

# THE HUNGARIAN S3 STRATEGY

## Lessons Learnt; Possible Synergies Between Funding Opportunities

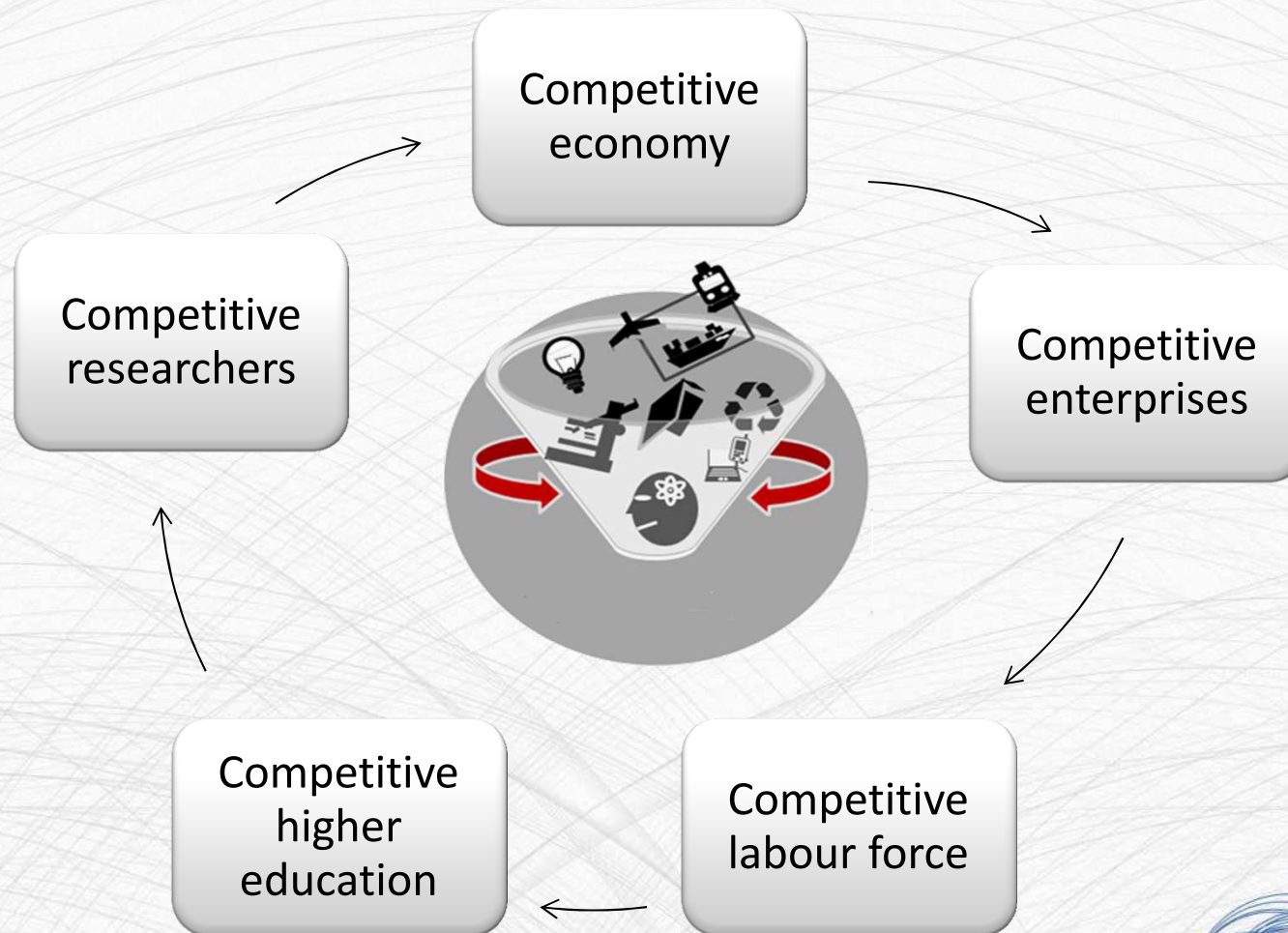
**S3 DESIGN LEARNING WORKSHOP**

19 February 2016; Chisinau, Moldova

**Béla KARDON PhD**



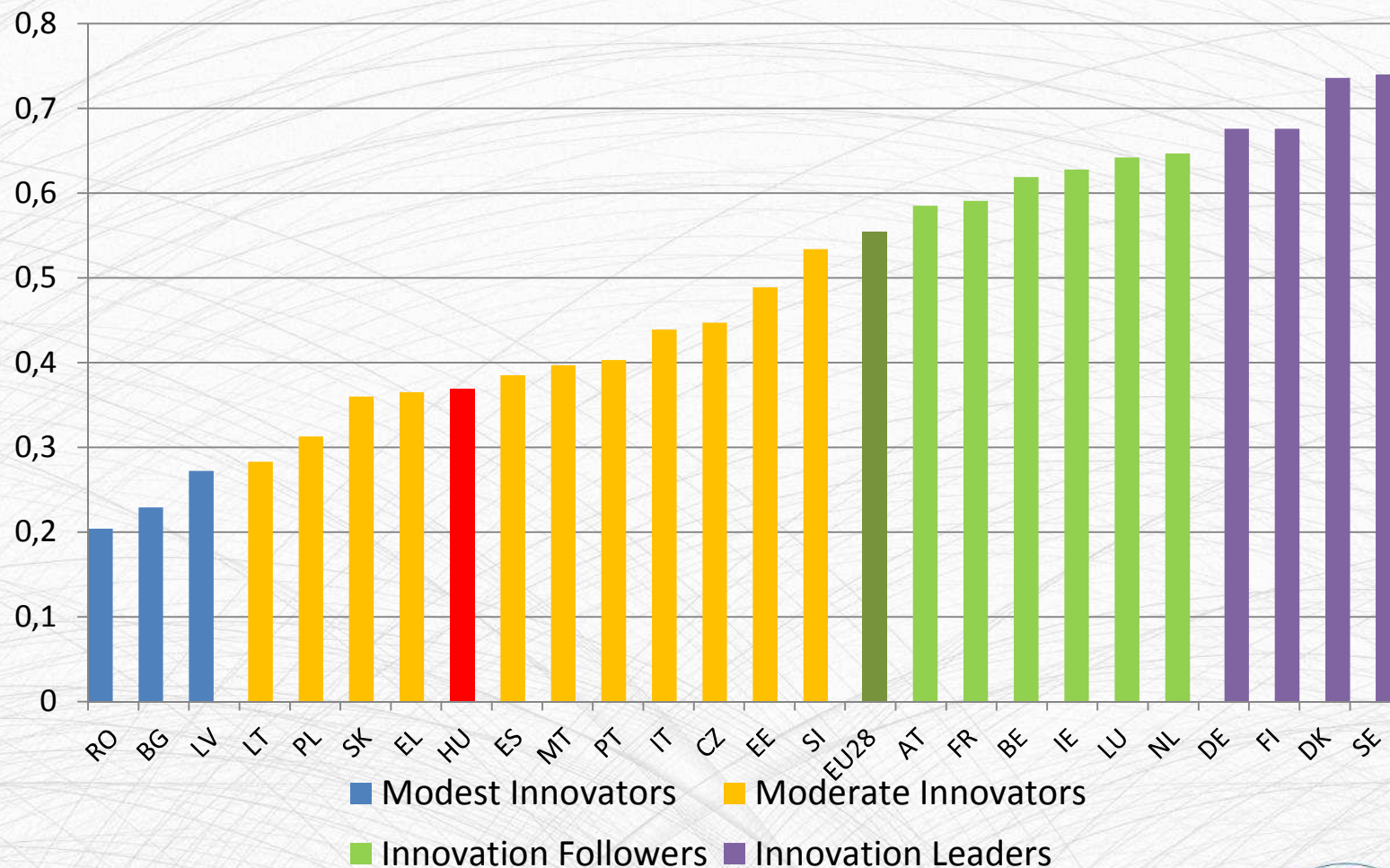
# R&D – Key to Competitiveness



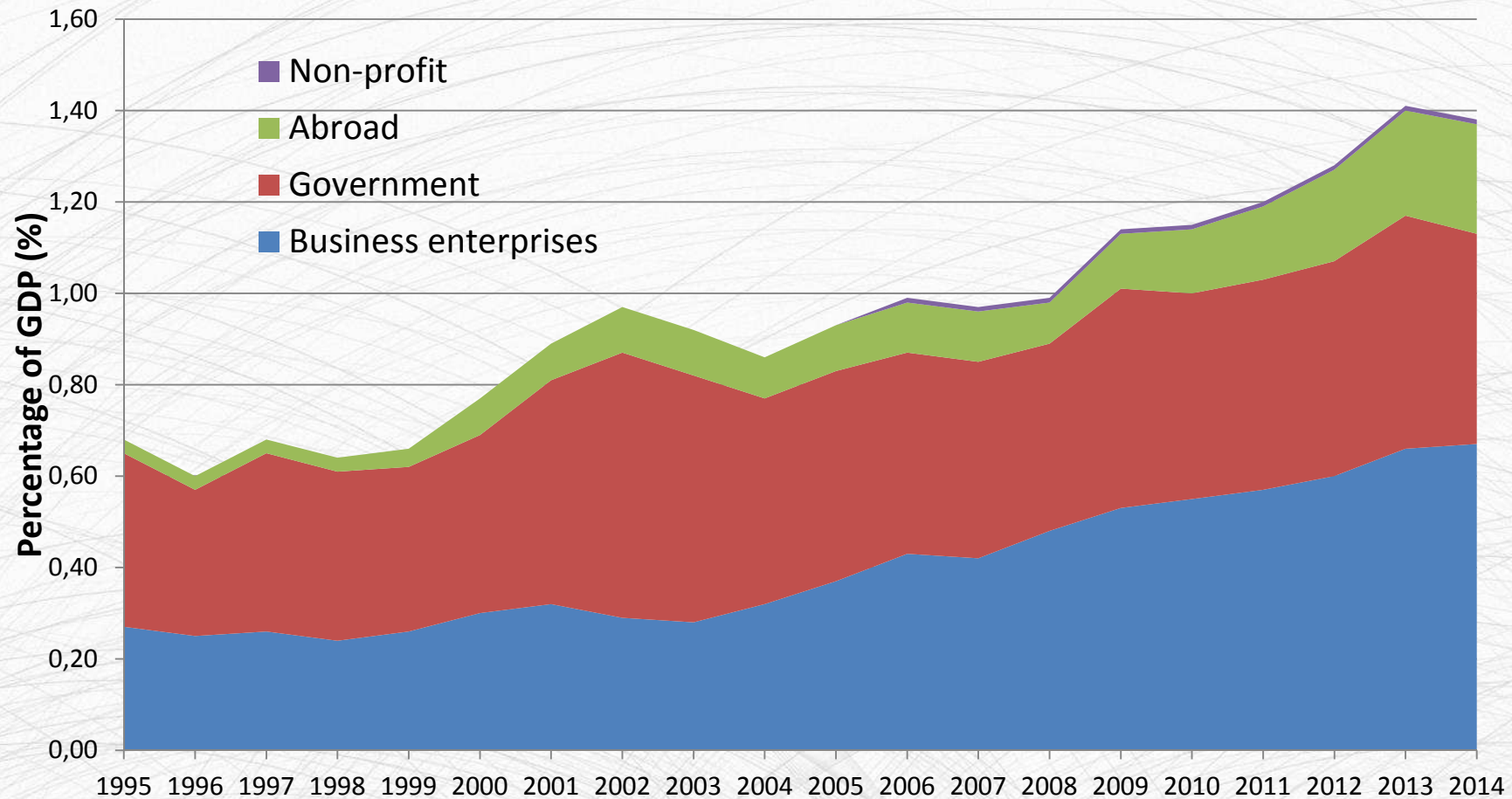
**The link between research and competitiveness  
is efficient knowledge transfer**



# Innovation Union Scoreboard, 2015

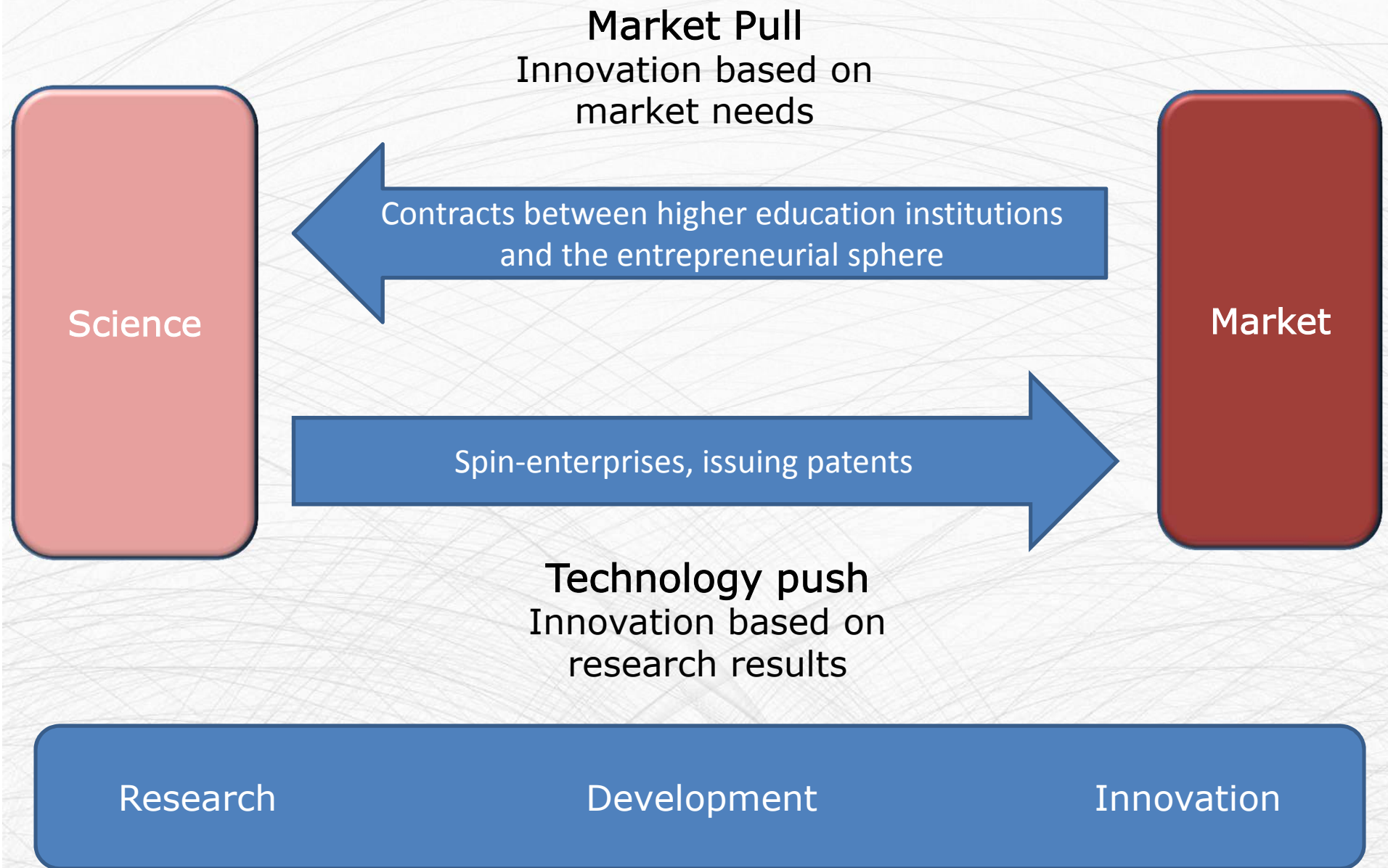


# Sources of RDI expenditure in Hungary (% of GDP)





## Obstacles to efficient technology transfer in Hungary (1)



## Obstacles to efficient technology transfer in Hungary (2)

### Inherent historical obstacles

Technology transfer within institutions is not centrally organized, not functioning on an institutional level

Successful researchers are not willing to share their business partners with other researchers

No real acknowledgement of the third mission of higher education institutions (a general characteristics of Humboldtian institutions)

