

The Romanian research system

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OUTLINE

- **The Romanian research system**

- Structure

- Evaluations

1. Independent **reports**:

- "Mid Term evaluation report of the National Strategy and National RD&I Plan

- 2007-2013" by *Technopolis Group* - March 2012)

- and

- "World Bank operational review" - May 2012

2. Institutional **evaluation** of all National RD Institutes

3. **Indicator** based

- Innovation Union Scoreboard 2013

- Other

Around **1300 organizations** performing RD&I activities

➤ **265 public R&D organizations** including:

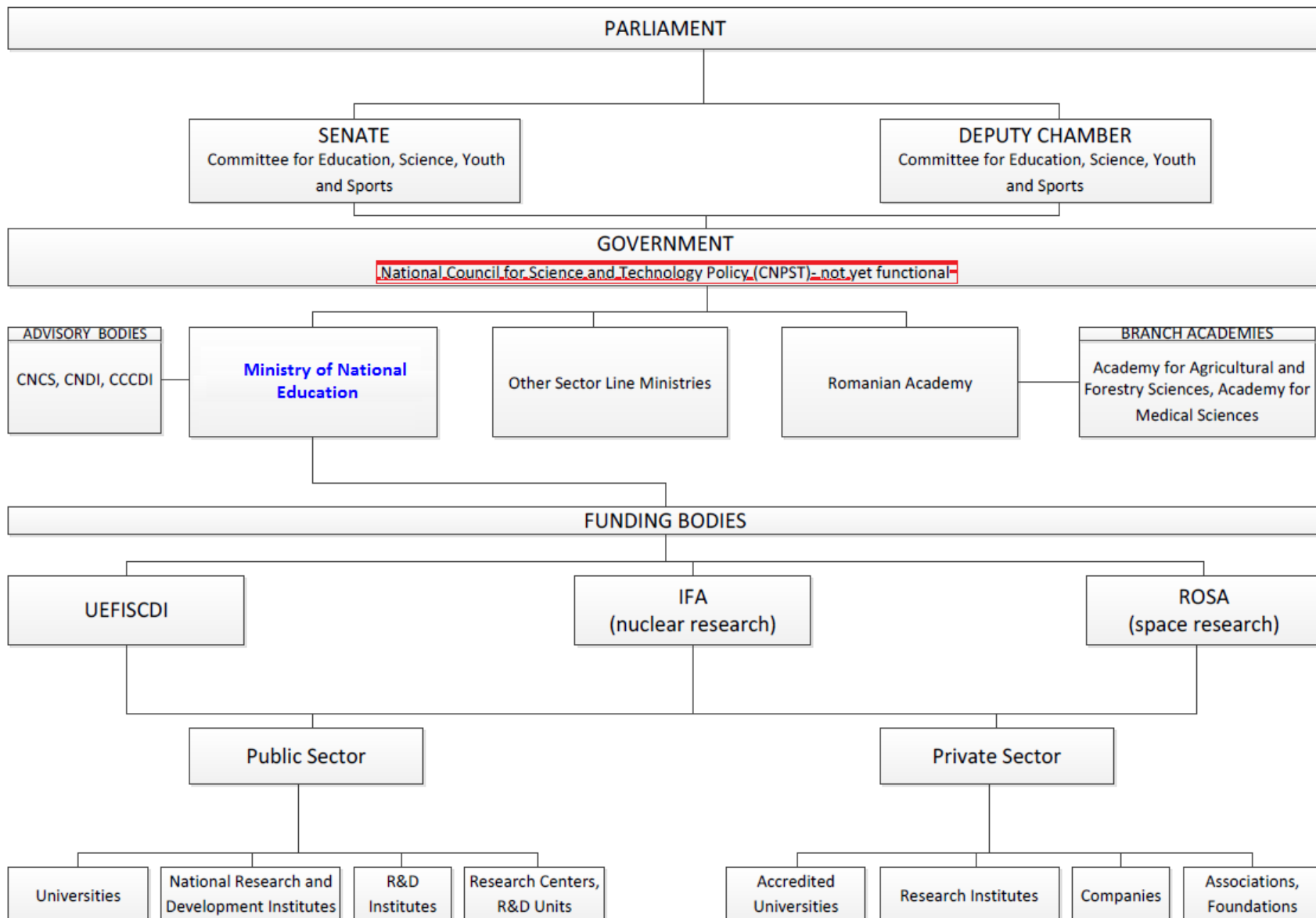
- 169 organizations of national importance
 - **56 public universities** (certified)
 - **48 national R&D institutes**
 - **65 research institutes and centers of the Romanian Academy**
- Other 96 public research institutes and centres.

