

THE RESEARCH SYSTEM IN ROMANIA – REFORMING AND FUNDING IT THROUGH PROGRAMS

Rus Mircea-Iosif

Babeş-Bolyai University

Faculty of Economic Sciences and Business Administration

Radu Ioana

Babeş-Bolyai University

Faculty of Economic Sciences and Business Administration

Scientific research represents today the most important lever for improving the living standard, health, culture and, in general, the wealth of a society. Therefore, this paper attempts to present the current state of the research system in Romania, as well as several proposals for reforming this system, which would, consequently, lead to a better use of research results, as well as the presentation of ways of funding for research through research programs, both national and European. We should not omit the fact that adequate funding for the research system also has a social impact, by creating new jobs, especially if the research results are implemented in industry.

Key-words: R & D and innovation, reform, funding, programs

JEL code: G28, G29, O30, O31

1. Introduction

The research activity aims to produce knowledge, being primarily expressed in publications. Scientific research distinguishes between basic research, applied research and development and innovation research. Therefore, if knowledge refers to rules and principles, we may speak of knowledge as result of basic research, expressed in publications. If knowledge refers to procedures or to applying the knowledge resulted from basic research to specific contexts, we may speak of applied science research, whose result is to be implemented in production.

2. Current situation

Currently, Romania primarily has three systems of R & D and innovation:

- the academic system (the Romanian Academy and the branch academies);
- the public institutes system (subordinated to / coordinated by the ministries);
- the university system.

Also, the current national RDI system also has the following research-development-innovation structures:

- state-owned companies, from the former branch institutes;
- private companies;
- private foundations and associations. (Văcărel. I. *et al.*, 2006)

The research, development and innovation (RDI) system existing in Romania is not able to ensure the promotion of industrial development because of its weaknesses, among which the most important ones are:

- extremely low RDI expenses, compared with industrialized countries,
- the total or almost total absence of R & D in the business sector, that is, in fact, the main factor of innovation,
- excessive priority given by some of these institutes to basic research, in the detriment of applied research, the fragmentation of scientific research, affecting the structure of non-specific means of financing of universities and academic sectors;
- the attitude and mentality of researchers in these institutes, which are more concerned with career prospects than with national industry needs;
- the mismanagement of research funds (scientific events, exhibitions etc.);

- the superficial capitalization of RDI results;
- the precarious equipment of the RDI activity;
- the lack of a regular analysis of the real correlation between the Romanian society needs and the priority programs as a research direction for the National Research, Development and Innovation Plan (NRDIP), as to ensure an increasing share of priority projects to be awarded by public tender and particularly those of community interest (ex. drinking water, wastewater, waste management, air and soil pollution, energy, health).

On the other hand, in Romania there is still a technical and material base for RDI, created after the anticommunist revolution, but also an industry of innovation. However, the innovative process was much hampered by the gradual disappearance of human and institutional actors, as well as by reducing RDI investment and expenditure. (Radu M. *et al.*, 2009)

3. The reform of the national research-development-innovation system

In order to change the current state of affairs, it is necessary to catalyze the structuring of relations and mechanisms of the scientific community, of the civil society and of international cooperation, for promoting innovation and stimulating excellence, based on a real and efficient reform of the RDI system.

3.1. General principles of the national research-development-innovation system reform

They are:

- I. The current RDI system has been developing gradually after 1948, in the context of a planned economy. This system is rigid, anachronistic and incompatible with market economy and economic globalization.
- II. The main mission of RDI activities is to address the important issues of transition and socioeconomic development. In general, RDI projects should be conducted in accordance with market needs, as dictated by the economic actors.
- III. RDI reform should be carried out in order to facilitate the development of this activity, especially by stimulating competition mechanisms.
- IV. Priority must be given to national invention, so that RDI results may turn into production capacities and that Romania may become an exporter of technology and products.
- V. We must structure a balance between achieving short-term and long-term objectives, as well as between technological development, applied research and basic research.
- VI. The limited RDI resources must be managed in such manner as to be oriented towards priorities and major issues. They should focus the key issues of national interest and backed by the industry associations that are apolitical.
- VII. Academic democracy and scientific careers will be encouraged and developed. (Radu M. *et al.*, 2009)

3.2. The purpose and objectives of the national research-development-innovation system reform

The purpose of the national research-development-innovation system reform is to restructure the connections between science, technology, economy and civil society in such manner as to let the market decide the primary distribution of RDI resources and to accelerate the commercialization of scientific and technological results.

