ISMERI EUROPA

EXPERT EVALUATION NETWORK
DELIVERING POLICY ANALYSIS ON THE PERFORMANCE OF COHESION POLICY 2007-2013

TASK 1: POLICY PAPER ON INNOVATION

LITHUANIA

VERSION: FINAL DRAFT
DATE: AUGUST 2010

ALF VANAGS AND JUSTINA BANYTE
BALTIC INTERNATIONAL CENTRE FOR ECONOMIC POLICY STUDIES

A report to the European Commission
Directorate-General Regional Policy

CONTENTS

1 EXECUTIVE SUMMARY

With GDP per capita at below 75 percent of the EU average and the whole country part of a NUTS II region, all of EU Structural Assistance for Lithuania is provided under the Convergence Objective and has no specific regional component. Moreover, innovation policy is developed and implemented at a national level only.

Innovation-related issues are among the main priorities of the 2007-2013 programming period and the European Regional Development Fund plays a dominant role in supporting innovation initiatives through the second operational programme 'Economic Growth'. Support is provided under three priorities: 1) R&TD for competitiveness and growth of business; 2) Increasing business productivity and improving the environment for business and 3) Information society for all.

The planned expenditure allocation to initiatives under these priorities amounts to about 1.16 billion EUR , just over 37% of total ERDF spending.

To date there is no substantial evidence on the performance of innovation measures co-financed by ERDF except in terms of the level of implementation. Until 17th of April 2010 support was confirmed for just over 62% of allocated funding and 26% of all allocated funding was disbursed. However, nearly 90% of disbursements cover funding of institutions implementing financial engineering instruments and, in practice, very little of this has yet reached final beneficiaries i.e. businesses.

At the same time, there has been considerable interest in R&TD projects: in 2008-2009 500 entities received support (amounting to 110 mill EUR) and several large-scale projects were confirmed (Technological clusters creation, scientific parks establishment, etc.). However, implementation remains slow and evidence on impact is as yet not available.

Lithuania remains low in terms of the European league table of innovation e.g. on the 2009 European Innovation Scoreboard Lithuania was in the 4th last place among EU27. An improvement via innovation policy is constrained by a high burden of bureaucracy, the uncertain economic situation, and continuing lack of expertise on the part of potential applicants.

The overall situation is well summarized by the 2009 Innovation Policy Progress Report for Lithuania "Lithuania has made tremendous progress in innovation policymaking and implementation … the SF [have] formed a real base for the implementation of a wide range of innovation support measures, both in the public and private sectors. Although is too early to appraise the success of the measures, the current state of play gives positive hope for the future" (p ii).

2 NATIONAL AND REGIONAL INNOVATION POLICY AND THE CONTRIBUTION OF THE ERDF

2.1 NATIONAL AND REGIONAL INNOVATION POLICY

Innovation is regarded as the main tool for promoting and sustaining long term economic growth. Lithuania's Cohesion Policy 2007-2013 identifies three *breakthrough areas*:

- the development of a high quality labour force,
- an increase in the share of high and medium added value businesses
- fostering innovation creation in SMEs.

Applied research and product development are identified as the key priority. In particular, it is seen as important to enhancing the partnership between public and private sectors and providing the fundamental infrastructure to do so needed for this. The overall objectives of innovation policy are set out in the Lithuania National Strategic Report 2009 and the National Lisbon Reform Programme documents. Targets include: increasing the number of businesses operating in high-tech sectors thereby shifting the country towards a high added value economic model; increasing business productivity via extensive support for innovation in SMEs; and increasing the efficiency and usage of the supporting infrastructure. These objectives are accompanied by financial engineering projects to provide new financing for innovative initiatives and enterprises. Detailed policy targets are proposed. The Government expects to increase the following:

- expenditure on R&TD (both private and public),
- the share of the high-value added products in the export structure,
- the number of employees in innovative enterprises,
- the number of installed new technologies, number of new products,
- the number of patents,
- the number of publications in scientific journals,
- the number of PhDs,
- the number of new work places created.

The importance of knowledge dissemination between entities is stressed. However, the fundamental objective is the creation of the right infrastructure. The National Clusters Programme launched in 2006 is expected to run until 2015. The aim of this policy is to create a strong foundation based on one national research centre supported by 5 technological clusters.

Another strategic goal is to build an ITT platform for government and public services and information and create accessible and reliable Internet and digital television coverage together

with key services such as health, government and public services. Implementation will be tracked by monitoring both usage developments and the share of users who evaluate the services provided positively.

Role of ERDF

According to the 2009 Innovation Policy Progress Report for Lithuania "an absolute majority of innovation support measures are financed by EU SF. The direct support measures targeting the business sector are co-financed by the business sector as a rule of support provision. Public support infrastructure development measures are co-financed by the national budget, municipalities, or public non-profit organisations. However, the core funding source for all measures are EU SF" (p.21) Within the structural funds the ERDF is the dominant source of financing for innovation-related initiatives (see Table 1 of Annex A).

Support for innovation enters through the second Operational Programme - Economic Growth. As indicated in Table 1, the support amounts to 37.4% of ERDF funds, 1,157,544,659 EUR, allocated to Lithuania. It is decomposed into specific initiatives that relate to innovation. The initiatives (Table 1 of Annex A) with their corresponding instruments aim to realize the goals described in the previous section (see also Annex B for the National Strategic Framework). The initiatives set out under the 1st priority 'R&TD for Competitiveness and Growth of Business' aim to create a platform that enables cooperation between business and academic institutions. Specific instruments are: poles of science, clusters, technological and science clusters. The initiatives promote research activities in the centres and expand the scope of applied research to the industrial sector. Also, there is provision for infrastructure to foster communication and knowledge dissemination. Lastly, the initiatives target not only local enterprises, but strive to attract more foreign investments as well.

The 2nd group of initiatives (priority 2) is aimed more directly at businesses: emphasis is put more on private SMEs, management methods and financing issues. The instruments are intended to attract private investments (New Opportunities, Leader LT, Invest LT) and provide financial engineering solutions for innovative companies that do not meet the requirements for traditional credit or loan financing (holding fund - venture capital, guarantee fund, partial financing of loan interest). The goal is to increase productivity, revenues and exports.