➤ About **1000 private companies** performing R&D (MEN statistics)

➤ The network for technology transfer and innovation (ReNITT):

- **50 specific organizations** (tech. transfer centers, tech. info centers, technology and business incubators).
- **4 S&T parks.**

Structure (decision)



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2. Institutional **evaluation of all National RD Institutes**
3. **Indicators**
 - Innovation Union Scoreboard
 - Other

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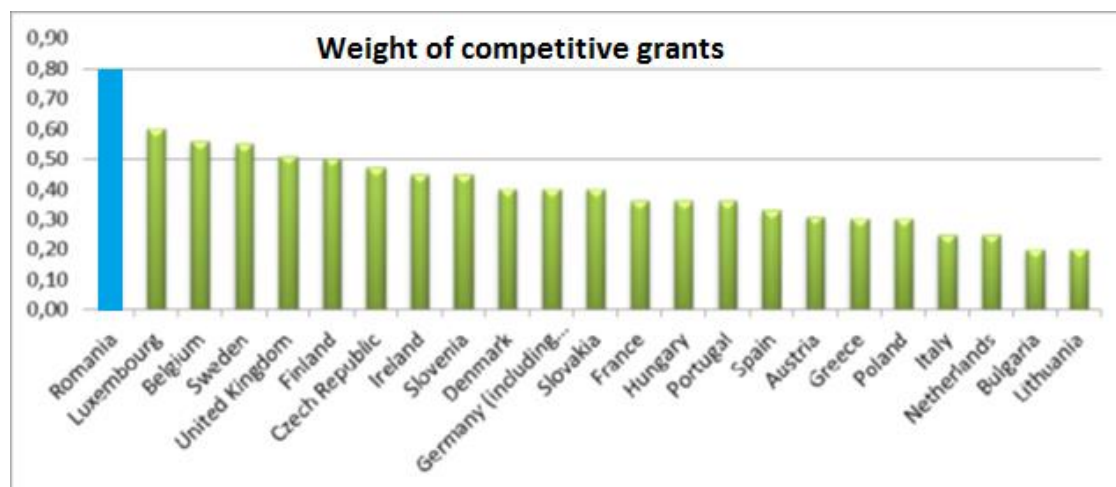
and

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2006-2008: **strong growth** of GERD (from public sources) correlated to:

- Increase of the Romanian **scientific articles** and **journals** - both in **number** and **visibility**.
- Significant strengthen of **small scale infrastructures**: ~150 research laboratories in universities and research institutes.

- 80% of the funds allocated via **grant competition** with **international evaluators**!

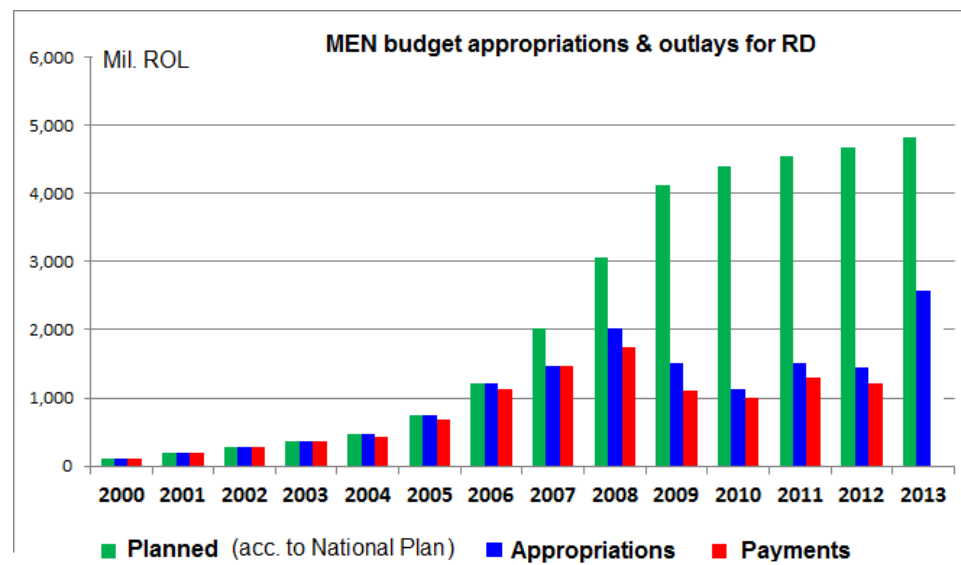


Crisis (2009): Not sustainable growth!