### Attitude of the entrepreneurial sphere to the R&D activity of universities

As techtransfer activity on universities are fragmented (organised not on an institutional but on an individual level), the R&D potential of universities is not visible enough

There is no real need for sophisticated R&D activity of universities, requests of companies are below the dignity of researchers

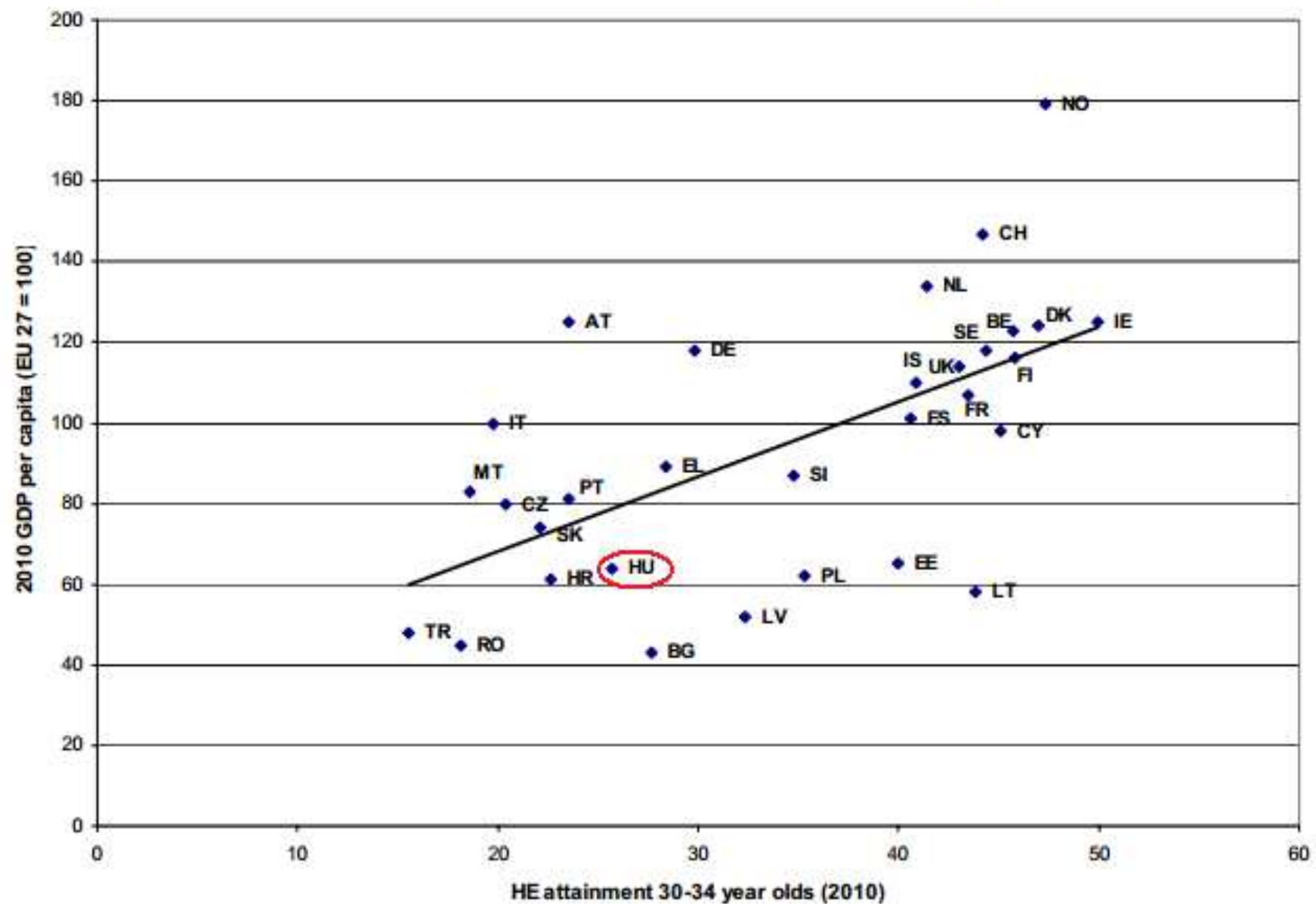
### Regulatory framework, market environment

Entrepreneurial schemes and good practices are imported from the United States without adjusting them to national characteristics

Entrepreneurial culture is underdeveloped, researchers do not have the necessary transversal, and entrepreneurial skills to make themselves visible.

Insufficient continuous funding of technology transfer activity

### Higher education attainment (30-34 year olds) and GDP per capita in 2010



Source: Eurostat (Data for EU-27 + Norway, Switzerland, Croatia and Turkey)



# **Main issue: bridging the resource gap in research Funding**

## **Interim evaluation of the Seventh Framework Programme**

**performance of most of the new Member States falls short of that of the old Member States.**

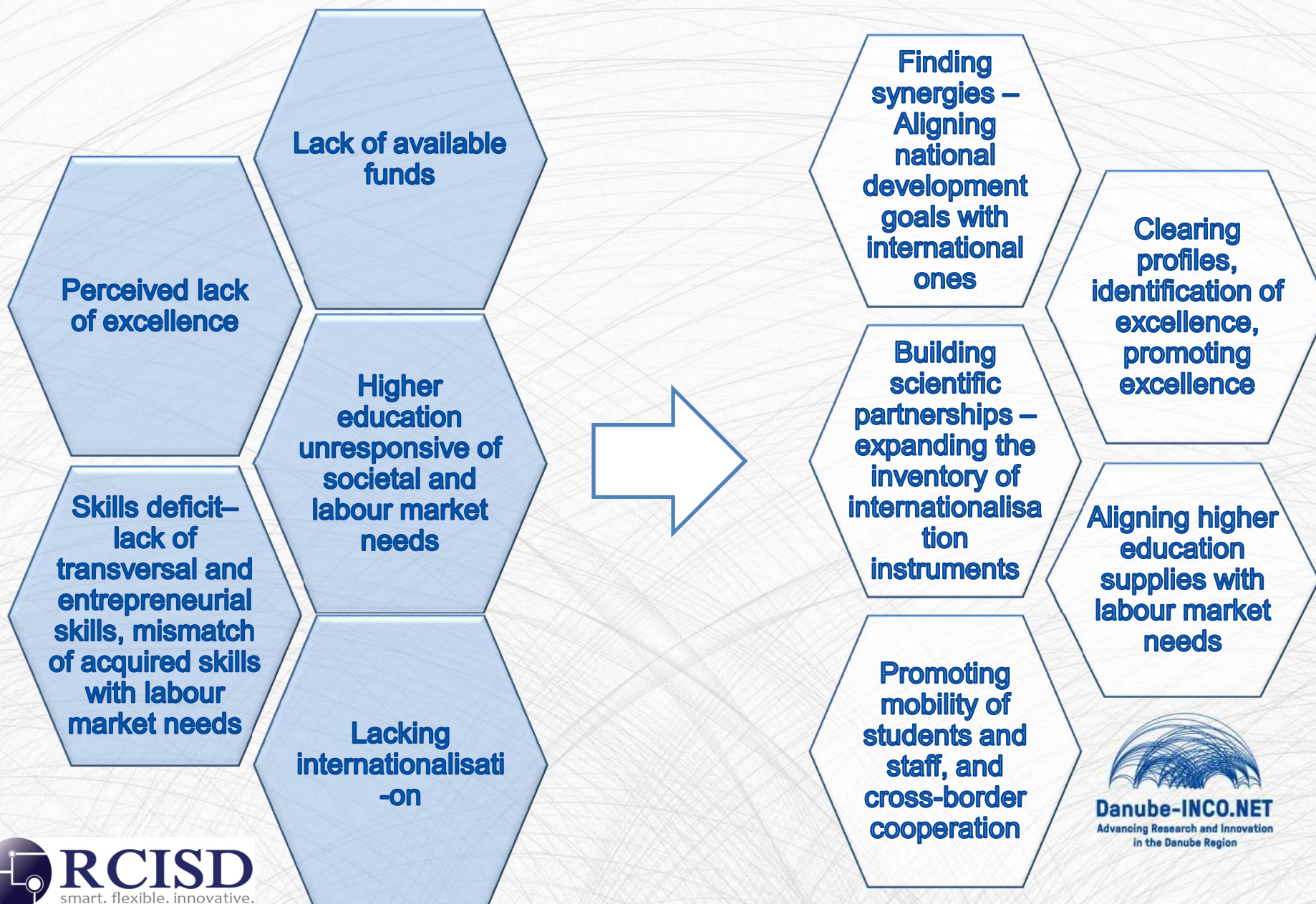
**The overall share of EU12 (12+1) participants in all projects is low  
Funding of successful projects per participant to EU12 countries is lower  
than for EU15 countries**

