LITHUANIA:
HIGHER EDUCATION AND RESEARCH

Population: 3,5 million

Number of students: 200 000

22 universities: 14 state, 8 private

23 colleges: 13 state, 10 private

11 state research institutes

5 integrated science, study and business centers (“Silicon valleys”)

13 800 researchers, 6400 with PhDs

300 - 400 new doctoral degrees each year

10,7 % researchers in business and industry

Investments in R&D: 0,8 % of GDP

www.aikos.smm.lt

A NEW APPROACH TO HIGHER EDUCATION AND SCIENCE: FOCUSING ON QUALITY

© ELTA

Within the last 20 years after becoming an independent country, Lithuania has been in the process of intense change in almost all fields. Significant and intensive steps towards modern democratic state have occurred and are still taking place in all fields of our society.

One of the most sensitive areas for structural shifts has been higher education and research. Lithuanian and foreign experts, students and academic community have been debating about the need for reform and its model for at least 10 years.

Finally, after prolonged political and academic disputes, in April 2009, the Parliament of Lithuania passed the Law on Higher Education and Research, which marked the start of the systematic restructuring of Lithuania's higher education and scientific research.

Considering global and national context and the need for modernisation, the Lithuanian Government initiated systemic reform based on the following principles:

- Competition as the main driving force for progress in higher education
- New financing method: funding the student, not the institution
- Strengthening colleges and revamping student loan system
- Enhancing autonomy of universities
- Enabling competitive research

We hope our efforts will become a success story to be shared internationally.

Gintaras Steponavičius
Minister of Education and Science

SITUATION BEFORE THE REFORM

HIGHER EDUCATION

Extensive growth in student numbers – not enough financing – quality concerns

Prior to the reform, enrollment in higher education in Lithuania had been higher than any other European country, but there had been serious concerns about higher education quality. Symptoms include:

- expenditure per student among the lowest in Europe
- many of the most capable students leaving the country to study abroad
- indicators of research output among the lowest in Europe
- supply of higher education places exceeding demand

RESEARCH

Not effective financing – old Soviet time structures – weak output

- high public spending on science and technology institutes, yet the results in terms of innovation below those of most other countries
- private sector playing a very small role in research and development
- state funding mostly used to support the core costs of research institutes, only a small part – competitively
- weak ties between research and business

HIGHER EDUCATION AND RESEARCH REFORM

GOALS

Quality. To create conditions and incentives necessary for the substantial improvement in quality of higher education

Accessibility. Favorable conditions to all who want and are able to pursue higher education

Competitiveness. State funding for the best students and researchers.

Efficient use of resources. State budget and EU Structural Funds.

NEW LAW ON HIGHER EDUCATION AND RESEARCH PASSED ON 30-04-2009

- Competitive funding of HE via student vouchers
- Programme based competitive research funding
- Consolidation of research institutes
- Institutional reform of universities and colleges
- External institutional evaluation
- Intellectual rights protection
- Agency of Research, Innovation and Technologies established

SOLUTIONS PROPOSED AND REALIZED BY THE REFORM

CHANGES
IN
FINANCING
AND
MANAGEMENT

HIGHER EDUCATION - FUNDING

SYSTEM OF STUDENT VOUCHERS

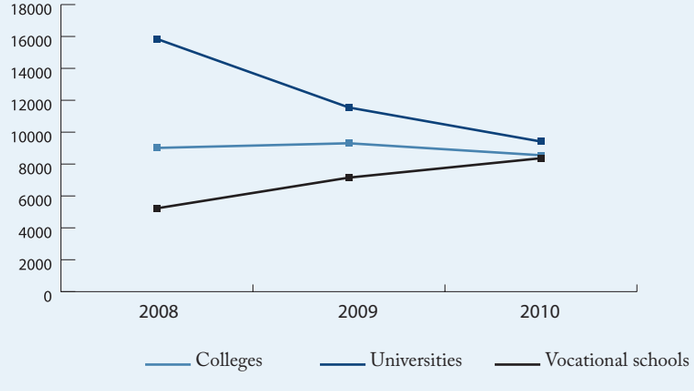
State funding for bachelor studies is provided in the form of student vouchers to best entrants applying to universities and colleges.

