of which have a vested interest in innovations to be potentially developed under the Priority. Almost all agricultural and food enterprises (e.g., organic farms) improve, assimilate or develop technologies for the production of safer agricultural raw materials and food as these technologies determine the competitiveness of a business on the market. In 2010, there were around 200 thousand farms larger than 1 hectare in Lithuania. According to numbers from 2012, 42.5 thousand people were employed in the food, beverages and tobacco production sector. Added value created at market prices was around EURO 580 million.

7. In 2007-2013, business investments into research and (socio-cultural) development (hereinafter – R&D) projects amounted to almost EURO 2.6 million.

8. According to 2012 figures, exports of prepared food products, non-alcoholic and alcoholic drinks, vinegar and tobacco products of Lithuanian origin amounted to around EURO 1 billion. Safety is one of the key requirements for exporting agricultural raw materials and food products. The issue of food provision gains urgency globally and safer food will undoubtedly become of the key factors for growing exports. Besides, technologies for safer agricultural raw materials and food production may themselves be replicated and exported as innovations.

9. The potential of Lithuanian research and studies institutions which may contribute to the implementation of the Priority is relatively high. The numbers of individuals training to become specialist in agricultural and food science and technologies have been growing every year. Research and studies institutions have high concentrations of top level international researchers doing R&D in areas most relevant to the Priority.

Challenges and issues hopefully to be addressed with the Priority have been relevant for some time now and systemic efforts to tackle them started in the European Union Structural Funds 2007-2013 period. Research funded under measures of this period has already generated significant progress. Large portion of this contribution is due to the National Research Programme “Healthy and Safe Food” funded from the national budget since 2011. The programme is aimed at systemizing new scientific knowledge needed to develop new methods and apply biomaterials to produce new food products that are safe, higher quality and have improved biological value, comply with the principles of healthy nutrition and are competitive on both domestic and foreign markets, as well as preparing the theoretical principles for developing production technologies for functional foods through rational use of local raw materials and safe delivery of products to consumers. Formulation of the mix of measures needed to implement the Priority took into account progress already made in the areas of safer food, ingredients to produce safer food and packaging, food safety evaluation and improvement research.

Areas of great importance to welfare of the state and society, such as agriculture and food safety and health promotion will not be neglected in the future as well. 2015 will mark the start of new national research programmes funded from the national budget “Sustainability of Agro, Forest and Water Ecosystems and Healthy Ageing”, the results of which are expected to contribute greatly to the implementation of the Priority.

New research centres open in research and higher education institutions under the Integrated Science, Studies and Business Centre (Valleys) Development Programmes, and R&D infrastructure of these centres gets used for activities relevant to the implementation of the Priority. One of these research centres worth noting is the Joint Research Centre of Agriculture and Forestry which combines the research potential of Aleksandras Stulginskis University and Lithuanian Research Centre for Agriculture and Forestry, also Centre of Excellence for Food Science and Technologies of Kaunas University of Technology, Nature Research Centre develops and updates infrastructure designed for R&D activities of survey and use of biological and land resources, and Research Centre for Animal Welfare, Nutrition and Raw Materials of Animal Origin at the Lithuanian University of

Health Sciences. These research centres will serve not just for the scientific community but also meet the needs of the private sector.

The new EU Framework Programme for Research and Innovation “Horizon 2020” sets out several tasks in the area of Societal Changes and Lithuanian researchers and other experts are very likely to be actively involved in finding solutions for those tasks, in particular in the areas of security of food supply, sustainable agriculture, marine and maritime research and bioeconomy.

Nevertheless, despite the efforts to support R&D, research results are not being successfully commercialized and it is expected that the Priority will fill this gap.

10. Lithuanian research and studies institutions maintain relations by participating in the activities of the National Beverage Industry Cluster, Food (Fruit and Vegetable) Cluster, Natural Mineral Water Cluster, and National Food Economy Cluster.

11. To implement the Priority it is important to strengthen and concentrate R&D resources in thematic R&D areas, such as technologies of crop growing and livestock farming, technologies of food processing and handling, biotechnology, and chemical engineering (new techniques for processing food raw materials). In order to strengthen the capacities of human resources, the country has to offer training for highly skilled professionals in the fields of crop growing and livestock farming, food sciences and technology, chemical engineering, applied biotechnology, and analysis of food and its components. In its attempts to promote economic reform and increase competitiveness of the country through resources available Lithuania should strengthen business capacity to contribute to the development and introduction of technologies created in the economic areas, such as agriculture, food industry, biotechnology, and chemicals industry. Innovative businesses which assimilate the technologies and equipment for producing new natural food components and safer food products to introduce safety ensuring processes should be supported.