### **Solution:**

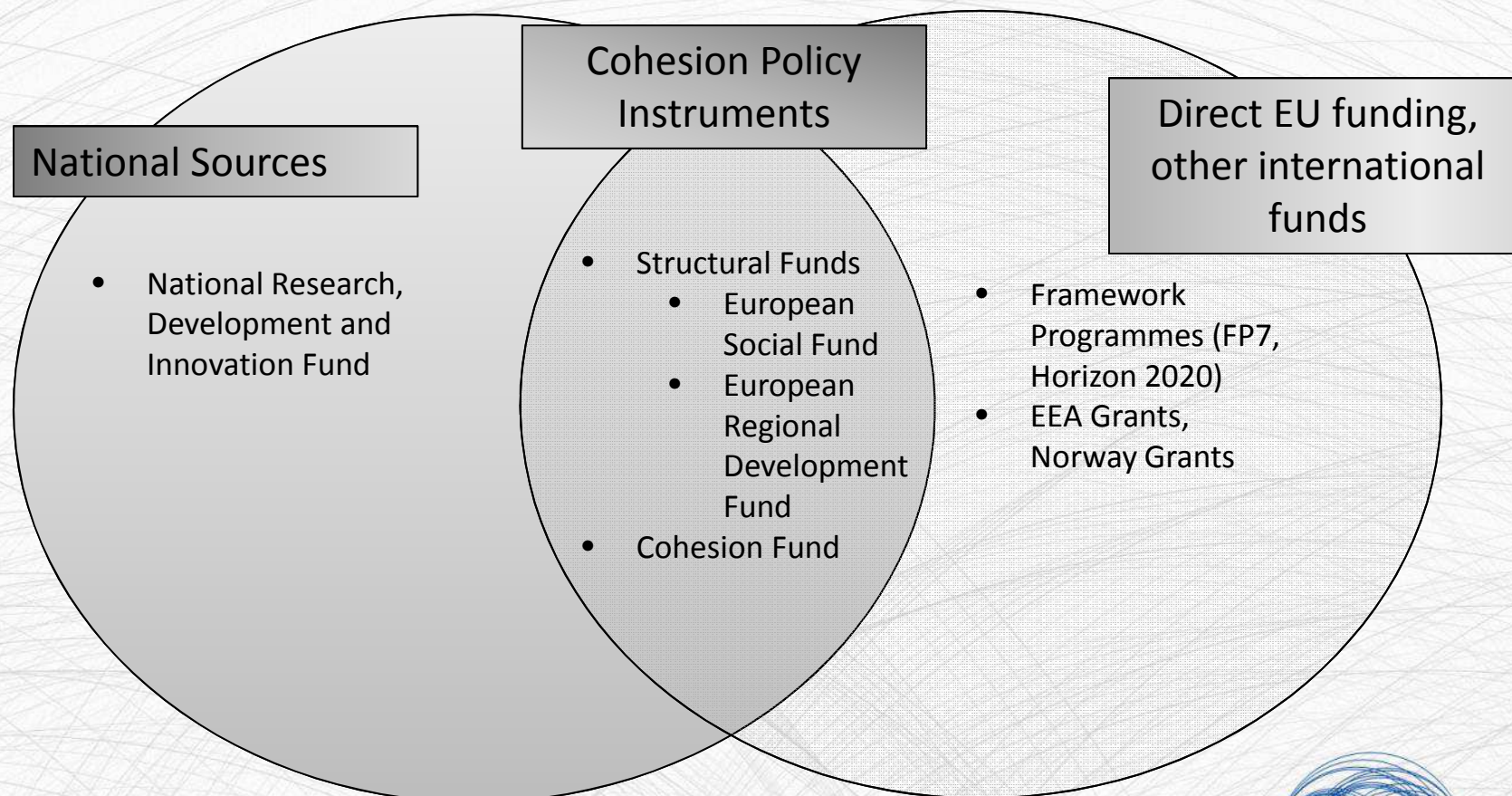
**Finding synergies between funding opportunities and increasing  
international integration of Hungarian higher education and higher  
education research**