The purpose of the initiatives in the 3rd priority 'Information Society for All' is to increase the efficiency of public institutions and to promote the development of electronic services. To accomplish this goal an efficient innovative infrastructure has to be created and instruments such as broadband electronic communications networks and the development of digital television are intended to provide this.

The ERDF is the principal institutional mechanism that supports innovation policy directly and combines contributions to public and private sectors[1]. Unlike the 2004-2006 period, when a sectoral approach was used (so the support was allocated for all fields within priority sectors despite different specifics within it), a targeted approach (focusing on specific problems across sectors) has been adopted in the current programming period. This means that the same instruments can be used for different priorities (objectives).

2.2 ERDF CONTRIBUTION ACROSS POLICY AREAS

Subdividing ERDF support across policy areas (see Table 2 of Annex A) shows that the biggest share of support goes to *boosting applied research* (nearly 45% of the total ERDF contribution to innovation). This allocation of resources is in line with the main aim of the guidelines drawn up in the National Strategic Report, namely to increase the partnership between academic researchers and private enterprises as well as helping to provide financing for collaboration. The recipients of the support are both public and private sector actors and networks of such actors.

One third of the support is allocated for *knowledge transfer and poles*, of which more than 2/3 is directed to the R&TD infrastructure and centres of competence in a specific technology. This area requires heavy material investments and Lithuania plans to create a Joint Institute of Physical and Technological sciences and 5 research clusters (planned to start operating within 3-4 years). The support is intended for infrastructure, facilities, equipment acquisition and installation, and modernization of existing laboratories. The main instruments here are InnoCluster LT, InnoCluster LT+, InnoAbilities LT-1, and InnoAbilities LT-2. The recipients are universities, other public institutions that meet the programme requirements and enterprises.

Finally, creating an *innovation friendly environment* receives a share of just over 22% of the funding. The main measures in this field are programmes fostering better communication and more accessible public services and information: electronic democracy for the regions, intelligent management systems, electronic government services, electronic learning services, electronic government services for regions, promoting the development of digital television, broadband electronic communications networks. This policy area also aims at promoting modern management and informational systems for enterprises, the main beneficiaries are again both public and private institutions.

The support measures are consistent with the National Strategy[2] that emphasizes the need to: shift from traditional to high-tech industries, increase productivity and create adequate

1 In addition to the ERDF initiatives, one the objectives of the ESF funded Human Resources Development Operational Programme is 'Strengthening of capacities of researchers and scientists'.

2 National Strategic Report is available at: http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Ataskaitos/National_strategic_report_2009_ENG.pdf

infrastructures for R&TD and to attract FDI in the field. However, not everyone agrees that the chosen distribution of ERDF support is optimal. According to Artūras Jakubavičius from the Lithuanian Innovation Centre the authorities tend to focus on measurable and easily implemented initiatives (such as infrastructure) rather than raising human potential and enterprise awareness of innovation and encouraging prior search for potential niches. However, arguably, concrete developments in innovative applications are not possible without adequate infrastructure, so maybe the answer is to find a new balance between the creation of infrastructure and fostering the motivation and ability to use it: current categories of expenditure using existing instruments can be found in Annex C.

On the inter-regional innovation level, Lithuania is involved in the Baltic Sea Region Programme 2007-2013, CLOE programme (2007-2008), BSR-INNOnet (carried forward from 2006), JOSEFIN project (extension of Teico-Net in 2004-2007), and INTERREG IVC (2007-2013). The last programme fosters interregional cooperation and knowledge sharing on good practices in implementing support for innovation and knowledge economy. The programme potentially involves all EU member states, but Lithuania has yet to take the lead in a project, which suggests that to date Lithuania has adopted a passive role in this programme.

3 EVIDENCE AVAILABLE ON THE PERFORMANCE OF INNOVATION MEASURES CO-FINANCED BY ERDF

Evaluation of both outputs and results remains extremely limited because many ERDF projects for 2007-2013 have not started yet or have been postponed because of the unfavourable economic and budgetary situation. The head specialist of the structural assistance policy department, Renata Blaževič, admits that evaluations regarding this period are only at a preparatory stage and thus concrete conclusions and recommendations will be drawn later on. While *ex-ante* evaluations stressing the need for the adopted instruments have been carried out, *ex-post* evaluations have not.

3.1 ACHIEVEMENTS UNDER THE CONVERGENCE OBJECTIVE

Since there is no substantial evidence on the performance of innovation measures for 2007-13 and the *ex-post* evaluations concerning the previous programming period propose only general suggestions and administrative issues for the future, this section reports on and discusses implementations classified according to policy areas. The amount of financing due to final beneficiaries for innovative categories of expenditure is given in Annex F.

Boosting applied research and product development. The Programme of the Development of Integrated Science, Studies and Business Centres (Valleys) for 2007-2013, confirmed in 2008 (see Annex D), is among the most important contracted initiatives.

In terms of financing by categories of expenditure progress has been uneven (see Annex F). Thus, until 15th December the final beneficiaries of 'R&TD activities in research centres' (FOI 1) had received only 0.1% of the total allocated ERDF support for 2007-2013, while 'Other measures to stimulate research and innovation and entrepreneurship in SMEs' (FOI 9) had received 86.2% (341mill EUR). However, it should be noted that EUR 303 millions of this represent disbursements to the financial intermediaries implementing financial engineering instruments e.g. venture capital and these are not the 'true' final beneficiaries.

During the financing period for 2004-2006, the instrument '3.1 Direct support to business' 118.13 mil EUR was a predecessor of current initiatives. In terms of formal targets the programme was relatively successful: 71 percent of the targeted number of projects aimed at increasing the share of high-value added products in the economy were implemented, 40 projects were implemented that added to the competitiveness of firms by creating new products, there was a boost in the demand for better-skilled labour and new markets were opened.

Indicators have been positive: 156.29 percent of planned private capital was attracted (179.73 mil EUR) and 98.61 percent, or 2761, work places created.

At a macroeconomic level, instrument 3.1 was estimated as generating a high contribution e.g. a GDP multiplier of 2.5, private consumption (1.62), investments, etc.[3]

However, a genuine counterfactual analysis of long-run effects has to date not been undertaken.