CHAPTER III

ACTION PLAN COMPLIANCE WITH THE PROGRAMME AND OTHER STRATEGIC LEGISLATION

12. The Action Plan contributed to the implementation of the strategic objective and goals set out in subparagraphs 19.1 and 19.2 of the Programme and the task of encouraging R&D and innovation activities under subparagraph 20.3 which would create the conditions for the emergence of sustainable food chain, sustainable use of biological resources in agriculture and food industry, production of safe and quality food, effective creation and use of food raw materials.

13. Actions under the Action Plan:

13.1. Develop and introduce in the market new technologies, products, processes and methods;

13.2. Promote knowledge-intensive business development and expansion of firms of high potential;

13.3. Promote cluster formation, integration into international value-creating networks and investments into R&D and innovations;

13.4. Promote cooperation between research and business communities, transfer of knowledge and technology in order to commercialize R&D results;

13.5. Strengthen the potential of research and studies institutions and their capacities to create and commercialize knowledge and train specialists.

14. The implementation of the Action Plan is expected to contribute to changes intended to be achieved by implementing the National Progress Strategy “Lithuania 2030” approved by Resolution No XI-2015 of the Seimas of the Republic of Lithuania of 15 May 2012 On the Approval of the National Progress Strategy “Lithuania 2030”. Results generated by implementing the Priority are interlinked with good social health which ensures active involvement in public life therefore the Priority will mostly contribute to this by implementing the vision of smart society – promoting a healthy society. The results generated by the Priority will in part also help to achieve smart economy objectives, shape social business responsibility and sustainable use of resources through ensured

sustainability of ecosystems and protected biodiversity, sustainable forestry development and preservation of agriculture and fisheries.

CHAPTER IV STAGES OF IMPLEMENTATION

15. Measures to help with the implementation of the Priority were selected in line with the Lithuanian Innovation Strategy approved by Resolution No 1281 of the Government of the Republic of Lithuania of 18 December 2013, National Programme for Studies, Research and (socio-cultural) Development for 2013-2020 approved by Resolution No 1494 of the Government of the Republic of Lithuania of 5 December 2012 and implementing legislation.

16. A policy mix for studies and R&D and innovation required to implement the Priority was put together by taking into account findings in the report presented by an international team of independent experts on 21 February 2014 “Priority Implementation Roadmaps”. Based on this report the implementation of the Priority was divided into the following stages:

16.1. Generation of critical mass on research potential includes activities related to creating an environment which is conducive to new ideas and their solutions, creation of technologies and prototypes, and preparation for the implementation of these activities;

16.2. Search for new ideas and their solutions includes fundamental research of general and targeted nature required to implement the Priority;

16.3. Creation of technologies and their prototypes includes industrial research and test applied activities required to implement the Priority;

16.4. Introduction in the market includes activities related to the introduction of new products in the market;

16.5. Generation of critical mass on business potential includes activities related to knowledge and innovation transfer and dissemination to the public and their use on a large scale.

17. Actions outlined in subparagraphs 13.1–13.5 of the Action Plan will be implemented through measures listed in Appendix 1 to the Action Plan.

18. Appendix 2 to the Action Plan details a policy mix for studies and R&D and innovation in every stage of Priority implementation.

19. Actions and measures detailed in Appendix 1 to the Action Plan are implemented by taking into account the policy mix for studies and R&D and innovation as outlined in Appendix 2 to the Action Plan.

CHAPTER V THEMATIC SPECIFICITY OF THE PRIORITY

20. The implementation of the Action Plan is aimed at:

20.1. Researching and creating safer natural food raw materials, food ingredients and products, food additives, innovative food packaging and storage technologies;

20.2. Researching and creating promising, adapted species of crops for food and feed production, animal line and genotype starting material with targeted qualitative parameters;

20.3. Researching and creating advanced systems for harmful organism control and plant nutrition;

20.4. Researching and creating innovative effective fertilizers with technological, environmental and logistic properties and their components, biological preparations ensuring sustainable environment;

20.5. Researching and creating technologies for precision crop growing and livestock farming.

21. Successful implementation of the activities outlined in subparagraphs 20.1–20.5 is inseparable from the R&D activities carried out by institutions in both public and private sectors.