Student vouchers awarded to incoming students based on their secondary education graduation results.

State funds allocated for vouchers are divided into 11 areas of studies:

- humanities
- social sciences:
  - law
  - business
  - pedagogy
  - other social sciences
- physical sciences
- technology sciences
- arts:
  - artistic
  - visual
- biomedical sciences:
  - medicine and health
  - life, agriculture, veterinary

State financing – First-year students



Before – Funding distributed to institutions according to preset number of new students

After – Funding tied to student – best entrants take the state money where they go

Before – State provided only 50 per cent of the set funding per student

After – One student financing raised twice

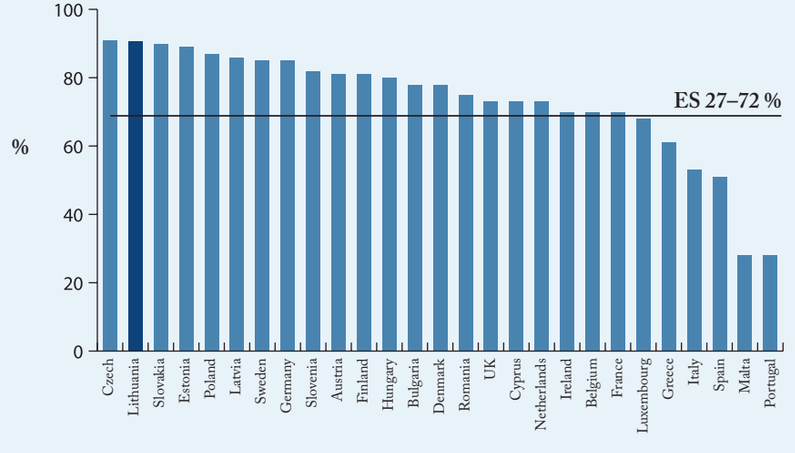
Before – State financing restricted to state universities and colleges only

After – State funding going to the institution chosen by best entrants – whether state or private

Before – State funding limited to full-time students

After – State funding available to full-time, part-time and extramural students

Population (25-64 year-olds) – with secondary or tertiary education, 2008



STATE SUPPORTED STUDENT LOANS

Before – Total amount of funding available – 5,7 million €

After – Total amount of funding available – 29 million € in 2009, 43 million € in 2010

Before – Loans restricted to students at state universities and colleges

After – Loans available to students at all institutions of higher education – state and private

Before – Living expenses and part-time studies abroad

After – Tuition costs, living expenses and part-time studies abroad

SOCIAL SCHOLARSHIPS

Before – Limited to students at state universities and colleges

After – Available to students at all institutions of higher education – state and private

Before – State financed students only

After – Available to all students – state- or self-financed

Number of HE institutions	2008	2010
Universities	23	22
Colleges	26	23
Total	49	45

HIGHER EDUCATION - MANAGEMENT

COUNCIL AS A GOVERNING BODY – NEW PUBLIC MANAGEMENT AND ACCOUNTABILITY

Before – Senates, composed of members of a university's academic community, were in charge of both academic matters and management

After – The management of all state universities by the end of 2011 will be reformed by empowering professional boards, composed of university and public representatives, to consider and approve strategic decisions and appoint rectors

Governing body	Functions
Council	Highest governing body responsible for strategic decisions. Formed of the members of academic community and outside members appointed by minister according to proposal of National HE Council
Rector	Highest administrative body responsible for the management of a HEI. Elected by HEI's Council
Senate	Highest body dealing with academic matters, approving study programs and securing maintenance of academic standards

NEW LEGAL STATUS – ESSENTIAL ENLARGEMENT OF AUTONOMY

Before – State institutions of higher education had the legal status of a budgetary entity which provided no incentives to be competitive – money earned went back to state budget by the end of each year

After – By the end of 2011 all state universities and colleges will become public entities – more freedom for decision making, right to own property and right to manage property entrusted by state

RESEARCH – MANAGEMENT

Before
17 State Research Institutes
18 University Research Institutes
10 State Research Institutions

After
5 Centers of Science and
6 State Research Institutes
(17 Institutes integrated into universities)