The objectives of the national RDI system reform are:

- I. Changing the organizational structure of the national research-development-innovation system.
- II. Switching the RDI thematic from the traditional (flawed) model to the emergent model, calling for transdisciplinarity and strategic relevance.
- III. Multiplication RDI funding resources and improving the funding system.
- IV. Changing the management system of RDI units.

V. Stimulating the formation and operation of new research organizations (public or private capital).

VI. Changing the evaluation system of research results.

VII. Improving the communication and dissemination system of research results.

VIII. Stopping the migration / immigration flow of RDI specialists.

Changing the organizational structure of the national research-development-innovation system is based on a structural vision simplifying the system's components, effectively correlating them and insuring diminished expenses. (Radu M. *et al.*, 2009)

Such a target structure is shown in the figure below:

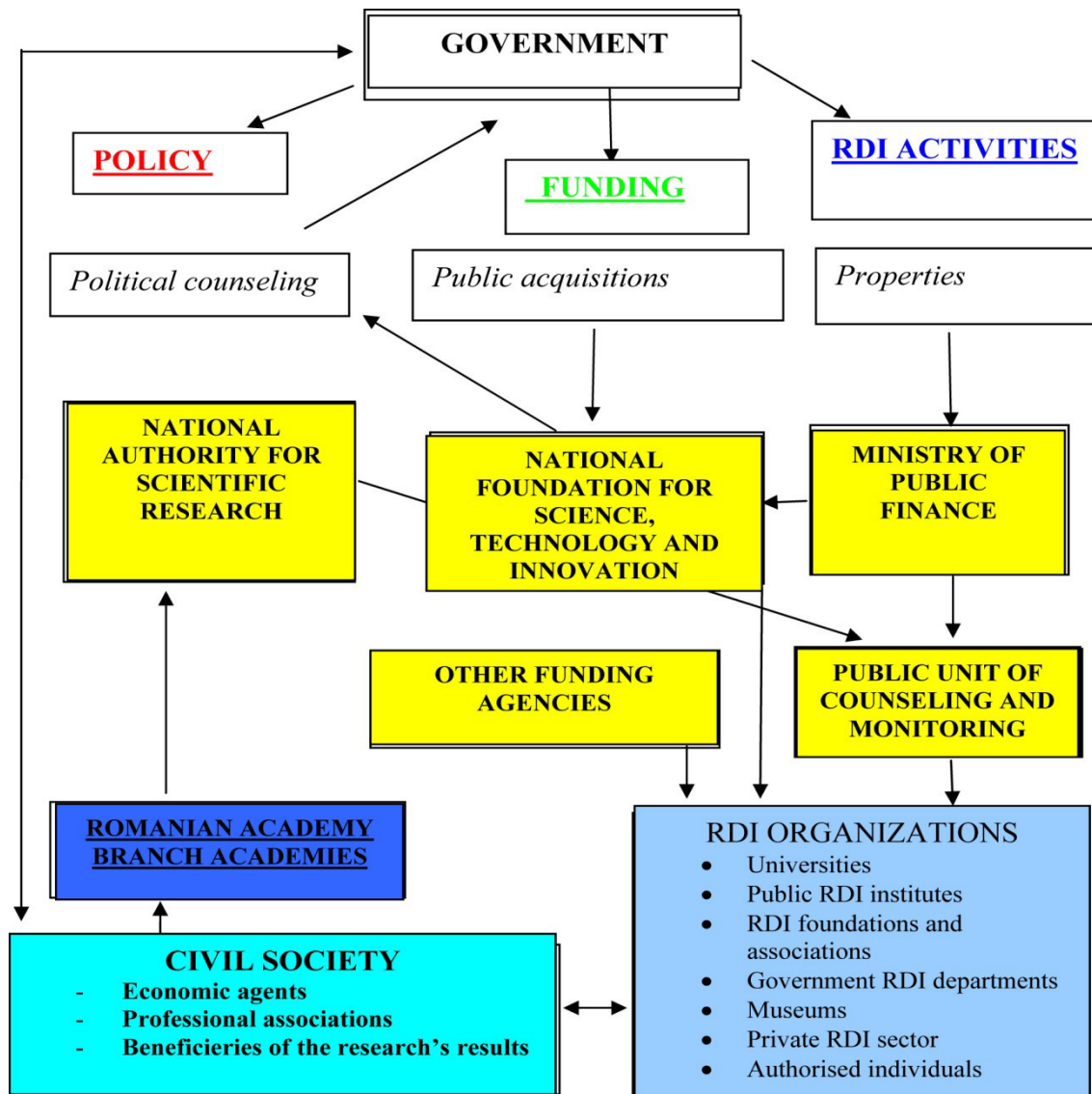


Fig. 1. The organizational structure of the national research-development-innovation system and its funding (Radu M. *et al.*, 2008)

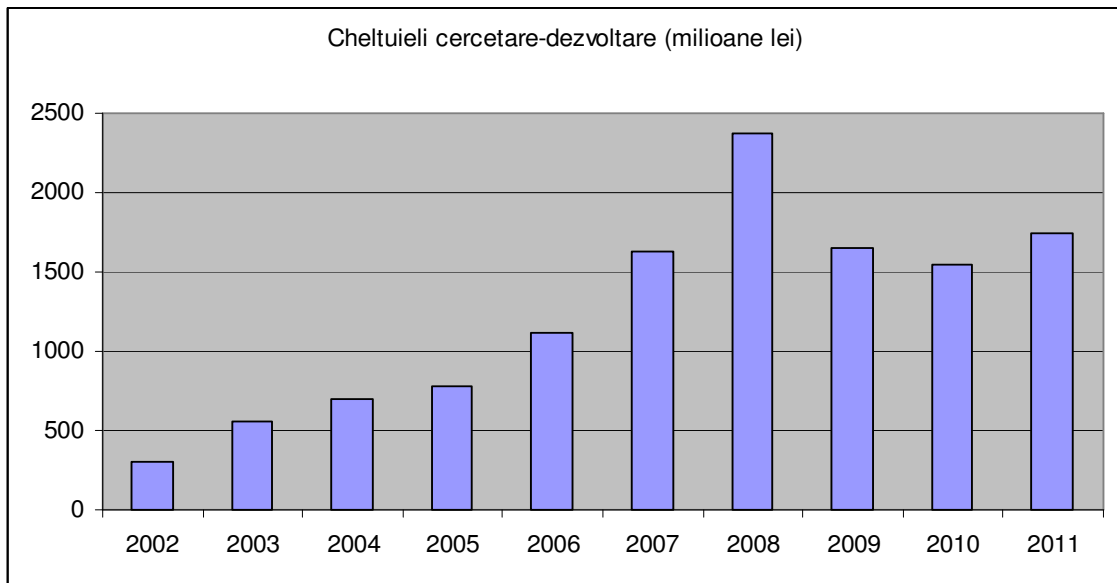
4. Funding of the research-development-innovation activity

The funds allocated from the budget for the research-development activity in the last 10 years are found in Table 1, which also presents the actual values allocated for this activity (fig. 2 and 3):

Table 1: Funds allocated for research in 2002-2011

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GDP %	0,21	0,39	0,39	0,41	0,46	0,52	0,58	0,47	0,49	0,50
Expenses (mil. lei)	304	560	696	778	1.119	1.626	2.371	1.649	1.551	1.745