Knowledge transfers and poles. As of 15th of December 2009, 6 (out of a planned 60) contracts for the R&TD base establishment had been completed, 222 R&TD projects had been confirmed attracting private investments of 4.25 mil EUR, 11 projects to develop R&TD infrastructure and 263 projects to enhance productivity, including SMEs (37.3 mil EUR worth of private investment attracted) were signed.

The biggest projects were:

- Under the initiative Leader LT 17.78 mil EUR of ERDF funding was allocated to 5 private enterprises: Ltd Intersurgical, Ltd Sicor Biotech, Ltd ViaSolis, Ltd Baltic Solar Solutions, and Ltd Baltic Solar Energy to establish research and experimental production centres for medicine, bio-pharmacy, and solar energy in Visoriai IT Park. The contract was signed in 2010 and the total costs will amount to 43.44 mil EUR. No significant results have been achieved so far, but the fact that private enterprises have been attracted is a positive sign.
- InnoCluster LT has promoted the development of Photo-electronic Technology Cluster involving 24 members (private enterprises, universities and a private research centre ProTech). The partners aim to create a new high-tech industry in the country. Precizika-

[3] The effect of intervention was calculated as multiplier = sum of total effect/sum invested. For the evaluation of the effects a modified model LEMAM was used. (Information taken from *The Final Evaluation Report on the Effectiveness of 2004-2006 European Union Programming Period and Recommendations for the 2007-2013 EU Programming Period.*)

MET SC has opened the first factory producing solar cells with investments of 2.9 mil EUR and it is expected that 20-25 work places will be created. ERDF support for the cluster is expected to cover half of the total expenditure (14.48 mil EUR).

The current InnoCluster LT and InnoCluster LT+ are indirect continuations of the instrument '3.2 The Improvement in business environment' which was undertaken in 2004-2006 financing period. As with instrument 3.1 only formal results compared with targets are available and provide little evidence of what to expect in the current period. A positive note is that peripheral municipalities were involved as beneficiaries of this instrument thereby contributing to the reduction of economic disparities within the country.

Innovation friendly environment. Within the 'Information Society for All' priority so far only the 'broadband electronic communications networks instrument' has been implemented which in practice was something carried forward from the previous programming period. According to CNN Money, in 2009 Lithuania ranked 14th in the world for the quality of its broadband Internet. Coverage has increased dramatically and in 2009 reached 21.1% of the households. The project was started as early as 2005 and is a part of the Development Strategy of the Broadband Infrastructure of Lithuania for the 2005-2010 programme. In 2005-2007 it was implemented under the name RAIN. Now the project has been extended as RAIN-2 and will run until 2010 and beyond. (Financing for the RAIN-2 programme is given in Annex E) The usage of both computers and internet has increased significantly since 2007 and the two indicators have just about converged so that now almost every household computer is equipped with internet access.

The current instrument 'Information Society for All is an extension of SPD Measure 3.3 'Development of Information Technology Services and Infrastructure'. The results of the latter financing period were quite positive: 14 projects were implemented to create public e-services, while 5 projects focused on development of e-infrastructure. The output of the projects was 3,791 km of new broadband network channels, 400 new PIAPs were installed and 83 modernized. The goal was achieved – the number of constant users increased as planned (by 5.85 per year). Much of the increase covered rural and less-urbanized areas and the number of internet users in those areas increased by 25,000 internet subscribers. So connection disparities were reduced not only externally between Lithuania and EU countries, but also internally between urban and rural citizens. Other successful projects continued from the previous financing period are 'System for accepting and processing electronic social security forms', which contributed to the development of public e-service and increased its efficiency and transparency, and an 'Early Patient Registration System', which improved the quality of the services and its usefulness. The success of these bodes well for the e-services components of the current programme.

On a general level, according to data presented by Arūnas Keraminas from the Lithuanian Ministry of Economy at the seminar "Innovation – the future of Lithuania" the main results achieved over 2008-2009 were as follows: in total 500 innovative enterprises received support for EUR 110

million. On average, each enterprise received EUR 0.22million and more than 80% of the recipients were SMEs. Lastly, around 60% of the funds directly supported high and medium value added technologies.

In brief, the available evidence on the outcomes and results of innovation policy in the current programming period does not go beyond the first stages of implementation and we are not aware of any evaluation actual or planned that goes beyond this. For the previous period an evaluation of the effectiveness of financing and cooperation between businesses and scientific institutions is in the planning stage and a report is expected in 2011.

Moreover, the economic turmoil has discouraged some entities from pursuing projects that had been planned. Some projects have been successfully completed, but the scale of such projects is too small to be a major factor in influencing the overall economy. A positive signal is that increasing numbers of innovative enterprises are undertaking big-scale projects and publicizing their plans for them. Therefore, there are positive prospects that the increase in such activities will result in a critical mass effect and encourage other entities to step in. Lastly, there has been a continuation of successful projects from the previous programming period (ex. RAIN) and noticeable move to an information-technologies based society at least in terms of available infrastructure.

4 CONCLUSION: MAIN CHALLENGES FACED BY COHESION POLICY PROGRAMMES

To sum up, innovation is now a major policy priority for Lithuania and the ERDF is the most important source of support for innovation. According to Ieva Stanaitytė from the Ministry of Finance, this is in contrast to the 2004-2006 programming period when innovation received only modest attention.

Because economic conditions have been unfavourable and projects typically pay off only in the long term, at this point of time no substantial evidence exists on the impacts of the policy. However, the number of initiatives undertaken and applications received show a positive trend. The Government has identified the sectors of focus (see Annex H) and private enterprises have already shown great interest in both small and large scale projects. In addition to the development of new initiatives, the successful extension of the RAIN project will enable Lithuania to compete in the international market as one of the countries with the highest potential for IT (due to high-quality internet coverage and human potential). Cross-border cooperation also helps to transfer and obtain both knowledge and experience at a intra-European level.

However, important challenges remain:

- On the planning side, there are substantial delays in drafting and confirming the documents needed for strategic planning and the incomplete legislative base requires

adjustments. This is accompanied by delay in preparing the evaluations and reports about previous support provided.