22. An important role in the implementation of the Priority is played by Joint Initiatives on Studies, Research and (Socio–Cultural) Development and Innovation (hereinafter – Joint Initiatives)

which will serve as a basis for addressing issues relevant to the economic sectors by implementing R&D activity in thematic areas of concern to the economic sectors and hopefully attract private sector entities in realizing R&D results. R&D activities implemented under the Joint Initiatives in line with the activities set out in paragraphs 20.1–20.5 of the Action Plan and actions in subparagraphs 13.1–13.5 of the Action Plan are carried out with the aim of:

22.1. Creating or isolating targeted genotypes which in turn create prerequisites for the development of production technologies for safer raw materials and products of plant and animal origin;

22.2. Stabilizing new isolated targeted genotypes and evaluating those genotype properties that are suitable for safer feed and food;

22.3. Researching promising food and feed crop selective lines, adaptation properties and originality under field, laboratory and other conditions;

22.4. Exploring the most perspective technical possibilities of using innovative methods and technologies designed for the processing or production of waste and (or) renewable resources;

22.5. Searching for innovative product development and production processes;

22.6. Researching the possibilities of using agricultural and food processing waste to increase soil fertility and searching for new waste-free technologies;

22.7. Determining the most perspective raw materials for safer, natural food additives and other ingredients;

22.8. Researching innovative storage technologies;

22.9. Searching for engineering solutions designed to optimize technological parameters of precision crop growing and livestock farming;

22.10. Testing and selecting technologies for precision crop growing and livestock farming best suited to Lithuanian agrarian sector;

22.11. Creating agronomic and technological concepts for new and adapted species, developing methodologies for forming new genotype cattle;

22.12. Evaluating selective properties in order to highlight their agronomic and technological parameters, form prospective genotypes and homozygotic lines, multiply genetic material;

22.13. Inspecting the establishment of new genotype properties in cattle and evaluating the same in selective biorepositories;

22.14. Creating mathematical-biological forecasting models designed to be used for innovative biological preparations maintaining soil fertility and control of harmful organisms, analyzing and selecting optimum solutions for using waste and renewable resources for the production of innovative fertilizers and (or) their components, producing biological preparations under laboratory conditions;

22.15. Creating and optimizing technologies for the production of new natural food additives;

22.16. Adapting new natural food additives to improve food safety;

22.17. Optimizing technologies for the production of new innovative food packaging and storing of agricultural produce;

22.18. Testing new innovative food packaging, technologies for storing specific food products which would contribute to improved food safety;

22.19. Testing new plant species, checking their agronomic and technological properties and evaluating properties and indications of new formed cattle genotypes;

22.20. Creating prototypes of innovative biological preparations, new fertilizers and (or) their components with good technological, environmental and logistic properties, checking their suitability in developing economically and environmentally sustainable, integrated technologies for the production of agrobiological resources, test batches and manufacturing their prototypes;

22.21. Testing technologies of new natural food products and making their prototypes;

22.22. Testing technologies of new innovative food packages, food and food ingredient storage technologies and making their prototypes;

22.23. Conducting prototype testing of precise crop growing and livestock farming technologies.

23. The aim of implementing Joint Initiatives is to ensure that activities outlined in subparagraphs 22.1–22.23 of the Action Plan create conditions for:

23.1. Preparation of reproductive basic material of new fodder and food crops in primary seed processing chains, formation of new cattle genotypes with preferred properties in selective biorepositories;

23.2. Creation and production of new fodder and food crop seeds with target purpose and parameters for industrial reproduction, reproduce for propagation new cattle genotypes formed in selective biorepositories;

23.3. Preparation of technological parameters for using innovative and marketable fertilizers with good technological, environmental and logistic properties and their components, and biological preparations from waste and renewable resources in agriculture, also creation of decision-making systems based on geographic information system technologies, mathematical-biological models for control of harmful organisms and plant nutrition;

23.4. Creation and introduction in the market of new safer food additives and food ingredients;

23.5. Creation and introduction in the market of innovative food packaging;

23.6. Creation and introduction of technologies for precise crop growing and livestock farming;

23.7. Creation and introduction of technological and information systems for precise agriculture.

24. Subparagraphs 22.1–22.23 of the Action Plan may be amended by removing or supplementing intended activities if proposed by the Coordination Group for the Implementation of Research and (Socio–Cultural) Development and Innovation Priorities established by Order No V-576/4-409 of the Minister of Education and Science and Minister of Economy of 20 June 2014 (hereinafter – the Coordination Group) in response to data and proposals generated in the course of monitoring and evaluating the implementation of the Programme and Action Plan, or some other justified data and proposals.