# Polarization – the most prominent challenge the European Research Area is facing



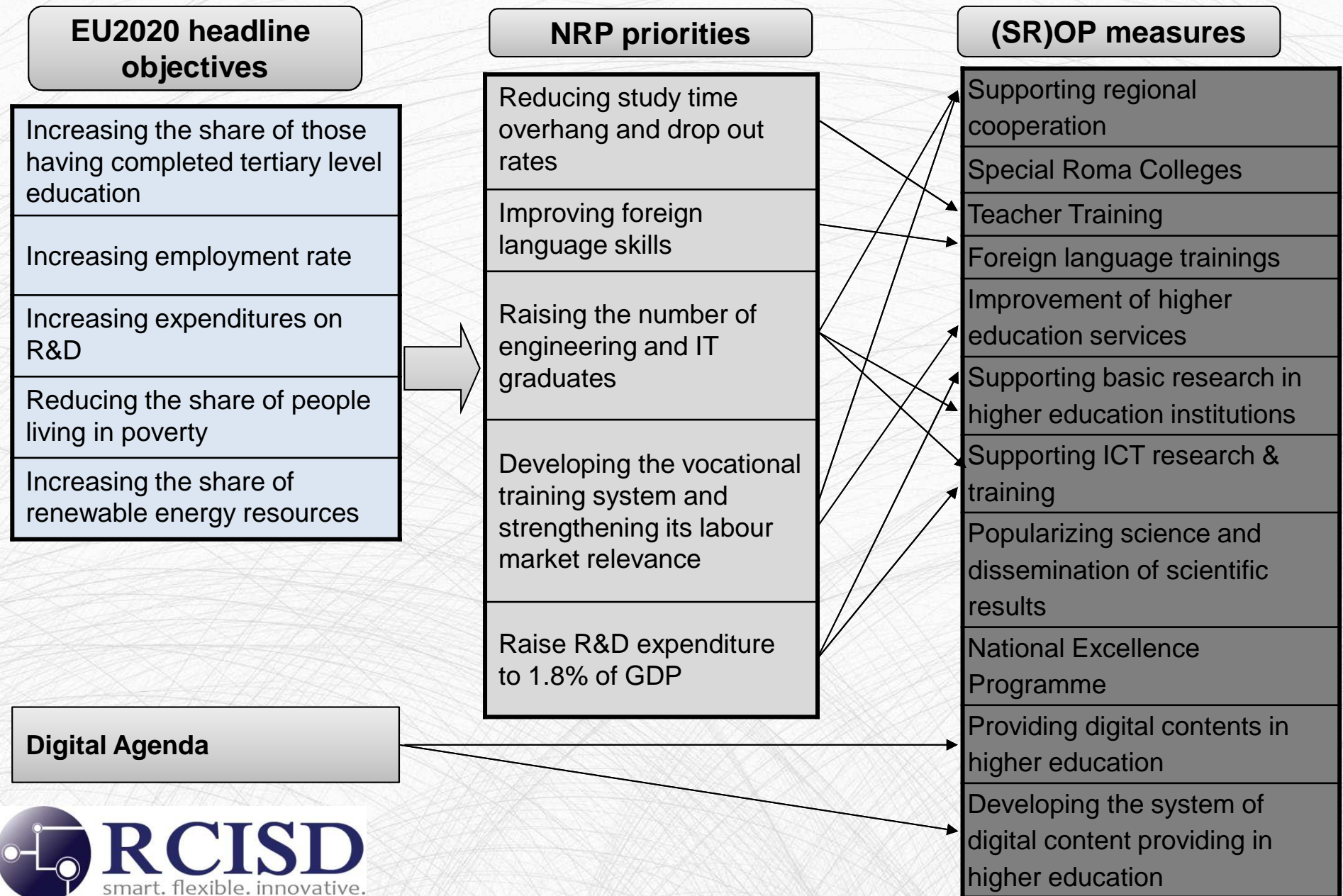
# Sources of R&D Funding



**Main goal: bridging the resource gap**



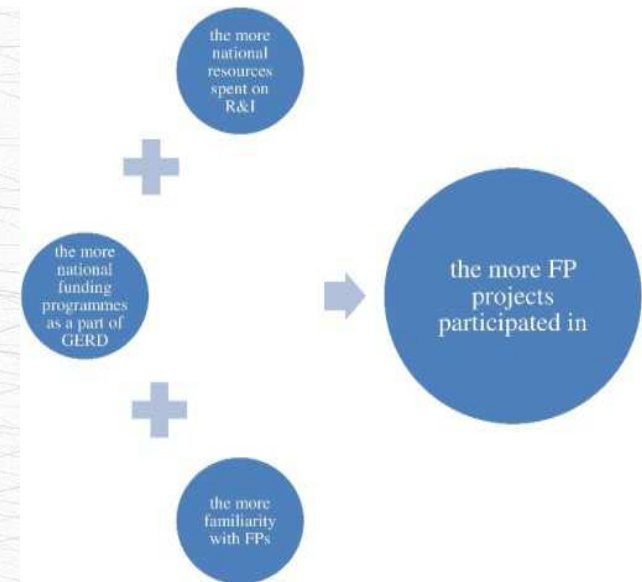
## Strategic goals of higher education development - relevant measures (2007-2013)



# How to Come Closer to the Framework Programme

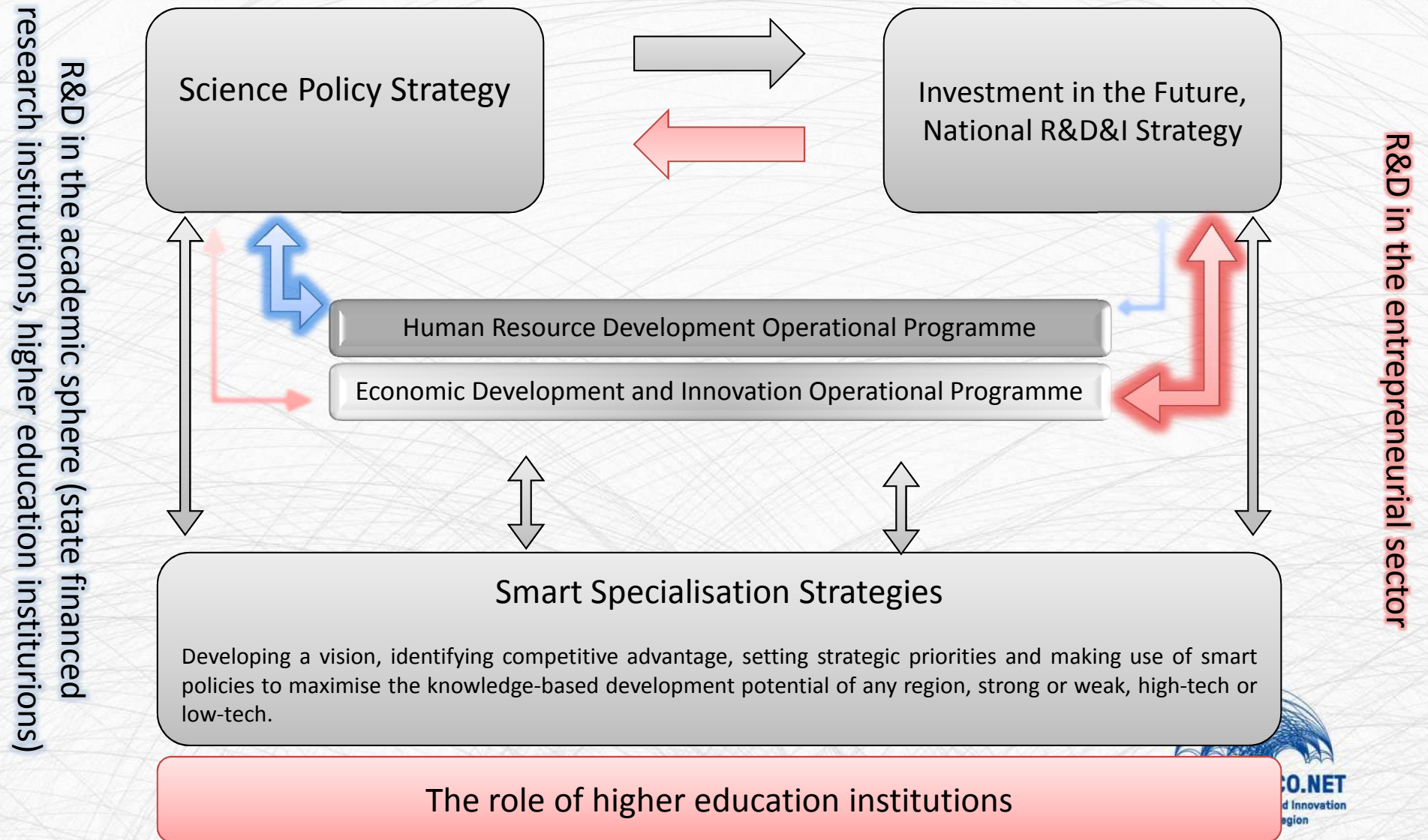
- + The more national Resources spending on R&I
- + The more higher GERD / GDP
- + The more familiarity with the European Programmes