New Institute	Joined Former Institutes
Centre of Innovative Medicine	Immunology Institute of Vilnius University Institute of Experimental and Clinical Medicine of Vilnius University
Nature Research Centre	Ecology Institute of Vilnius University Institute of Botany Institute of Geology and Geography
Centre of Agrarian and Forest Sciences	Lithuanian Institute of Agriculture Lithuanian Institute of Forests Lithuanian Institute of Horticulture and Olericulture
Lithuanian Social Research Centre	Institute of Social Research Institute of Labour and Social Research
Centre of Physical and Technological Sciences	Institute of Chemistry Institute of Semiconductor Physics Institute of Physics

RESEARCH – FUNDING

Before
Funding based on year-to-year basis, only 20 percent based on performance results

After
Changing the system towards competitive funding – ratio of basic funding against competition funding: 70/30 in 2009, 60/40 in 2010, 50/50 in 2011

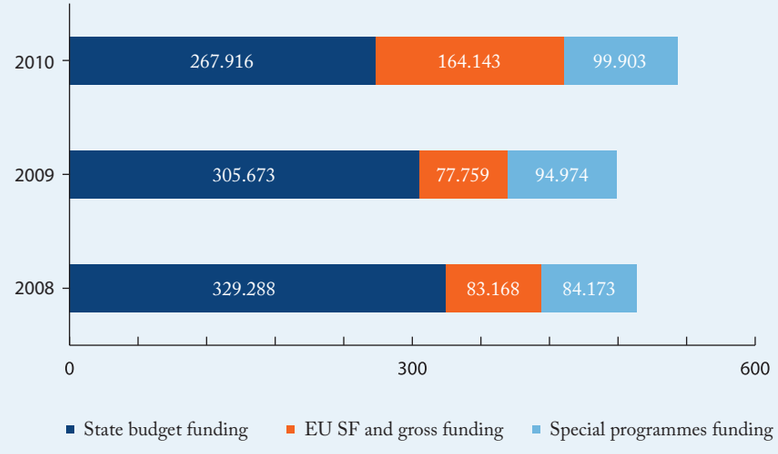
NATIONAL SCIENCE PROGRAMMES

- One of the measures of programme and competition-based R&D project funding.
- List of National Science Programmes approved by the Government:

Programme	Planned Funding for 2010 year (million €)	Status quo
Social Challenges for National Security	1.02 (overall 2010-2013 – 3.16)	Confirmed and started to implement
State and Nation: Heritage and Identity	0.88 (overall 2010-2014. – 5.47)	Confirmed and started to implement
Future Energy	1.3	Confirmed and started to implement
Chronic Uninfectious Diseases	1.3	Confirmed and started to implement
Ecosystems of Lithuania: Climate Change and Human Influence	1.3	Confirmed and started to implement
Healthy and Safe Food	-	Project prepared

EFFICENT USE OF EU FUNDING

ALLOCATIONS FOR SCIENCE AND STUDIES IN 2008-2010 (Million €)



10 percent of EU Structural Funds allocated for Lithuania – for higher education, research and innovation

Structural Funds Programmes 2007-2013

- **R&D Programme for Cooperation Between Public R&D and Business Sectors** - Integrated Research, HE and Business Centers (Valleys) – **218,06 million €**
- **Common National Integrated Programme** - 12 national integrated Programmes in R&D knowledge susceptive economical sectors – **97,43 million €**
- **Researchers Career Programme** - professional improvement of researchers at all stages of their career – **182,5 million €**
- **National Higher Education Programme** – skills and competences of students and professors, investment into study infrastructure – **221,28 million €**

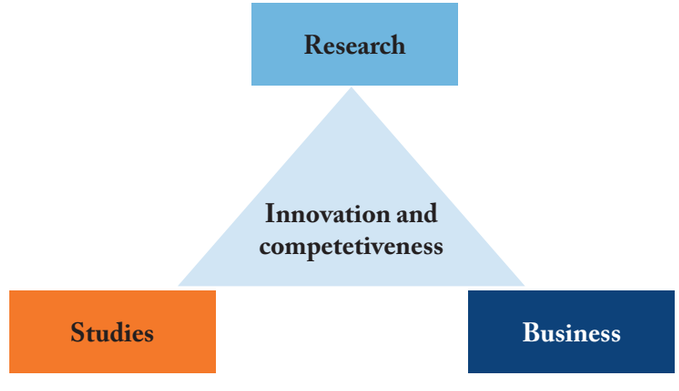
PRIORITY FIELDS

- Biotechnology and biomedicine;
- Materials science, physical and chemical technologies;
- Natural resources and agriculture;
- Engineering and IT.