CHAPTER VI ACTION PLAN IMPLEMENTATION

25. Possible sources of implementation:

25.1. Funds of the national budget:

25.1.1. Funds for the European Union Structural Funds 2014-2020 programming period (funds for measures under Priority 1: Promoting Research, Development and Innovation, Priority 3: Promoting Competitiveness of Small and Medium-Sized Enterprises (SMEs) and Priority 9: Building Public Education and Increasing Human Resources Potential of the operational programme for the European Union Structural Funds for the 2014-2020 programming period (hereinafter – the Operational Programme);

25.1.2. Funds of the national budget (without European Union structural funds);

25.2. Funds of research and studies institutions;

25.3. Funds of private legal persons;

25.4. Funds of the European Union Research and Innovation Programme “Horizon 2020” and of other informational programmes.

26. A proportion of funds under the Operational Programme for measures of Priority 1 and Priority 9 are intended for direct support to activities required to implement the Priority therefore there is an indication of preliminary amount of funding to be spent as needed for the implementation of the Priority next to every measure in the table of Appendix 1.

27. A proportion of funds under the Operational Programme for measures of Priority 1 not allocated to specific priorities in the priority areas of research and (socio–cultural) development and innovation (smart specialisation) (hereinafter – RDI Priorities), results of their implementation may contribute to the implementation of all or majority of the RDI Priorities. These measures are marked with an asterisk in the table of Appendix 1 to the Action Plan.

28. Measures implemented partially from funds for Priority 9 of the Operational Programme and from the national budget and relevant to the entire system of studies and R&D and innovation and not attributed to specific RDI Priorities but the results of implementation of which may contribute to the implementation of the Priority. These measures are marked with two asterisks in the table of Appendix 1 to the Action Plan.

29. Measures of Priority 3 of the Operational Programme, even though relevant to the entire system of business environment enhancement and support to businesses, will indirectly contribute to the implementation of the Action Plan by mainly creating conditions for private sector entities to introduce new products in the market and generating critical mass on business potential.

In implementing measures of Priority 3 of the Operational Programme it is intended to support activities relevant to the Priority, such as article and (or) product design development, introduction of high impact technologies in traditional industries, production presentation in international exhibitions and (or) trade fairs, certification of products and services to be exported, increasing new capacities of production and service provision, infrastructure development for business incubators, membership in international networks (platforms), increasing awareness of new products and services, and business start-up consultations.

30. Funds of research and studies institutions are expected to be attracted by supporting activities related to the creation and upgrading of the studies and R&D infrastructure required to implement the Priority (the implementation of infrastructure projects is likely to include own contribution by research and studies institutions). In the table of Appendix 1 to the Action Plan these funds are included in the field “National budget and other funds”.

31. Funding by private legal persons is expected to be attracted by implementing measures which include projects implemented with co-funding by the state, i.e. business entities will have to cover a portion of the project value with their own contribution. In the table of Appendix 1 to the Action Plan these funds are included in the field “Private sector funds”.

32. The Priority may be partially implemented by participating in the European Union Research and Innovation Programme “Horizon 2020” and other international programmes. In the table of Appendix 1 to the Action Plan these funds attracted by participating in international programmes have not been indicated.

33. The implementation of the Action Plan is aimed at generating both quantitative and qualitative results in line with the evaluation criteria detailed in Appendix 1.

34. The time frames for announcing calls of proposals for measures implementing the actions under the Action Plan or compiling project lists will be outlined in the plans for the announcement of calls for proposals and compiling of project lists put together by the ministries as required under the Rules for the Administration of the Operational Programme for European Union Investment Funds for 2014-2020 approved by Resolution No 1090 of the Government of the Republic of Lithuania of 3 October 2014 On the Approval of the Rules for the Administration of the Operational Programme for European Union Investment Funds for 2014-2020.