=> The more FP projects participated in



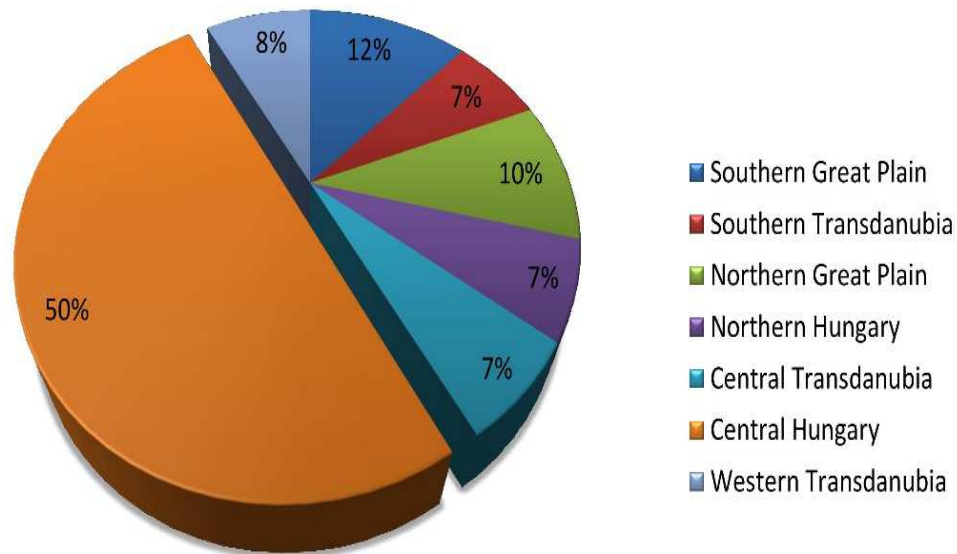


# Relevant Strategies and the Operational Programmes in Research & Development and Innovation

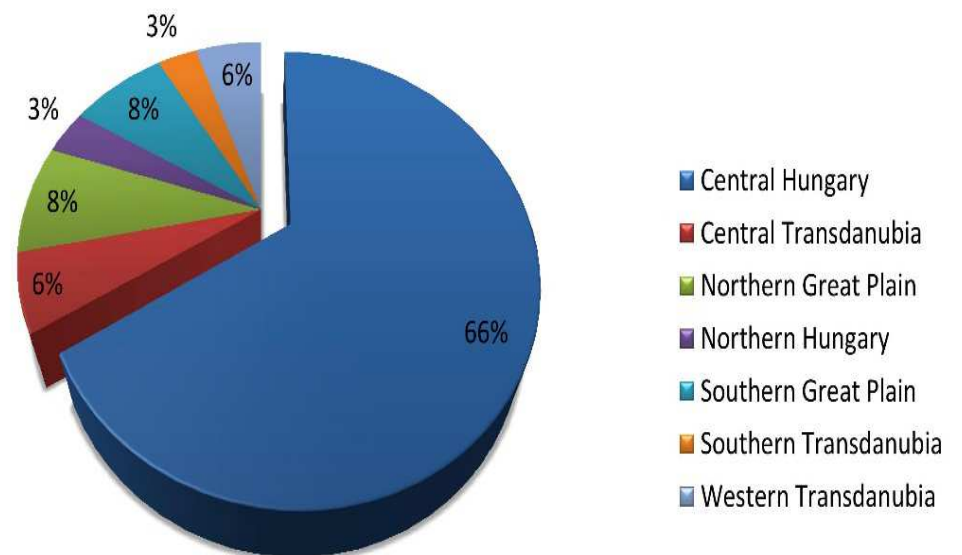


# Regional Disparities

R&I units



R&I expenditure





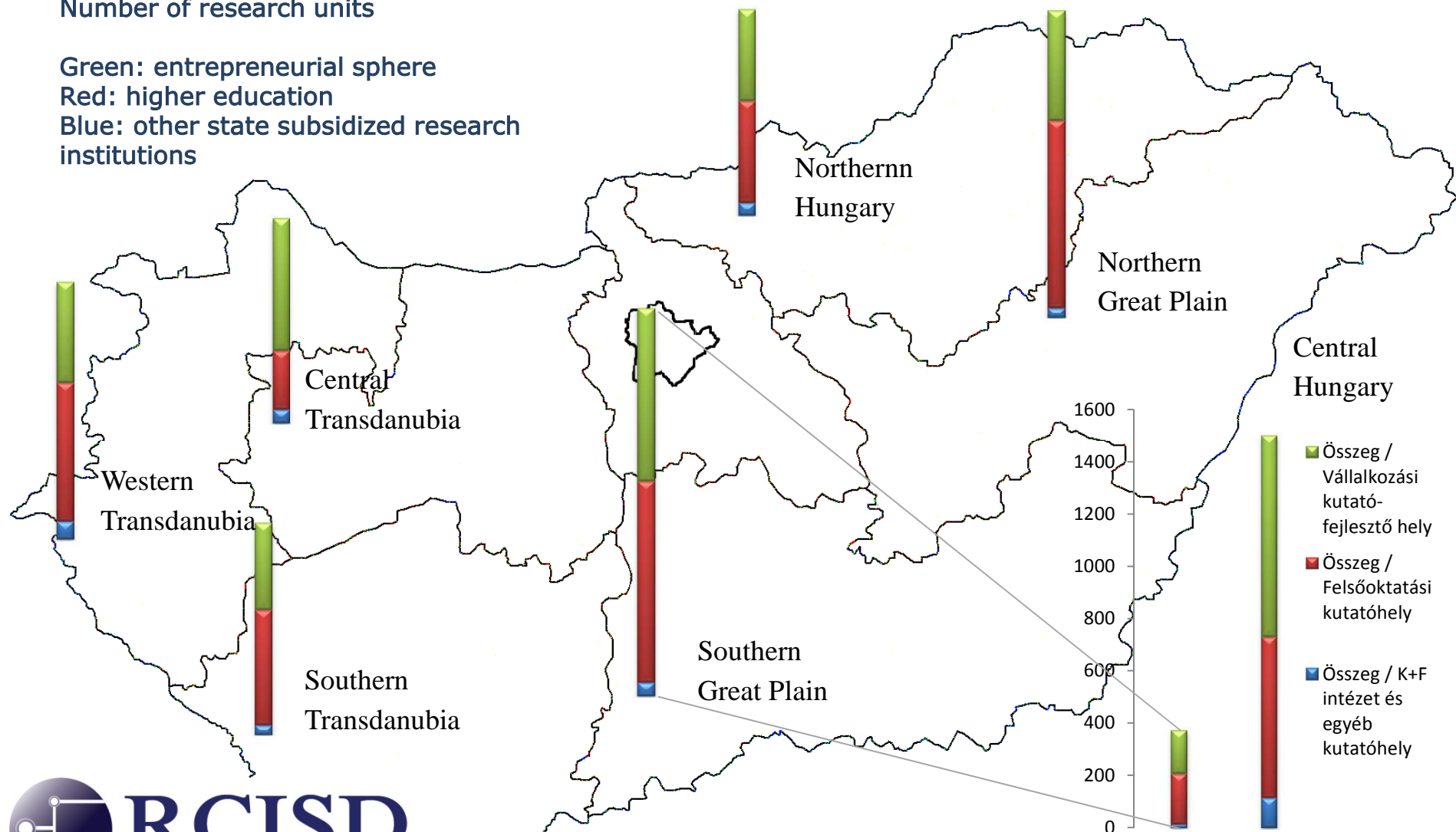
# Why is Smart Specialisation Important from the Perspective of Higher Education (1)

Number of research units

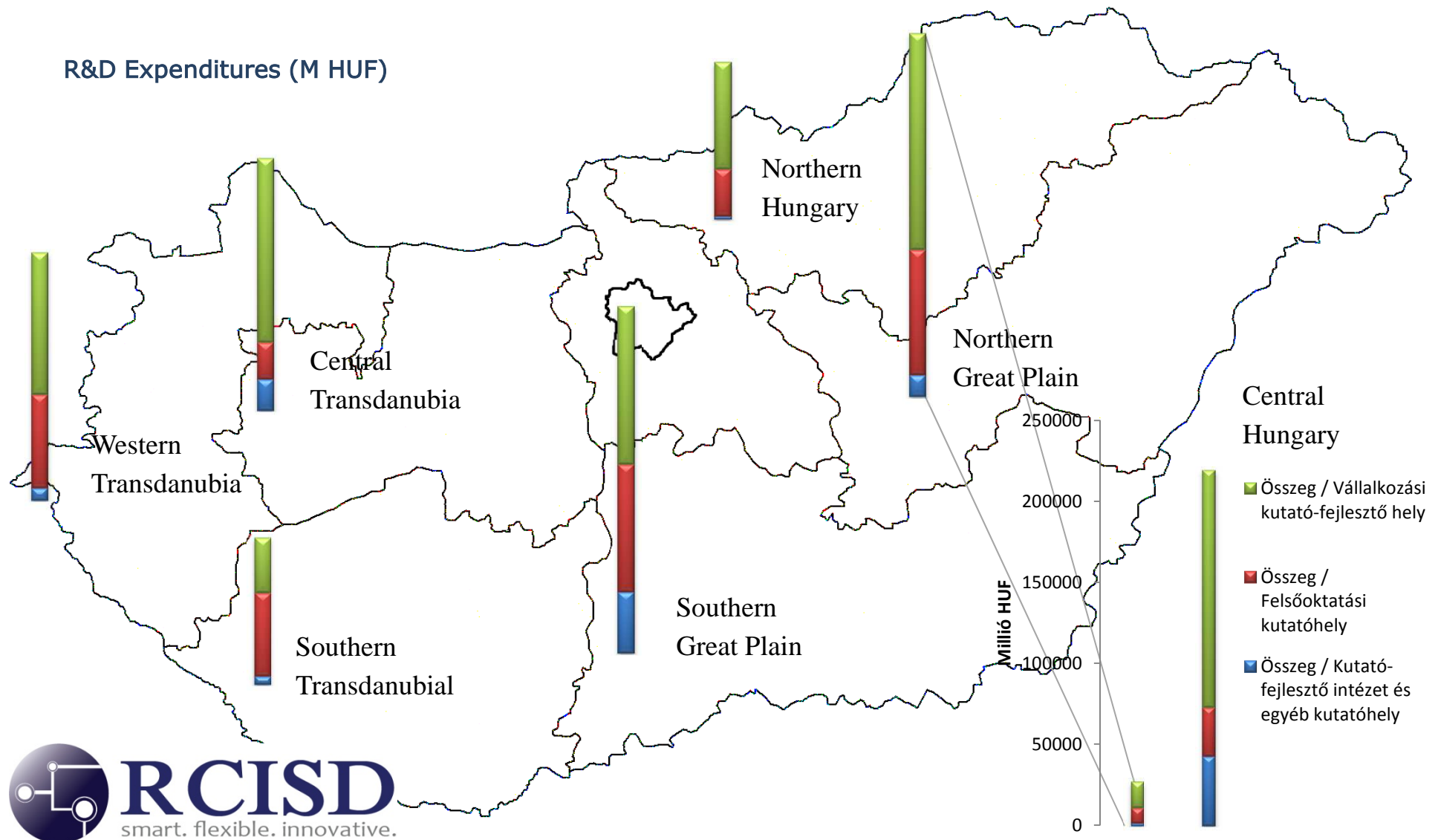
Green: entrepreneurial sphere

Red: higher education

Blue: other state subsidized research institutions



# Why is Smart Specialisation Important from the Perspective of Higher Education (2)





# STRATEGIC PRINCIPLE: MOMENTUM OF INNOVATION

**Aim**

Effective participation with high-value added activities in the international division of labour.