The fall in RD budget was **larger** than the fall in GDP, leading to a decrease in the ratio of RD budget to GDP.

Both reports concluded on **too many and too ambitious goals with respect to the resources!**

(cumulated values 2007-2013: **15,000 MROL planned vs. 4,500 MROL payments**).



Source: MEN: The dynamics of public RD budget: a maximum in 2008, a minimum in 2010, and recovering the level of 2008 in 2013.

Re-stating priorities **in crisis**:

- *Human resources* programme: ~1400 docs and post-docs;
- Fight against *fragmentation*:
 - Orientation to large scale investments in pan-European facilities:
 1. Extreme Light Infrastructure;
 2. Centre for Advanced Studies “Danube Delta-Black Sea”;
 3. Other *seven* public large scale facilities (20M€UR each).
- Focus on *innovation* for *social & economic added value*: *Innovation* programme with dedicated tools for economic operators (e.g. *innovation vouchers*).

2. Institutional evaluation of National RD Institutes (international standards, international teams)

The institution was **free** to define its mission **anywhere within the R&D domain** (i.e. **basic** or **applied**), but in its **focus area** is expected to be **internationally competitive**

according to **five formal criteria** marked **from 1 to 5** each:

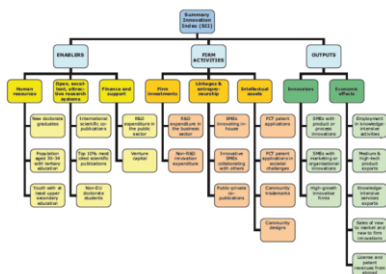
1. Research results and activity,
2. Human resources,
3. Infrastructure,
4. Research environment,
5. Development plan.

The classification levels correspond to **final grades**

			Number
•	Final Grade ≥ 4.5	level A+	10
•	$4.5 >$ Final Grade ≥ 3.5	level A	18
•	$3.5 >$ Final Grade ≥ 2.5	level A–	9
•	$2.5 >$ Final Grade ≥ 1.5	level B	1
•	Final Grade < 1.5	level C	0

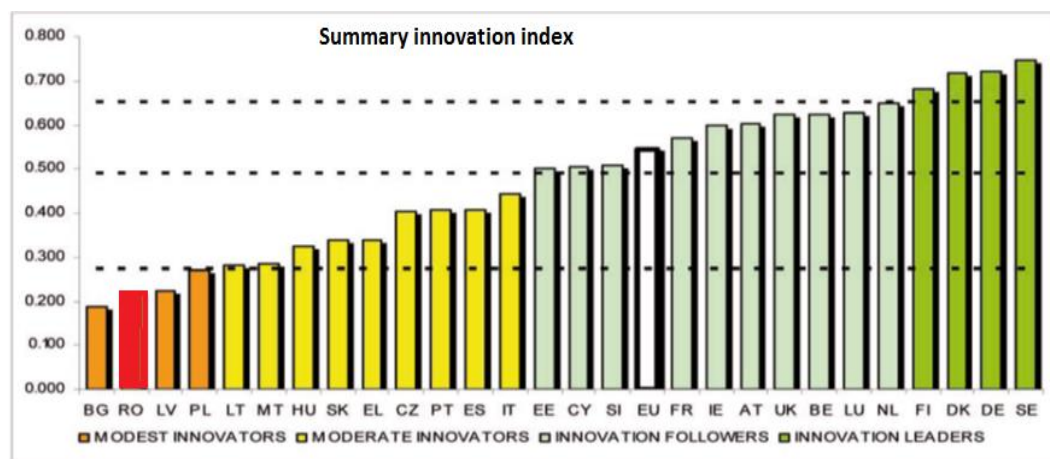
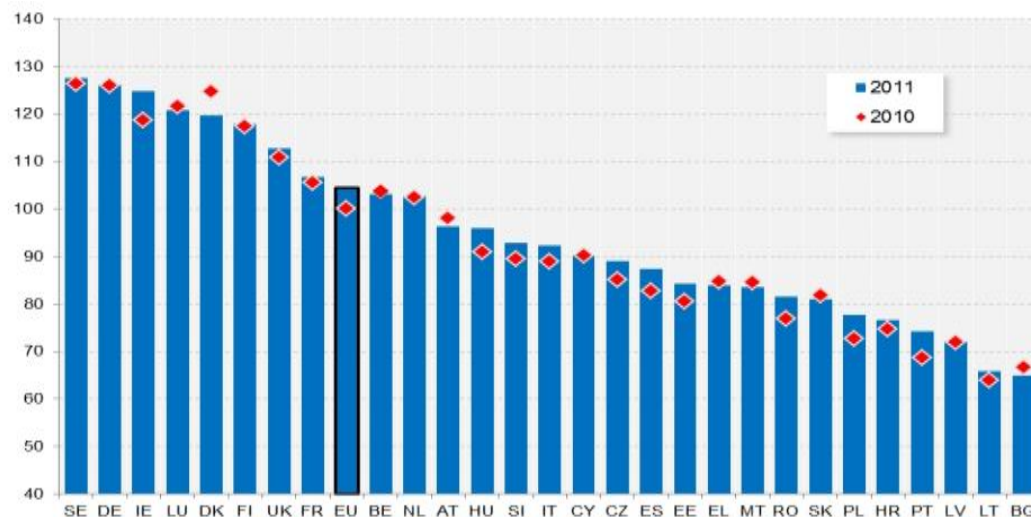
3. Indicators: Innovation Union Scoreboard (IUS) based on the model of National Innovation System (NIS).