35. The expansion of the priority areas of research and (socio-cultural) development and innovation (smart specialisation) and the implementation of their priorities shall be coordinated by the Coordination Group.

36. The Programme and the Action Plans of the RDI Priorities are implemented to promote and support interaction and cooperation between business entities and science and education institutions. The promotion of cooperation between business entities and science and education institutions, in accordance with the procedure established by the Ministry of Education and Science and the Ministry of Economy, is implemented by the Agency for Science, Innovation and Technology. The implementation process of the Programme is continuously monitored by analysing and assessing the implementation of the Action Plans of RDI Priorities. Monitoring and assessment of the Programme implementation, in accordance with the procedure established by the Ministry of Education and Science and the Ministry of Economy, is carried out by the Science and Studies Monitoring and Analysis Center (MOSTA).

37. Infrastructure created or equipment acquired at the time of implementing projects under policy measures for studies and R&D and innovation outlines in Appendix 1 to the Action Plan using EU Funds or funds from other sources cannot duplicate the infrastructure and equipment existing in research and studies institutions or other public sector entities except when the existing capacities are insufficient to ensure the implementation of the Priority.

38. A list of measures outlined in Appendix 1 to the Action Plan may be amended in response to the findings of an Interim Priority Implementation Assessment expected to be carried out in 2018, also the evaluation of needs of possible entities implementing the measures.

Appendix 1 to the
 Action Plan for the priority *Sustainable
 Agrobiological Resources and Safer Food*
 the priority area of research and (socio-cultural)
 development and innovation (smart specialisation)
Agro Innovation and Food Technologies

**ACTIONS AND MEASURES UNDER THE ACTION PLAN, PRELIMINARY FUNDING NEEDS TO IMPLEMENT THEM AND
 EVALUATION CRITERIA**

Actions and measures	Preliminary funds, thousand EUR			Responsible authority	Evaluation criteria for actions and measures	Criteria values	
	EU Structural Funds	National budget and other funds	Private sector funds			2018	2023
Action 1. Create and introduce in the market new technologies, products, processes and methods					Product, service or process prototypes (concepts) developed within 3 years after project implementation (pcs)	13	30
Measure 1.1. Joint research and business projects contributing to the implementation of smart specialisation	1,950	-	-	Ministry of Education and Science	Number of projects jointly implemented by business and research and studies institutions (pcs)	2	4
Measure 1.2. Support for the creation or expansion of firms' RDI infrastructure and implementation of RDI activities ("Intellect")	8,469	-	5,951	Ministry of Economy	Number of certified products (pcs)	1	3
Measure 1.3. Support to firms RDI by issuing innovation cheques ("Innovation Cheques")							
Measure 1.4. Support for international patent activities with respect to inventions and designs ("InoPatentas LT")							
Measure 1.5. Support for recertification activities in respect of new products and technologies and testing in laboratories and real-life conditions ("Inosertifikavimas")							
Action 2. Promote the creation of knowledge-intensive business development and expansion of firms with high potential	1,303	-	145		New firms which attracted investments within 3 years after project implementation (pcs)	1	2
Measure 2.1. Support for the provision of innovation consulting services ("Inogeb LT")					Number of firms receiving financial support other than grants (pcs)	1	3
Measure 2.2. Support to firms engaged in RDI activities through financial instruments ("Technostartas LT", "Koinvest LT")							