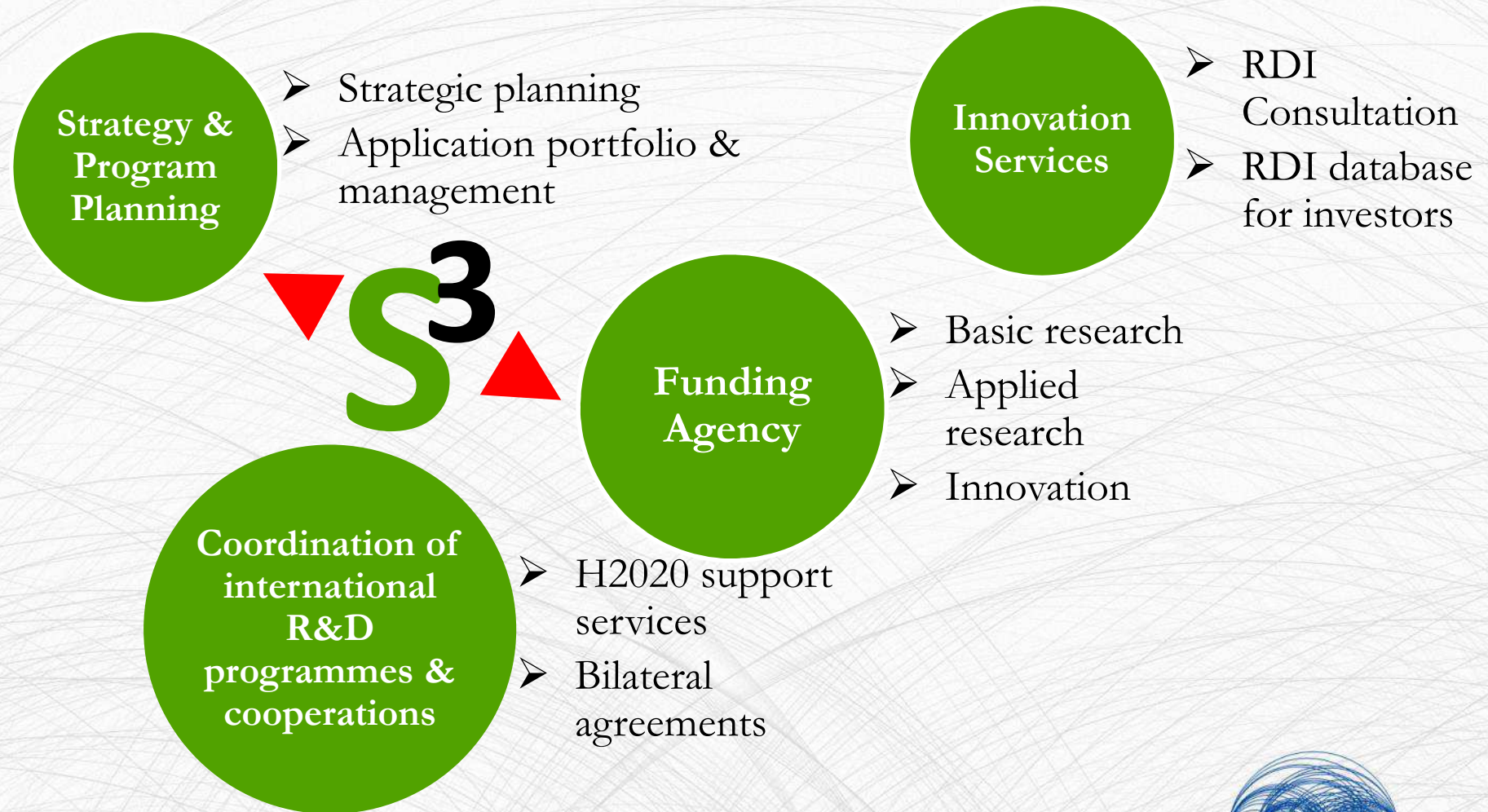
Prerequisite:

high-value added RDI activities and programmes

Prerequisite:

- a) world-class, excellent scientific background
- b) talented researchers and other professionals
- c) competitive infrastructures
- d) calculable and transparent financing scheme

# The National Research, Development and Innovation Office responsible for S3





# Characteristics of S3 planning in Hungary

## Current status of S3 document

Planning process ended in 2014.

The S3 was officially submitted to the EC at the beginning of 2015. The EC approved the document along with the Operational Programmes that contained RDI priority axes.