IUS set of indicators was assimilated, including the **new** output indicator of innovation - "Innovation Indicator of Output" - which indicates how innovative ideas reach the market (Romania on position 20 in the EU 28).



Summary innovation index

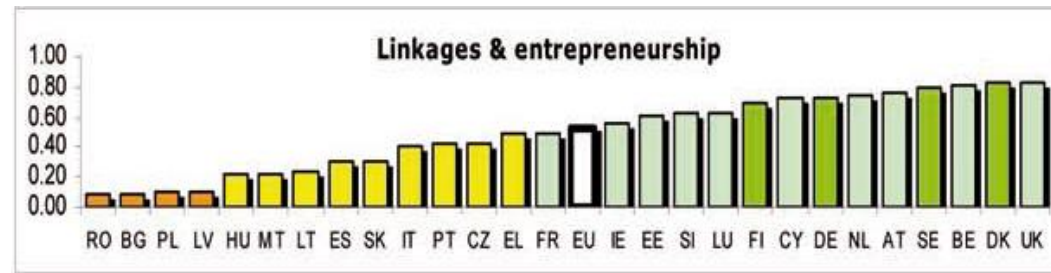
Ro half of the value of EU.



3. Indicators: Innovation Union Scoreboard (IUS) based on the model of National Innovation System (NIS): **critical gaps**

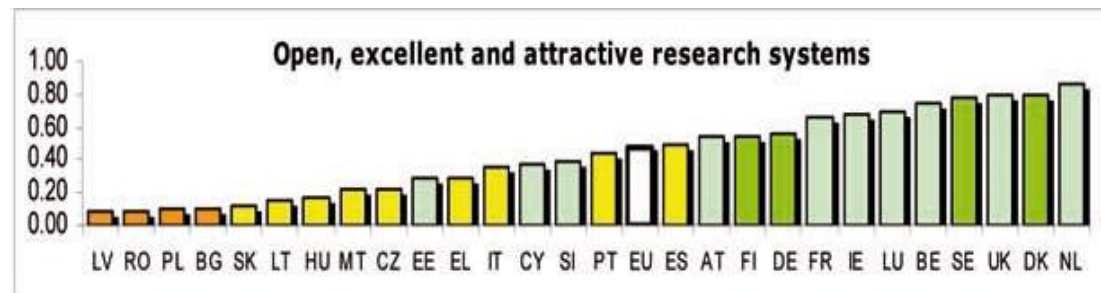
NIS focuses on **interactions** between the operators involved in the chain knowledge-resources-market with impact on economic performance.

The **linkages** are **still poorly** for Romania!



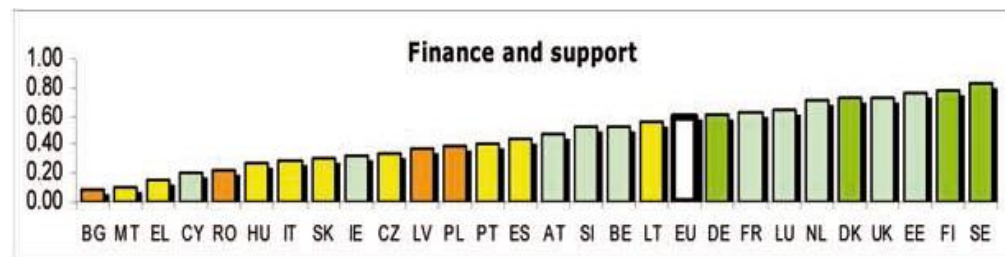
Investments in RD facilities provided **useful support** for the updating of the research infrastructures in universities and national institutes...