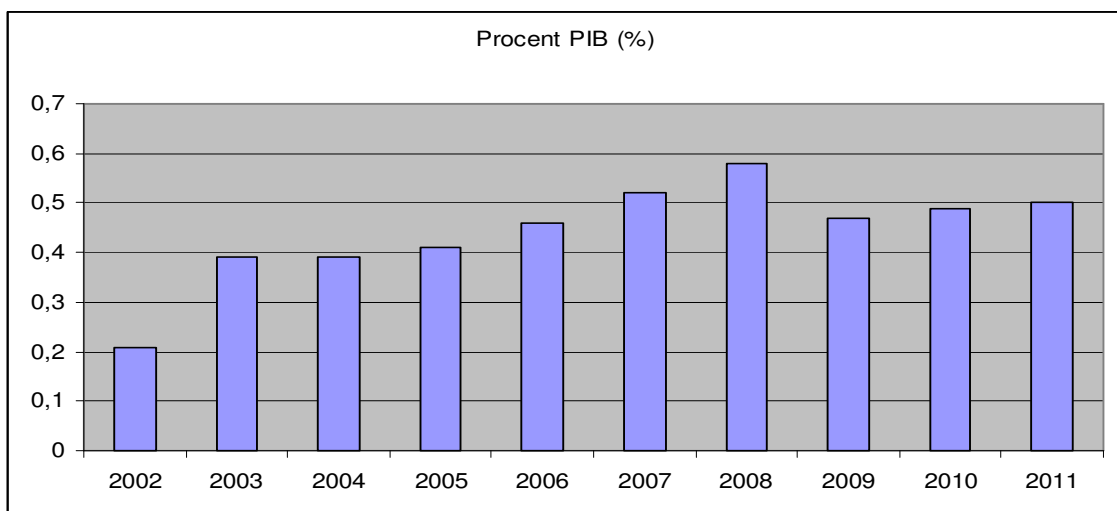
(Source: Author's processing)



TN: Research-development expenses (million lei)

Fig. 2: Research-development expenses in 2002-2011

(Source: Author's processing)



TN: GDP percentage (%)

Fig. 3: GDP percentage for research-development in 2002-2011

(Source: Author's processing)

Research and development funding is made by funds allocated from the state budget through programs. Thus, in Figure 4 we illustrated the current funding programs for research and development in Romania.