Action 3. Promote cluster formation, integration into international value-creating networks and investments into R&D and innovation					New cluster members within 3 years from the start of project implementation (pcs)	2	4	
					Private investments attracted in RDI by smart specialisation areas within 3 years after project implementation (in thousand EUR)	42 353*	95 295*	
	Measure 3.1. Support for cluster operation (“InoKlaster LT”)	798	-		583	Number of legally binding agreements with international partners (pcs)	4	10
	Measure 3.2. Support for participation in international RDI initiatives (“InoConect LT”)							
	Measure 3.3. Support for investments in cluster (“InoKlaster LT+”)		-		-			
Measure 3.4. Support for attracting direct foreign investments in the area of RDI (“Smartinvest LT”)	5,792*	-	32,012*					
Measure 3.5. Support for direct foreign investments in the area of RDI (“SmartInvest LT+”)	28,962*							
Action 4. Promote cooperation between research and business communities, Transfer of knowledge and technologies in order to commercialize R&D results				Ministry of Education and Science	Business commissions for R&D carried out by research and studies institutions (in thousand EUR)	3.6	4.7	
					Revenue generated by research and studies institutions from results of intellectual activities (in thousand EUR)	20.9	27.1	
	Measure 4.1. Creation and expansion of material facilities intended for the implementation of joint research and business projects in research and studies institutions (creation and expansion of infrastructure at centres of excellence)	8,690*	-		-	Patent applications and (or) applications to EFSA (pcs)	1	5
	Measure 4.2. Support for implementing R&D activities carried out by centres of excellence	11,580*	-		-	PhD studies delivered jointly with businesses (number of PhD candidates)	1	2
	Measure 4.3. Implementation of market-oriented research and business projects through crossborder network	185	-		-			
Measure 4.4. Promoting commercialization of RD results at research and studies institutions	203	504**	-					
Action 5. Strengthen the potential and capacities of research and studies institutions to create and commercialize knowledge and train research and innovation management experts					External consumers from foreign research and studies institutions, Lithuanian and foreign companies who have used upgraded open access research infrastructure (revenue received from these consumers (in thousand EUR))	18.9	24.5	
					Number of publications in frequently quoted period scientific publications (pcs)	21	27	

Measure 5.1. Upgrading of RDI and studies infrastructure in the area of smart specialisation	52,132*	-	-	Number of researchers working in the upgraded research infrastructure (in full-time employment equivalents)	30	39	
Measure 5.2. Creation and expansion of European research infrastructures and Lithuanian integration into European research infrastructures in accordance with Lithuanian research infrastructure roadmap and ESFRI**	26,066*	1,008**	-		Number of knowledge-intensive spin-offs in research and studies institutions	0	2
Measure 5.3. Upgrading of equipment used in open Access centres by smart specialisation areas	2,114	-	-				
Measure 5.4. R&D activities carried out by Lithuanian research and studies institutions	770	-	-				
Measure 5.5. Subscription of data bases required for RDI activities	26,640*	-	-				
Measure 5.6. Creation of infrastructure for centres of excellence and parallel laboratories	5,790*	504**	-				
Measure 5.7. Expansion of information infrastructure for research and studies (LITNET)	4,340*	-	-				
Measure 5.8. Attracting foreign researchers and R&D activities	14,481*	-	-				
Measure 5.9. Promoting activities of innovation and technology transfer centres at research and studies institutions	14,480*	-	-				
Measure 5.10. Ensuring the process of PhD studies; PhD studies, travels, scholarship, R&D, relocation, funds for study visits (including foreign PhD candidates)	644	62,154**	-				
Measure 5.11. Employment of scientists and other researchers in knowledge-intensive firms	2,896*	-	-				
Measure 5.12. Brain gain and reintegration	5,792*	-	-				
Measure 5.13. Student R&D activities	2,317*	-	-				
Measure 5.14. Promoting internships after PhD studies	7,240*	-	-				
Measure 5.15. Training of specialists in study programmes related to smart specialisation priorities	233	-	-				
Measure 5.16. Developing science promotion system	12,000**						
Measure 5.17. Funding for first and second cycle and full-time and non degree studies	-	220,032**	-				
Measure 5.18. Support for mobility of Lithuanian and foreign students and academic staff	-	3,438**	-				

Measure 5.19. Practical training to scientists and other researchers, participation by scientists and other researchers in international programme target events, participation by Lithuanian researchers in target meetings intended for the preparation of project applications, participation by Lithuanian representatives in EU and other international working groups, committees, commissions related to research and (socio-cultural) development. / Promoting participation in the H2020	4,503**	258**	-				
Measure 5.20. Ensure funding for RD activities relevant to the tackling of problems of highest priority and strategically important to the state and society and to economic growth	-	94,314**	-				
Measure 5.21. Support intersectoral cooperation in the area of R&D	-	2,364**	-				
Measure 5.22. Create conditions for researchers to use digital scientific data	-	450**	-				

* Funds not allocated to specific priorities in the priority areas of research and (socio-cultural) development and innovation (smart specialisation), results of implementation of which may contribute to the implementation of all or majority of the RDI Priorities

** Funds for measures which are relevant to the entire system of studies and R&D and innovation and not attributed to specific RDI Priorities, results of implementation of which may contribute to the implementation of the Priority.