- On the implementation side, it is argued that operational programmes should be adjusted in line with the changing environment (i.e. economic crisis and its impact on the needs of entities). Moreover, a substantial share of project applicants still lack experience and knowledge of how to prepare the documents needed to obtain support and draw up the appropriate reports. It should also be noted that although Lithuania has chosen to target certain problems, there are too many priority directions (for example the number of high-tech industries of focus) so that the policy portfolio remains over-diversified and probably not concrete enough for a small economy. Although the targeted approach nails down the priorities better than the sectoral approach, too many targets can still dilute the effectiveness of support.
- Constraints on national funding have emerged as a result of the crisis (due to fiscal consolidation and spending cuts) and give rise to further problems: EU support alone is not enough to shift economy towards the innovation policy goals chosen and a substantial national contribution is needed. However, and perhaps ironically, innovation was never really a spending priority during the boom.
- The mix between hard infrastructure projects and more soft initiatives aimed at developing the motivation to innovate remains a issue.
- At a more general level, expenditure on R&TD as a share of GDP remains low - in 2008 it was 0.8 % which is well below the target of 2.2%, while in terms of the 2009 Summary Innovation Index Lithuania remains above only Bulgaria, Latvia and Romania among EU27 countries.

REFERENCES

Interviews carried out:

Artūras Jakubavičius – the manager of projects at the Lithuanian Innovation Centre

Renata Blaževič – specialist of the structural assistance policy department, Ministry of Economy.

Ieva Stanaitytė – specialist of the EU structural and cohesion funds managing department, Ministry of Finance.

Official evaluations:

PI European Social, Legislative and Economic Projects. (2009). *The Final Evaluation Report on the Impact of 2004-2006 SPD Measure 3.3 'Development of Information Technology Services and Infrastructure' in Lithuania*. Available at: http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Vertinimas_ESSP_Neringos/Ataskaitos_2008MVP/BPD_3.3_poveikio_ataskaita.pdf

PI European Social, Legislative and Economic Projects. (2008). *The Final Evaluation Report on the Effectiveness of 2004-2006 European Union Programming Period and Recommendations for the 2007-2013 EU Programming Period.* Available at: http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Ataskaitos/BPD_vertinimo_ataskaitos/UM_38_ataskaita.pdf

National Strategic Report 2009 of the Lithuanian Strategy for the Use of European Union Structural Assistance for 2007-2013. Available at: http://ec.europa.eu/employment_social/esf/docs/nacionaline_strategine_ataskaita_lithuania_2009_lt.pdf

Upcoming evaluations

The Evaluation of the Financing and Effectiveness in Cooperation between Scientific Institutions and Enterprises. *Contracted by the Ministry of Economy*. Expected release – 2011 I q.

Additional sources used:

Aputis, M. (2008). *Rural Areas Broadband Internet Network (Rain) in Lithuania: Technical and Economical View*. Available at: http://www.balticbroadband.net/fileadmin/user_upload/best_practice/Rural_Areas_Broadband_Internet_Network_%28RAIN%29.pdf

Baubinas, K. (2008). *Waiting for the Innovations to Foster the Exports*. Published in *Business News* on the 8th of July, 2008. Available at: http://archyvas.vz.lt/news.php?id=1498612&strid=1002&rs=20&ss=&y=2008%2007%2008

Centre for Strategy & Evaluation Services LLP. (2006). *Ex Ante Evaluation of the Lithuanian Operational Programmes 2007-13. Final ex-ante evaluation report*. Available at: http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Vertinimas_ESSP_Neringos/Final_Report_Ex_ante_integrated_2007_May.pdf

Delfi.lt. (2009). *D. Kreivys: The Country's Economy Must be Restructured.* Published on the 16th of September, 2009. Available at: http://www.delfi.lt/news/economy/business/dkreivys-salies-ekonomika-butina-pertvarkyti.d?id=24038837

Economic Growth Operational Programme for Period 2007-2013. (2006). Available at: http://www.esparama.lt/2007-2013/en/10

European Commission Enterprise Directorate-General. (2008). *INNO-Policy TrendChart - Policy Trends and Appraisal Report for Lithuania.* Available at: http://www.proinno-europe.eu/extranet/upload/countryreports/Country_Report_Lithuania_2008.pdf

European Commission Enterprise Directorate-General. (2009). *INNO-Policy TrendChart - Annual Implementation Report of Economic Growth Operational Programme for Year 2008.* Available at: http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Ataskaitos /Metines_ataskaitos_2009/2008_2VP.pdf

Gintautaitė, A. (2010). The Opening of the First Solar Cells Factory in Lithuania. Published in Business News on the 26th of January, 2010. Available at: http://vz.lt/straipsnis/2010/01/26/Atidaroma_pirmoji_saules_elementu_gamykla_Lietuvoje?readcomment=1#CommentAdd 1

Innovation Policy Progress Report for Lithuania. (2009). Available at: http://www.proinno-europe.eu/extranet/upload/countryreports/Country_Report_Lithuania_2009.pdf

Jucevičius, R. (2005). *A study of Lithuanian Innovation Policy and its Fundamental Provisions*. Available at: www.infobalt.lt/docs/JUCEVICI.pdf

Keraminas, A. (2009). *EU and National Support for Innovations in Lithuania.* Presentation given on the 5th of November, 2009 in the conference *Innovations - the Future of the Economy of Lithuania*. Available at: http://www.ukmin.lt/lt/veikla/veiklos_kryptys/ino/2009-11-05%20ES%20ir%20nacionaline%20parama.ppt

Kirvaitienė, S. (2005). *Allocation Stage of the European Union Structural Assistance for the period 2007-2013: Conception, Terms, Coordination*. Presentation given on the 2nd pf June, 2005at the *Knowledge Economy Forum*. Available at: http://www.zef.lt/uploads/ZEF_ESSF2007-2013_aiskinamoji%20schema_20050602_sk3.ppt

Ltd. Economic Consultations and Researches. (2007). *The Most Effective Approaches to Use the European Structural Assistance for Business Support.* Available at: http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Ataskaitos/BPD_vertinimo_ataskaitos/UM_37.pdf

Ministry of Economy. (2009). *Innovative Lithuania*. Available at http://www.ukmin.lt/lt/veikla/veiklos_kryptys/ino/Innov%20EN.pdf

Ministry of Economy. (2010). *European Union Structural Assistance for Period 2007-2013*. http://www.ukmin.lt/lt/veikla/veiklos_kryptys/es_strukturiniai_fondai/2007-2013/2007_2013_dokumentai_mttp.php

Ministry of Finance of the Republic of Lithuania. (2007). *The Report on SPD Implementation*

Personal Communication with the representatives of the Lithuanian Business Support Agency, Lithuanian Innovation Centre, Ministry of Finance. (2010).