... but **the quality** of the research system **still needs significant improvements!**



The **private sector** is **little contributing** to RD activities – currently Romania has one of the smallest RD intensity in EU (GERD ~0.5% GDP, **BERD ~0.17% of GDP**).

Solutions: Enhancement of the demand-side policies – implementation of additional fiscal incentives for RD: 120% to **150%**.



3. Indicators: other (European Reform Barometer, 34 ranked countries)

	Excellence in research composite indicator	Inventor density (per 1000 inhabitants)	Share of people aged 25-35 with tertiary education	Lifelong learning aged 25-64 who received education or training	Education performance (PISA scores in maths, reading, sciences)	Quality of education
Romania	34	33	29	31	32	32

General conclusion: **There is enough room for improvements!**

Optimistic remark: there is a certain fit between EEA grants and RD&I Strategy 2020

Thematic areas to be addressed by EEA grants	Priorities of smart specialization in the RD&I Strategy 2014-2020 (preliminary results)
Climate change and renewable energy	Energy and environment
Health and food safety	Bio-economy
Environmental protection and management	Eco-technologies

Thank

you !

Elaboration of the new **RD&I Strategy & Plan 2014-2020**

Project deliverables:

1. National Strategy for research, technological development and innovation 2014-2020.
2. National Plan for Research, Technological Development and Innovation 2014-2020
3. Strengthening research, technological development and innovation 2014-2020.

Conditionality "ex -ante" associated to **cohesion policy** (the objective of strengthening RD&I): *the existence of a national strategy that contains elements of smart specialization.*

Romania commissioned the study "Analysis and Evidence Base of the RD&I Market in Romania", financed by JASPERS, which resulted in **specialization opportunities** (smart) on RD&I bases in the following sectors:

1. TIC (target: the single European market, the Digital Agenda);
2. Agriculture and Agro-Food (target: food independence);
3. Engineering Technology (branch targets: clean transport and electricity, special materials, nano- and bio horizontal technology, computer science and photonics, IT services);
4. Energy and Environment (target: energy independence through renewable energy production hydro, wind, solar, biofuels, smart grids).

*The ARUP report became **input document** for the elaboration of the National RD&I Strategy 2014-2020*

Synergy with Cohesion Policy (European Structural and Investment Funds)

Thematic objective 1 - "Strengthening research, technological development and innovation" includes three investment priorities :

1. Strengthening the research and innovation capacity and infrastructure to increase excellence in RD&I,
2. Promoting private investment in research and innovation and the development of links and synergies between enterprises, universities and research institutes,
3. Unlocking potential for excellence through synergies between Structural Funds and the actions within European Horizon 2020.

Actions to be funded under the thematic objective 1 through the three investment priorities will support the vision and objectives of the National Strategy for RDI 2014-2020, especially for the smart-specialisation component.

The structural funds will support the increase of research and innovation capacity in the priority areas selected for **smart-specialisation** and in **health**, which is a national priority.

The smart- specialisation areas are a result of a complex process of "evidence-based" prospecting that took place within the exercise for elaborating the National Strategy for RDI in line with the recommendation of the Guide for R&I Strategies for Smart Specialisation.

Synergy National RD&I Plan – Sectoral Operational Programme “Increase Economic Competitiveness”

The operations belonging to the Priority Axis 2 were designed to **complement** the measures of the National RD&I Plan, e.g. **RD&I in enterprises**.

Funds channelled to the **private sector** by Axis 2 is 209 M€UR.

- Almost half of the funds (94 M€UR) **support research and innovation activities** carried out by the RD departments in enterprises;
- A third of the funds (70 M€UR) support investments in the development of the **research infrastructure in enterprises**;
- Approx. 15 M€UR support the enterprises lacking RD departments or the required expertise to **buy research services**;
- Approx. 20 M€UR were invested in over 100 **innovative start-ups** and **spin-offs**;
- **Young innovative enterprises** (up to 6 years-experience) received up to 1 M€UR each, without request of co-financing from private funds.

Facts:

The Priority Axis 2 budget **is contracted at the ratio of 112%** (800 M€UR)!

Every Euro invested in public enterprises drew 1 Euro private funds for RD&I!

Romania's **commitments** (vs. *Europe 2020*):

- Romania to meet **the current EU 27 average** on **Summary Innovation Index**.
- Romania to invest in research
~**2 % of GDP** = 1% public + 1% business.



National RD&I Strategy & Plan 2007-2013 – still to do