## Stakeholders involved in the planning phase

Academic sphere:  
universities, research institutions, knowledge centres

Governmental sphere

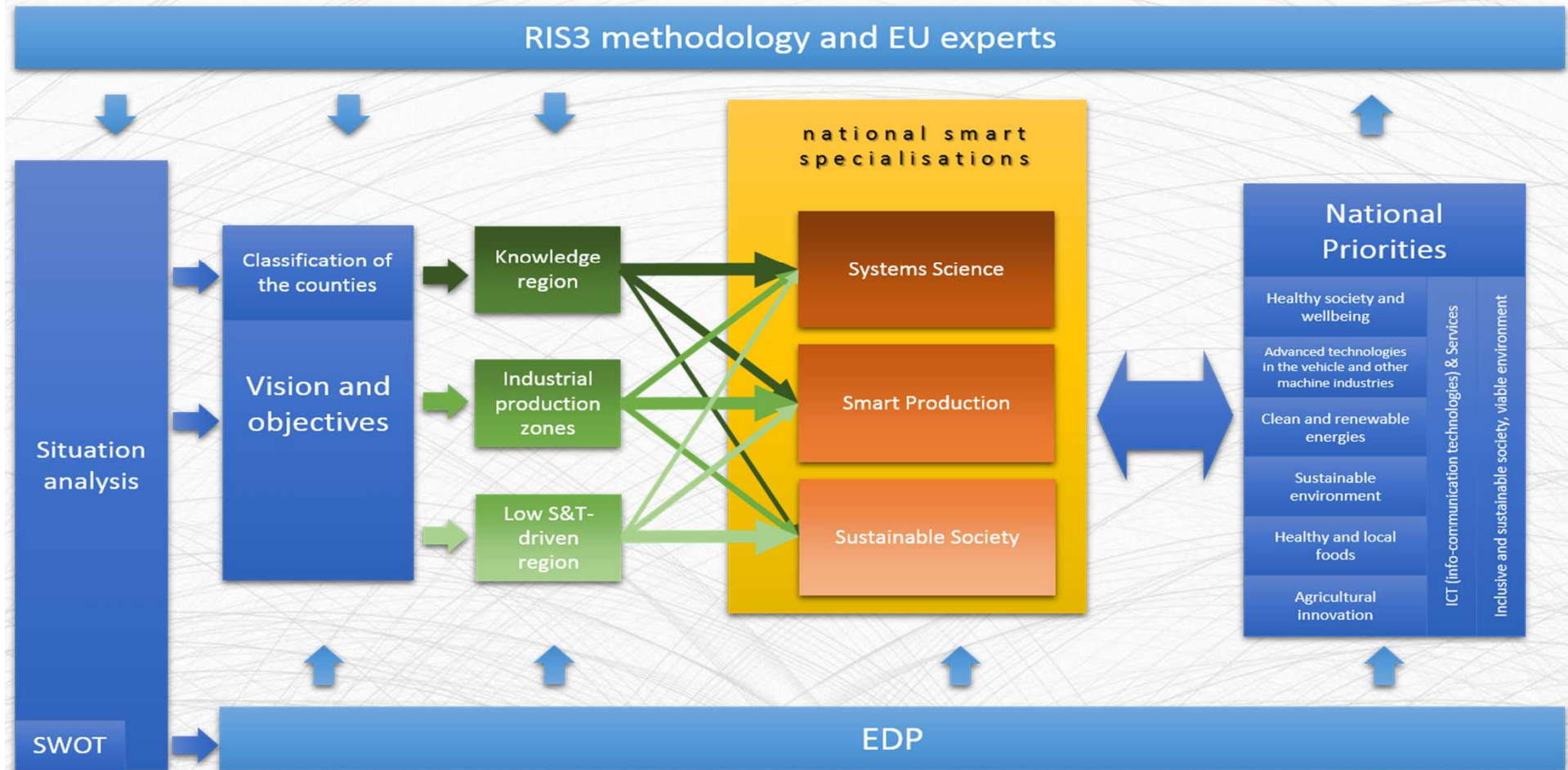
Business sphere

Civil organisations

## Organisational structure to S3

The NRDI office is responsible for the implementation and the evaluation of smart specialisation strategies

# The alignment of national smart specialisations with the S3 strategy





# Assignment of policy instruments to the national S3 directions (1)

## SYSTEM SCIENCE

- **Enhancing research and innovation (R&I) infrastructure** and capacities to develop R&I excellence, and promoting centres of competence, in particular those of European interest;
- **Creating relationships** and synergies between businesses, research and development centres and the higher education sector
- **Open innovation**
- increasing the international integration of basic research in the Horizon 2020 projects and the **European research networks** by reaching a high level of participation in the programs and strengthening the relationships between the national and European research centres
- Improving the system of conditions of discovery research along the smart specialization; supports the strengthening of the interfaces between education-research-industry (**knowledge triangle**) and the (public) services and higher education institutions, the basic research related to the domestic key technologies and main economic sectors as well as the expansion of young researchers, further the harmonization of the university-academic and corporate capacities.
- Supporting **discovery research**



# Assignment of policy instruments to the national S3 directions (2)

## SMART PRODUCTION

- Supporting technological and **applied research**, pilot programmes, early product validation actions, and the advanced production capacities and test production of basic technologies
- Promoting the **R&I investments of businesses**
- Creating relationships and synergies between businesses, research and development centres and the higher education sector
- **Product** and service **development**
- Networking and clusters
- Open innovation
- Building the knowledge triangle, namely supporting the interfaces of education-research-industry and supporting the collaboration of the companies and the academic and higher education institutions
- Increasing the R&D activity and adaptation, and innovation performance
- Purchase of instruments and devices related to smart specialisation and supporting the interventions ensuring a new research generation in higher education



# Assignment of policy instruments to the national S3 directions (3)

## SUSTAINABLE SOCIETY

- Product and **service development**
- Technology transfer
- **Social innovation and eco-innovation**
- Spreading of **general-purpose technologies**
- Building the knowledge triangle, namely supporting the interfaces of education-research-industry and supporting the collaboration of the companies and the academic and higher education institutions
- Purchase of instruments and devices related to smart specialisation and supporting the interventions ensuring a new research generation in higher education
- Increasing the R&D activity and **adaptation, and innovation performance**
- Discovery research in **social sciences**

# The alignment of national smart specialisations with the S3 strategy

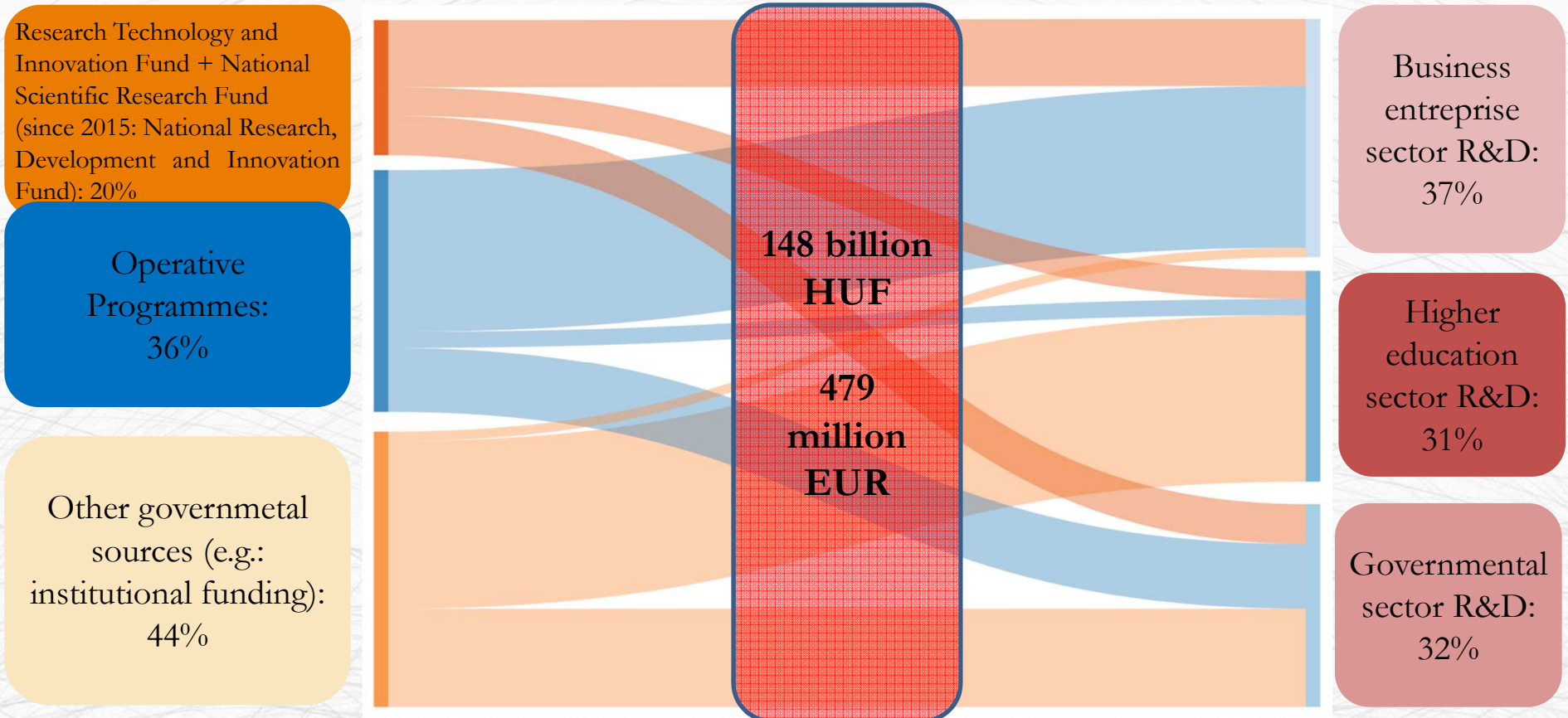


- machine industry RDI, advanced production technology systems,
- advanced materials and technologies (technical materials science,
- materials technology, nanotechnology, mechatronics and electronics))

- natural resource management, advanced environmental technologies



# Governmental RDI Financing



Total: 148 billion HUF (479 million EUR)

Source: HCSO, 2015

# RDI Financing

## SOURCE

Governmental  
(35%)

Non-profit  
(1%)

Business  
enterprise  
(35%)

Foreign  
(17%)

## TARGET

Governmental  
Sector R&D (14%)

Higher Education  
Sector R&D (14%)

Business  
Enterprise  
Sector R&D  
(72%)

441 billion  
HUF  
1.43  
billion  
EUR

Total: 441 billion HUF (1.43 billion EUR), 1.38% of GDP



# Thank you for your attention!

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