PI European Social, Legislative and Economic Projects. (2009). *Evaluation of Lithuanian Development Priorities for the EU Structural Assistance for the period 2014-2020*. Available at: http://www.esparama.lt/es_parama_pletra/failai/fm/failai/Vertinimas_ESSP_Neringos/Ataskaitos_2008MVP/2014-2020_summary_090414.pdf

Pro Inno Europe. (2009). *European Innovation Scoreboard (EIS) 2009*. Available at: http://www.proinno-europe.eu/sites/default/files/page/10/03/I981-DG%20ENTR-Report%20EIS.pdf

Regional Policy - Inforegio. (2010). *Research and Innovation*. Available at: http://ec.europa.eu/regional_policy/themes/research/index_en.htm

Smith, A. (2009). *U.S. Broadband Lags Asian Nations*. Published on CNN.com on the 1st of October, 2009. Available at: http://money.cnn.com/2009/10/01/news/economy/broadband_internet_connection/index.htm?postversion=2009100111

Technologijos.lt. (2010). *In Lithuania the Start for Solar Energetic Industry is Given.* Published in technologijos.lt on the 29th of January, 2010. Available at: http://www.technologijos.lt/p/spausdinti?name=S-11150

The Government of the Republic of Lithuania. (2006). *Resolution for High-Technology Development Programme Approval for the year 2007-2013*. Available at: http://www3.lrs.lt/pls/inter3/dokpaieska.showdoc_l?p_id=285168&p_query=D%EBl%20auk%F0t%F8j%F8%20technologij%F8%20pl%EBtros%20programos&p_tr2=2

The Government of the Republic of Lithuania. (2007). *Resolution for Approval of the Integrated Science, Studies and Business Centres (Valleys) Creation and Development Concepts*. Available at: http://www.smm.lt/smt/docs/sleniai/integruotu%20mokslo,%20studiju%20ir%20verslo%20centru%20%28sleniu%29%20kurimo%20ir%20pletros%20koncepcija.pdf

ANNEX A - BACKGROUND DATA ON EU COHESION POLICY SUPPORT TO INNOVATION

Table 1: Total ERDF resources allocated per programme (2007-2013)

LITHUANIA				
Programme	**Total ERDF resources for innovation**	**Total ERDF**	**Innovation support as % of total ERDF**	**Main initiatives implemented**
Operational Programme for Promotion of Cohesion for 2007-2013		2,648,332,571	0.0%	ERDF support not applicable for none of the innovation projects
Operational programme for the Economical Growth for 2007-2013	1,157,544,659	3,098,853,525	37.4%	RTD for competitiveness and growth of business ➢ Development of high-level science centres and competence centres ➢ Creation of a national open-access scientific communication and information centre ➢ Strengthening of a general infrastructure of science and studies ➢ Creation of infrastructure for extending and spreading knowledge of research, technologies and innovation ➢ Idea LT ➢ Intellect LT; Intellect LT+ ➢ InnoCluster LT; InnoCluster LT+ ➢ InnoAbilities LT-1; InnoAbilities LT-2 Increasing business productivity and improving environment for business ➢ Leader LT ➢ E-Business LT ➢ Process LT ➢ New Opportunities ➢ Invest LT+ ➢ Assistant-2; Assistant-3 ➢ Holding Funds ➢ Partial financing of loan interest ➢ Guarantee fund ➢ Invest LT Information society for all ➢ Electronic government services; Electronic government services for regions ➢ Electronic democracy; Electronic democracy for regions ➢ Intelligent management systems ➢ Interoperability ➢ Electronic learning services ➢ Promoting the development of digital television ➢ Electronic health services; Electronic health services for regions ➢ Broadband electronic communications networks
Total Objective 1	**1,157,544,659**	**5,747,186,096**	**20.1%**	**Competitive economy**
Overall total	**1,157,544,659**	**5,747,186,096**	**20.1%**	***To improve the conditions for investments, working and living in Lithuania; to ensure that the economic growth is reflected at all social levels***

Table 2: ERDF Contribution to innovation by policy area (2007-2013)

LITHUANIA		
Policy Area	**Categorization of Expenditure (FOI codes)**	**Total ERDF**
Objective 1		
Assistance to SMEs for the promotion of environmentally-friendly products and production processes (...)	06	
Investment in firms directly linked to research and innovation (...)	07	93,750,823
Other measures to stimulate research and innovation and entrepreneurship in SMEs	09	395,302,350
R&TD activities in research centres	01	27,436,324
Boosting applied research Total		**516,489,497**
Advanced support services for firms and groups of firms	05	62,144,065
Developing human potential in the field of research and innovation, in particular through post-graduate studies ...	74	
Information and communication technologies (...)	11	55,219,981
Information and communication technologies (TEN-ICT)	12	
Other measures for improving access to and efficient use of ICT by SMEs	15	
Services and applications for citizens (e-health, e-government, e-learning, e-inclusion, etc.)	13	100,836,487
Services and applications for SMEs (e-commerce, education and training, networking, etc.)	14	40,814,769
Innovation friendly environment Total		**259,015,302**
Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres)	04	68,167,839
R&TD infrastructure and centres of competence in a specific technology	02	257,313,020
Technology transfer and improvement of cooperation networks ...	03	56,559,001
Knowledge transfers and poles Total		**382,039,860**
Total Objective 1		**1,157,544,659**

Table 3: Innovation policy in terms of National Strategic Reference Framework of Lithuania. Cohesion Policy 2007-2013

Priority direction	Task	Specific goals to be achieved	Share of total support (Fund)
2. Competitive economy	1) To increase the productivity of business (favorable conditions to be created for innovations undertaken by SMEs);	1) To increase the level of productivity to 65 % of EU average; 2) To increase the export of Lithuanian origin (except the production of refined oil) to 60% of total production sold;	45.7% (ERDF and Cohesion Fund)
	2) To increase the share of high and medium added value business;	1) To increase the expenditure for RTD to 2.2% of GDP; 2) To increase the number of patent applications registered at EPO to 50 patents/ 1 mil. of population;	
	3) To optimize the economic infrastructure	6) To provide an access to existing broadband Internet (covering 98% of the country's territory) for all willing households and SMEs; 7) To export 95% of the main public services to the electronic system.	