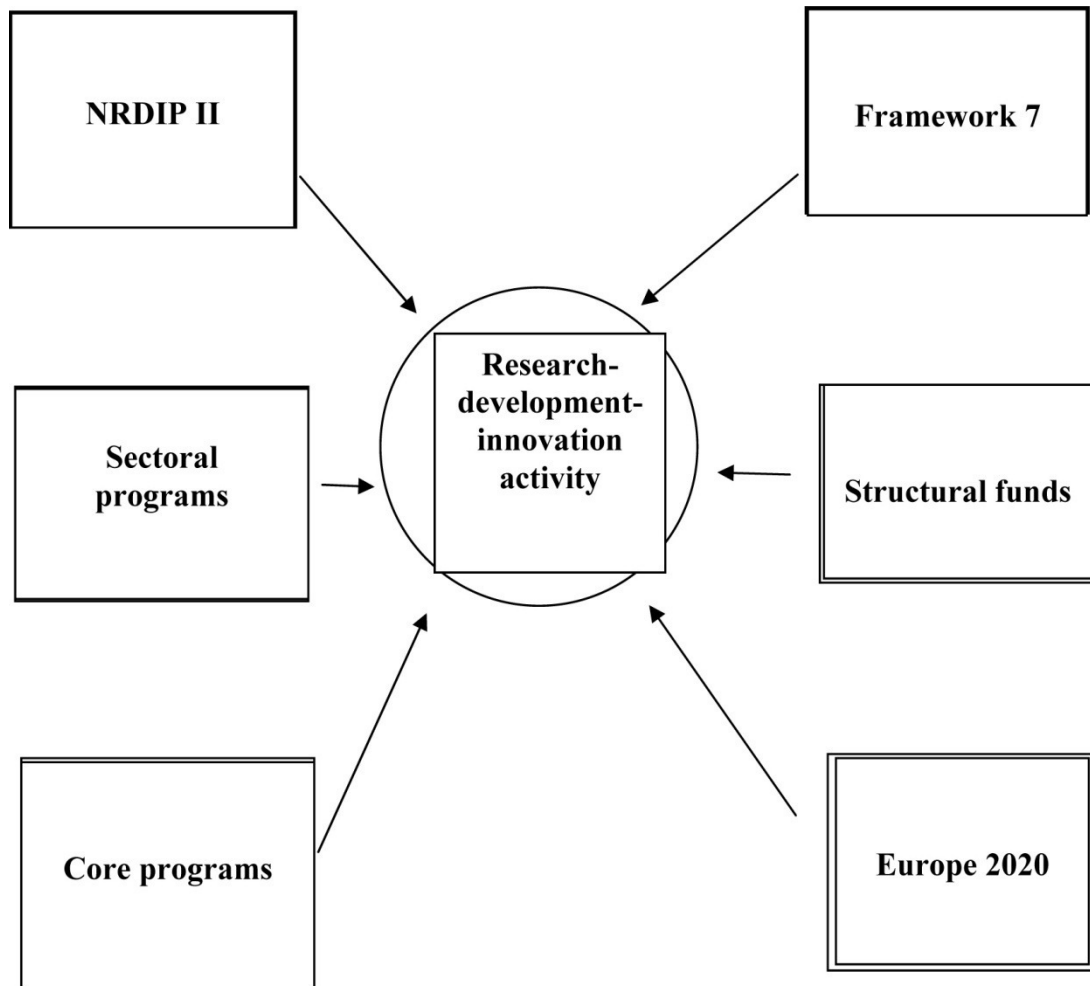


Fig. 4: Sources of funding for research-development
(Source: Author's processing)

The National Authority for Scientific Research (NASR), as a government body with responsibility for developing and harmonizing national research-development-innovation with the EU, aims to align the objectives of the science and technical community and the business environment in Romania to the specific science and technology priorities in the European Union, as well as to their evolution dynamic.

The support for planning and implementing of the RDI policies promoted by NASR in the post-accession period was given by:

- The National Strategy for RDI for 2007-2013 (National Strategy), approved by GD no. 217/2007;
- The National Plan for Research, Development and Innovation for 2007-2013 (National Plan), approved by GD no. 475/2007.

The National Strategy's main objective until 2013 is to bridge the current gaps compared to European countries and to prepare the RDI system to identify and consolidate, through international openness, partnership and competition, those areas where Romania can excel.

5. Conclusions

In recent years, more sources of funding for research and development were sought, but we must stress that the field of RDI does not benefit from external credits or from EU funding under national allocation like, for example, in agriculture. The only exception is represented by the structural funds for this domain. Access to EU funding is based solely on competition within the Community programs. Therefore, to increase the volume, quality and competitiveness of our country RDI activities in line with the evolution and requirements in Europe, is extremely necessary to stimulate them inside the companies. Cooperation between economic agents, universities and / or RDI institutions imposes itself as priority axis in tandem with the emergence of the concept of “entrepreneurial university.” (Paul Vass A., 2010).

We must not forget the fact that a research activity does not end with the presentation of its results; these results are either implemented in the production process, seeking material benefits, or are presented as an article or paper to various scientific manifestations and can be the basis for other research activities.

6. Bibliography

1. Paul Vass, A., (2010), Research, development and innovation: Romanian realities facing the European perspectives, www.revista22.ro/articol
2. Radu, M., Badea, D.C., Mocuța, G., (2008), *The policy of science – a new vision*, Performantica Publishing House, Iași
3. Văcărel, I., Bistriceanu, Gh. D., Bercea, F., (2006), *Public Finances*, 5th Edition, Didactic and Pedagogic Publishing House, Bucharest
4. Government Decision no. 217/2007 – *The National RDI Strategy for 2007-2013 (National Strategy)*, published in the Official Monitor no. 214/29.03.2007
5. Government Decision no. 475/2007 – *National Plan for Research, Development and Innovation for 2007-2013 (National Plan)*, published in the Official Monitor no. 371/31.05.2007