R&D PROGRAMME FOR COOPERATION BETWEEN PUBLIC R&D AND BUSINESS SECTORS

Objective	▪ to create R&D infrastructure, develop research of international level relevant to business, essential to solve important problems of state and society; ▪ to create preconditions for commercialization of scientific results and for other applications.
Funding	218,06 million €

INTEGRATED CENTERS – "SILICON VALLEYS" WHERE RESEARCH, LEARNING AND HIGH TECH BUSINESS COMES TOGETHER



Integrated Research, HE and Business Centers (Valleys) – funded projects

Saulėtekis Valley

Laser and Light Technologies

Material Science and Nanoengineering

Electronics and Organic Electronics

Civil Engineering

Projects	Funding (million €)	Number of researchers
National Centre of Physical and Technological Sciences	58.01	700
Civil Engineering Centre of the Vilnius Gediminas Technical University	5.47	80
Vilnius University Laser Research Centre "Naglis"	3.31	20

Integrated Research, HE and Business Centers (Valleys) – funded projects

Santara Valley

Biotechnology

Molecular Medicine and Biopharmacy

Research of Ecosystems and Sustainable Environment

Design, Informatics and Technologies of Communications

Projects	Funding (million €)	Number of researchers
Joint Centre for Life Sciences	36.31	290
Joint Innovative Medicine Centre	14.84	60
Nature Research Centre	4.35	220
IT Open Access Centre	1.56	90

Integrated Research, HE and Business Centers (Valleys) – funded projects

Santaka Valley

Sustainable Chemistry and Biopharmacy

Mechatronics and Related Technologies

Future Energy and Environment Engineering

Information and Communication Technologies

Projects	Funding (million €)	Number of researchers
National open-access R&D Centre in Kaunas Technology University	33.96	310
National open-access Research Centre of Future Energy Technologies	6.52	114
Centre for the Latest Pharmaceutical and Health Technologies	15.35	50

Integrated Research, HE and Business Centers (Valleys) – funded projects

Maritime Valley

Marine environment

Marine technologies

Projects	Funding (million €)	Number of researchers
Nucleus and Study Infrastructure	25.83	110

Integrated Research, HE and Business Centers (Valleys) – funded projects

Nemunas Valley

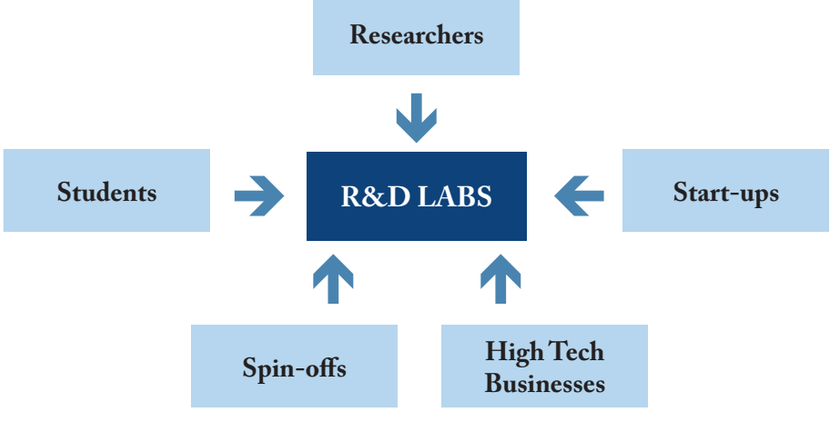
Agrobiotechnology, Bioenergy and Forestry

Safe and Healthy Food Technologies

Projects	Funding (million €)	Number of researchers
Agrobiotechnologies, forestry, biomass energy, water and biosytems engineering R&D centers	23.25	140
Animal health, nurture and animal material science and studies infrastructure	8.78	80
Food science and technology infrastructure	2.44	51

OPEN-ACCESS CENTERS

R&D labs created in Valleys will function as the open-access centres formed on the basis of R&D infrastructure and competence of science and study institution.