Source: National Strategic Reference Framework of Lithuania. Cohesion Policy 2007-2013.

ANNEX B – CLASSIFICATION OF INNOVATION POLICY AREAS, INSTRUMENTS AND BENEFICIARIES

Policy area	Short description
Innovation friendly environment	This category covers a range of actions which seek to improve the overall environment in which enterprises innovate, notably three sub groups: • innovation financing (in terms of establishing financial engineering schemes, etc.); • regulatory improvements and innovative approaches to public services and procurement (this category could capture certain e-government investments related to provision of services to enterprises); • Developing human capital for the knowledge economy. This category will be limited to projects in higher education aimed at developing industry orientated courses and post-graduate courses; training of researchers in enterprises or research centres. The category also covers initiatives geared towards improving governance capacities for innovation and knowledge policies (e.g. specific technical assistance funding, support for regional foresight)
Knowledge transfer and support to innovation poles and clusters	Direct or indirect support for knowledge and technology transfer: • direct support: aid scheme for utilising technology-related services or for implementing technology transfer projects, notably environmentally friendly technologies and ITC; • indirect support: delivered through funding of infrastructure and services targeting technology parks, innovation centres, university liaison and transfer offices, etc. Direct or indirect support for the creation of poles (involving public and non-profit organisations as well as enterprises) and clusters of companies • direct support: funding for enterprise level cluster activities, etc. • indirect support through funding the regrouping R&D infrastructure in poles, infrastructure for clusters, etc.

Boosting applied research and product development	Funding of "Pre-competitive development" and "Industrial research" projects and related infrastructure. Policy instruments include: • aid schemes for single beneficiaries or groups of beneficiaries (including IPR protection and exploitation); • research infrastructures for non-profit/public organisations and higher education sector directly related to universities. Any direct or indirect support for the creation of innovative enterprises (spin-offs and start-ups)

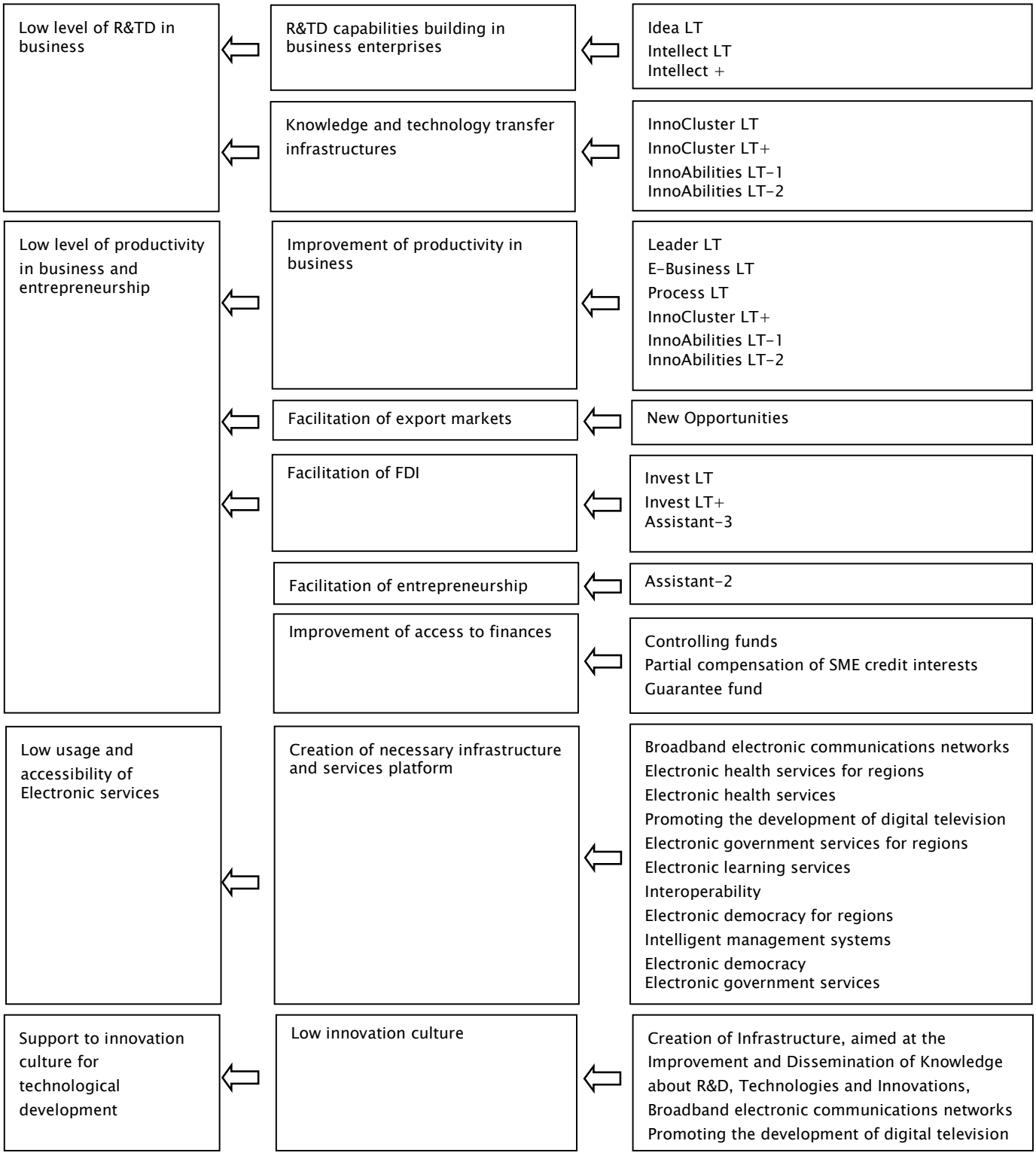
Instruments	Short description
Infrastructures and facilities	Building and equipping laboratories or facilities for university or research centres, Telecommunication infrastructures, Building and equipment for incubators and parks for innovative enterprises
Aid schemes	Grants and loans for RTDI projects Innovative finance (venture capital, equity finance, special bonds, etc.) for innovative enterprises
Education and training	Graduate and post-graduate University courses Training of researchers