Appendix 2 to the Action Plan for the
Priority Sustainable Agrobiological Resources
and Safer Food in the priority area of research and
(socio-cultural) development and innovation
(smart specialisation) Agro Innovation and Food
Technologies

POLICY MIX FOR STUDIES AND RDI

Generation of critical mass on research potential	Search for new ideas and their solutions	Creation of technologies and their prototypes	Introduction in the market	Generation of critical mass on business potential
Measure 5.1. Upgrading of RDI and studies infrastructure in the area of smart specialisation	Measure 1.1. Joint research and business projects contributing to the implementation of smart specialisation			Measure 3.1. Support for cluster operation (“InoKlaster LT”)
Measure 5.2. Creation and expansion of European research infrastructures and Lithuanian integration into European research infrastructures in accordance with Lithuanian research infrastructure roadmap and ESFRI	Measure 1.2. Support for the creation or expansion of firms’ RDI infrastructure and implementation of RDI activities (“Intellect”)			Measure 3.2. Support for participation in international RDI initiatives (“InoConect LT”)
Measure 5.3. Upgrading of equipment used in open Access centres by smart specialisation areas	Measure 5.4. R&D activities carried out by Lithuanian research and studies institutions	Measure 1.5. Support for recertification activities in respect of new products and technologies and testing in laboratories and real-life conditions (“Inosertifikavimas”)		Measure 5.11. Employment of scientists and other researchers in knowledge-intensive firms
Measure 5.5. Subscription of data bases required for RDI activities	Measure 2.1. Support for the provision of innovation consulting services (“Inogeb LT”)			
Measure 5.6. Creation of infrastructure for centres of excellence and parallel laboratories	Measure 2.2. Support to firms engaged in RDI activities through financial instruments (“Technostartas LT”, “Koinvest LT”)			
Measure 5.7. Expansion of information infrastructure for research and studies (LITNET)	Measure 3.4. Support for attracting direct foreign investments in the area of RDI (“Smartinvest LT”)			
Measure 5.9. Promoting activities of innovation and technology transfer centres at research and studies institutions	Measure 3.5. Support for direct foreign investments in the area of RDI (“SmartInvest LT+”)			
Measure 5.10. Ensuring the process of PhD studies; PhD studies, travels, scholarship, R&D, relocation, funds for study visits (including foreign PhD candidates)	Measure 4.4. Promoting commercialization of RD results at research and studies institutions			
Measure 5.12. Brain gain and reintegration	Measure 5.20. Ensure funding for RD activities relevant to the tackling of problems of highest priority and strategically important to the state and society and to economic growth	Measure 1.3. Support to firms RDI by issuing innovation cheques (“Innovation Cheques”)	-	Measure 3.3. Support for investments in cluster (“InoKlaster LT+”)

Measure 5.14. Promoting internships after PhD studies	Measure 3.2. Support for participation in international RDI initiatives (“InoConect LT”)		-
Measure 5.15. Training of specialists in study programmes related to smart specialisation priorities	Measure 5.13. Student R&D activities		
Measure 5.8. Attracting foreign researchers and R&D activities	Measure 1.4. Support for international patent activities with respect to inventions and designs (“InoPatentas LT”)		
Measure 5.16. Developing science promotion system	-	Measure 4.3. Implementation of market-oriented research and business projects through crossborder network	
Measure 5.17. Funding for first and second cycle and full-time and non degree studies		-	
Measure 5.18. Support for mobility of Lithuanian and foreign students and academic staff			
Measure 5.19. Practical training to scientists and other researchers, participation by scientists and other researchers in international programme target events, participation by Lithuanian researchers in target meetings intended for the preparation of project applications, participation by Lithuanian representatives in EU and other international working groups, committees, commissions related to research and (socio-cultural) development. / Promoting participation in the H2020			
Measure 5.21. Support intersectoral cooperation in the area of R&D			
5 Measure 5.22. Create conditions for researchers to use digital scientific data			
Measure 4.1. Creation and expansion of material facilities intended for the implementation of joint research and business projects in research and studies institutions (creation and expansion of infrastructure at centres of excellence)			
Measure 4.2. Support for implementing R&D activities carried out by centres of excellence			