COMMON NATIONAL INTEGRATED PROGRAMME

Objective	To increase in complex manner (through direct and indirect measures) the proportion of R&D intensive sectors of economy.
Funding	97,43 million €

12 National Integrated Programmes (million Euros):

- Biotechnology and Biopharmacy – 10.12
- Joint Laser, New Materials, Electronics, Nanotechnology and Applied Physical Sciences and Technologies – 10.03
- Sustainable Chemistry – 4.93
- IT sector – 3.65
- Medicine sciences – 4.93
- Sustainable use of nature environment – 4.93
- Mechatronics – 2.67
- Development of Civil Engineering Sector and Transport – 2.67
- Lithuanian Creative and Cultural Industries – 2.67
- Humanities and Social Sciences – 0.95
- Maritime sector – 2.73
- Agriculture, Forestry and Food sector – 1.09

There are 34 projects developed on the basis of these programmes. Allocations distributed to them – **51,29 million €**

Funded activities:

- Development of **study programmes** ~ 14 million €
- **Training and mobility** of scientists and other researchers ~ 15 million €
- Improvement of **common science and studies infrastructure** ~ 22 million €

RESEARCHERS CAREER PROGRAMME

Objective	▪ to encourage permanent professional improvement of scientists and other researchers at all stages of their career
	▪ enhance abilities of human resources in the sphere of R&D in qualitative and quantitative aspects;
	▪ to encourage the mobility of scientists and other researchers.
Funding	182,5 million €

Implementation

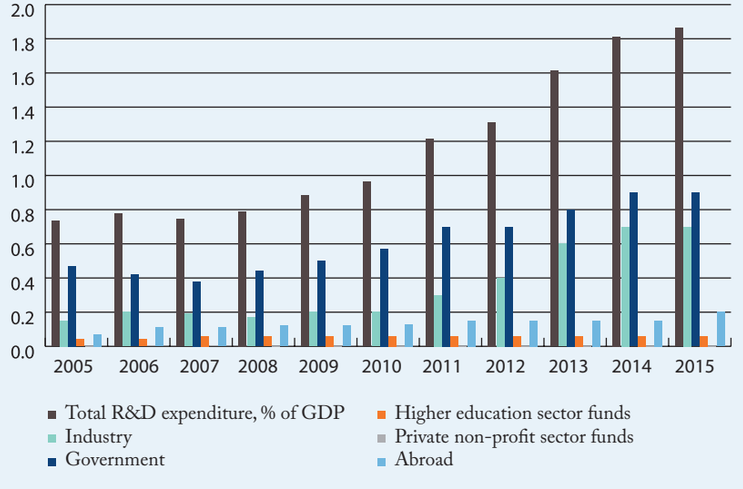
Instrument	Funds according to the groups of activities (million €)
General grants	55.07
Improvement of qualification of scientists and other researchers, encouragement of mobility and student research works	23.13
Improvement of qualification and competencies of scientists and other researchers (research databases and e-documents)	21.36
State aid for employment of researchers in companies	18.38
Strengthening of activities of R&D thematic networks and associations	7.68
Improvement and dissemination of knowledge about science and technologies for pupils and youth and stimulating of gender equality in science	5.8
R&D quality and preparation of experts	2.78
Analysis of study and research condition	2.49

NATIONAL TARGET EU2020 FOR R&D INTENSITY

By 2020 Lithuania targets 2% R&D intensity (0,8% in 2009):

- **In the period of the financial crisis, the budget allocations to the higher education and science sector were reduced less than in average to the public sector in total.**
- **Since 2009, government expenditure on R&D has been increased due to Structural Funds allocations.**
- **New fiscal incentives for R&D: improved financial accounting in business sector is expected;**
- **Due to reform: new incentives for research and higher education institutions to commercialize R&D results and attract investments from business sector.**
- **Reformed research and higher education system and renewed infrastructure: foreign investment should increase.**

R&D expenditure, % of GDP by 2015



CHALLENGES

- Successful implementation of the HE and research reform
- Successful implementation of EU structural funds programmes
- Strengthening of studies, science and business integration for growth of Lithuania's economy
- Globalization and internationalization
- Preparedness for new EU financial programming period for 2014-2020