Beneficiaries	Short description
Public sectors	Universities National research institutions and other national and local public bodies (innovation agencies, BIC, Chambers of Commerce, etc..) Public companies
Private sectors	Enterprises Private research centres
Others	NGOs
Networks	cooperation between research, universities and businesses cooperation between businesses (clusters of SMEs) other forms of cooperation among different actors

ANNEX C – CATEGORISATION OF EXPENDITURE TO BE USED FOR CALCULATING EU COHESION POLICY RESOURCES DEVOTED TO INNOVATION

FOI Code	Priority Theme
	Research and technological development (RTD), innovation and entrepreneurship
01	R&TD activities in research centres
02	R&TD infrastructure (including physical plants, instrumentation and high-speed computer networks linking research centres) and centres of competence in a specific technology
03	Technology transfer and improvement of cooperation networks between small businesses (SMEs), between these and other businesses and universities, postsecondary education establishments of all kinds, regional authorities, research centres and scientific and technological poles (scientific and technological parks, technopoles, etc.)
04	Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres)
05	Advanced support services for firms and groups of firms
06	Assistance to SMEs for the promotion of environmentally-friendly products and production processes (introduction of effective environment managing systems, adoption and use of pollution prevention technologies, integration of clean technologies into firm production)
07	Investment in firms directly linked to research and innovation (innovative technologies, establishment of new firms by universities, existing R&TD centres and firms, etc.)
09	Other measures to stimulate research and innovation and entrepreneurship in SMEs
	Information society
11	Information and communication technologies (access, security, interoperability, risk-prevention, research, innovation, e-content, etc.)
12	Information and communication technologies (TEN-ICT)
13	Services and applications for citizen (e-health, e-government, e-learning, e-inclusion, etc.)
14	Services and applications for SMEs (e-commerce, education and training, networking, etc.)
15	Other measures for improving access to and efficient use of ICT by SMEs
	Human capital
74	Developing human potential in the field of research and innovation, in particular through post-graduate studies and training of researchers, and networking activities between universities, research centres and businesses

ANNEX D: INNOVATION POLICY IMPACT AREAS



Source: INNO-Policy TrendChart – Innovation Policy Progress Report for Lithuania 2009 by European Commission (p.34)

The programmes	Date of confirmation
1. Lithuanian Marine Sector NIP (*Marine Valley*)	**23rd of July, 2008**
2. Terrestrial, forestry and agriculture NIP (*Nemunas Valley*)	1st of October, 2008
3. Programme of Vilnius Sunrise technological cluster (*Sunrise Valley*)	24th of November, 2008
4. Programme of Vilnius Unity cluster (*Unity Valley*)	24th of November, 2008
5. Programme of Kaunas Confluence cluster (*Confluence Valley*)	12th of November, 2008

ANNEX E: PROGRAMME OF THE DEVELOPMENT OF INTEGRATED SCIENCE, STUDIES AND BUSINESS CENTRES (VALLEYS) FOR 2007-2013

The programmes	Date of confirmation
5. Lithuanian Marine Sector NIP (*Marine Valley*)	**23rd of July, 2008**
6. Terrestrial, forestry and agriculture NIP (*Nemunas Valley*)	1st of October, 2008
7. Programme of Vilnius Sunrise technological cluster (*Sunrise Valley*)	24th of November, 2008
8. Programme of Vilnius Unity valley (*Unity Valley*)	24th of November, 2008
5. Programme of Kaunas Confluence valley (*Confluence Valley*)	12th of November, 2008

Source: AIR for Economic Growth Operational Programme in 2008.

ANNEX F: FINANCING FOR THE RAIN-2 PROJECT (FIGURES GIVEN IN EUR)

	2009	2010	2011	2012	TOTAL
ERDF	5,408,535	14,422,760	14,422,760	8,961,582	43,215,637
National Co-Financing	3,280,065	8,746,841	8,746,841	5,434,849	26,208,597
Total	**8,688,600**	**23,169,601**	**23,169,601**	**14,396,431**	**69,424,234**

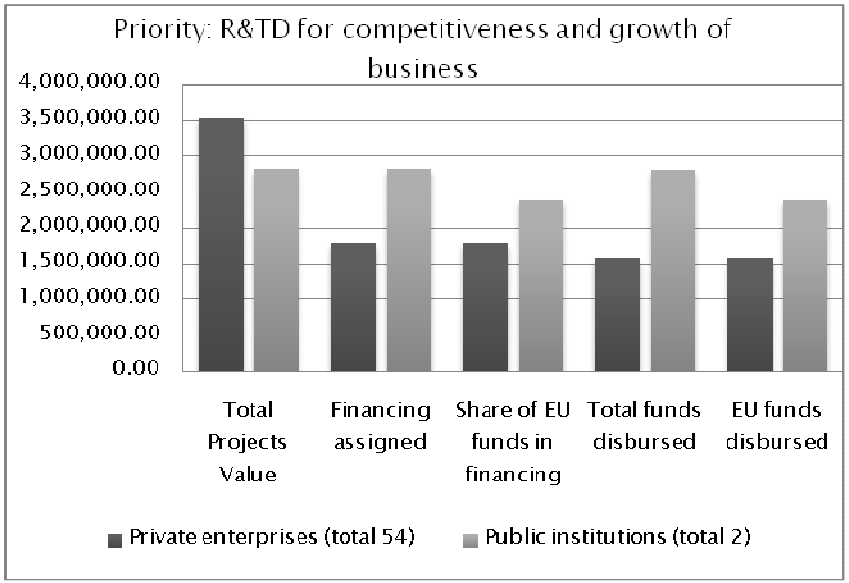
Source: The Development and Maintenance of Broad Band Internet Infrastructure in Rural Areas

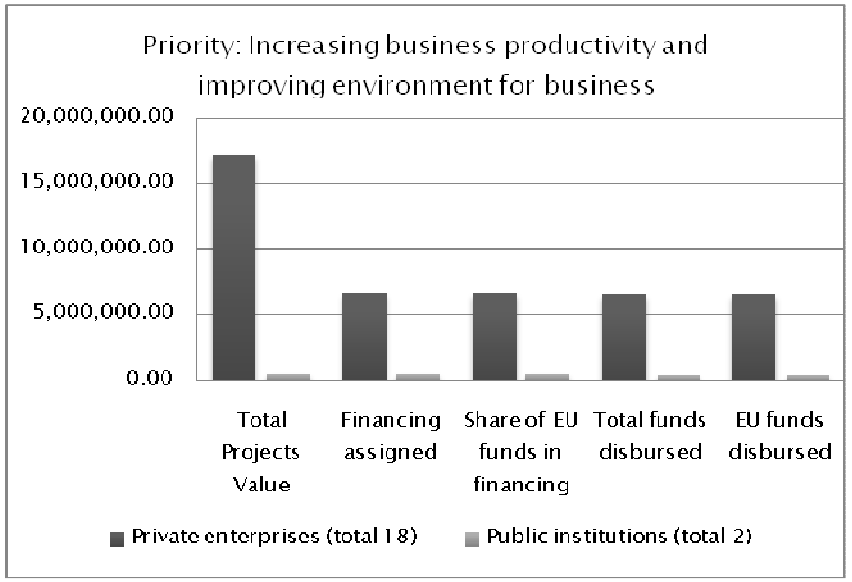
ANNEX G: EXPENDITURE CLASSIFICATION ACCORDING TO CATEGORIES AS FOR 15TH OF DECEMBER, 2009

Code	Policy Area	Total support allocated for period 2007-2013 (mill EUR)	Project financing (Share in % of total support)	
1	R&TD activities in research centres	27.44	0.03	0.01
2	R&TD infrastructure and centres of competence in a specific technology	257.31	31.99	56.55
3	Technology transfer and improvement of cooperation networks ...	56.56	4.91	7.20
4	Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres)	68.17	29.87	48.07
5	Advanced support services for firms and groups of firms	62.14	19.00	20.27
7	Investment in firms directly linked to research and innovation (...)	93.75	10.11	2.56
9	Other measures to stimulate research and innovation and entrepreneurship in SMEs	395.30	340.88	86.2
11	Information and communication technologies (...)	55.22	5.04	9.12
13	Services and applications for citizens (e-health, e-government, e-learning, e-inclusion, etc.)	100.84	22.36	22.18
14	Services and applications for SMEs (e-commerce, education and training, networking, etc.)	40.81	0.00	0.00

Source: National Strategic Report for the Implementation of EU Support for Convergence Objective in Lithuania 2007-2013 (2009)

ANNEX H: VALUE OF PROJECTS IMPLEMENTED UNDER THE PRIORITIES OF ECONOMIC GROWTH OPERATIONAL PROGRAMME 2007-2013.





Source: http://www.esparama.lt/2007-2013/lt/statistikaonline/igyvproj

ANNEX I: THE HIGH-TECH INDUSTRIES OF FOCUS AND COMPARISON OF ASSISTANCE PERIODS

Sector	Companies operating	2003-2006	2007-2013 (expected)
Biotechnology	Ltd. Fermentas; Ltd. Sicor Biotech; Ltd. Biocentras; Ltd. Biotechpharma; Ltd. Biota; Academic institutions.	• 5 projects (support of 1.27 mill EUR); • 11 articles in respective academic journals; • 4 thesis; 40 PhD academics involved; • 2 international patents; • 9 new work places; • New products that are exported.	• Up to 200 new work places; • FDI amounting to 28.96-57.92 mill EUR; • Bank of stem cells established; • Annual revenues from the sector would increase to 115.85-144.81 mill EUR.
Mechatronics	Ltd. Medelkom; Ltd. Limatika; Ltd. Siemens; Ltd. Baltec CNC Technologies; Ltd. Elintos Matavimo Sistemos; etc. Academic Institutions	• 4 projects (1.13 mill EUR) • 20 articles in respective academic journals; • 3 thesis; 44 PhD academics involved; • 2 international patents; • 14 new technologies created and 21 products; • 13 new work places; • Revenues increased by 28.96 mill EUR	• More companies established; • At least 300 new work places created; • Revenues should amount to at least 1 bill LTL
Lasers	Ltd. EKSMA; Ltd. Ekspla; Ltd. Šviesos Konversija; Ltd. Geola; Ltd. Standa; etc. Academic Institutions	• 5 projects (1.25 mill EUR); • 17 articles in respective academic journals; • 3 thesis; 37 PhD academics involved; • 1 international patents; • 9 new technologies created and 12 products; • 27 new work places;	• Annual revenues will increase to 289.62 mill EURL (export share would be at least 80%); • The number of employees will reach 700; • Starting from 2010 the tax revenues will be at least 11.58 mill EUR; • Demand creation for academic research carried out by other institutions (4.34 - 5.79 mill EUR for academic, 45-50 for business).
Information Technology	More than 1000 companies; Academic institutions	• 4 projects (1.07 mil EUR) • 3 articles in respective academic journals; • 1 thesis; 38 PhD academics involved; • 1 international patents; • 3 new technologies created and 9 products; • 14 new work places;	• A rapid development of science and technology parks; • 1-2 thousand new work places • 1158.48-1448.10 mill EUR value added via application of information technologies; • 144.81-202.73 mill EUR FDI attracted

Nanotechnologies and electronics	Ltd.Elga; Ltd. Katra; Ltd. Vilniaus Ventos puslaidininkiai; Ltd. Elsis; Ltd. Geozondas; etc. Academic institutions	• 4 projects (0.98 mill EUR of total support); • 38 articles in respective academic journals; • 1 thesis; 36 PhD academics involved; • 5 new products created; • 6 new work places.	• New firms established; • Around 200 new work places created; • 28.96–57.92 mill EUR FDI attracted • New specific technologies created.

Source: The programme for the high-technology development in 2007-2013 (24 October, 2006).