

EU PROGRAMS IN RESEARCH FIELD

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Abstract

Starting from research programs managed both at national and European level, we can state that between 2014 and 2020 the funds allocated to research programs have grown to just over € 70 billion in the Horizon 2020 program. The National Plan for Research and Development 2015-2020 through GD 583/2015 has allocated a total budget of PNCDI III for the entire implementation period of no more than 15,000 million lei and it provides from state budget funds, non-reimbursable external funds and contributions from project partners. However, in order to have budget planning for fundamental research, deviations may occur due to its specificities. Funding funders from developed countries usually avoid submitting priority lists. However, each state promotes lists of domains in which a university or research institute is or has been active in a given period. In order to have research projects, programs and budgets, we need to know our national priorities defined in the 2014-2020 Strategy for Research, Development and Innovation (SNCDI 2020), together with its main implementation tool, the National R & Innovation 2014-2020 (PNCDI3), as well as a related instrument, the Sectoral Operational Program for Research, Development and Innovation 2014-2020 (SOP-CDI).

Keywords: research, innovation, research funding, programs

JEL classification: O39, I22

Introduction

Fundamental research has evolved since ancient times in directions that were not anticipated at the time of research planning. For this reason, the researcher focused on fundamental knowledge must be given a wide choice of proposed projects. Along with the fundamental research developed at the level of the research institutes, innovation has always been a driver of economic and social development at the level of the transfer of research results in the business environment. A study by the World Bank demonstrates how "research and technological development increase labor productivity, competitiveness, and ultimately lead to well-being: two countries, such as Ghana and South Korea, who have gone from the same level of development, have reached to have a much different level after only 40 years, two-thirds of the difference owing to the accumulation of knowledge. "

Methodology of Scientific Research

This has been instrumental in the research and innovation methodology, we have used observation and examination tools, research methods based on the basic principles of scientific research, and we have also created procedures based on factual analysis as a result of significant practical experience and intensive documentation at the level of national and international literature. The analysis of the main paper for strategy in research, programs in research and opinions.

Research Results

Based on these considerations, the European Union has set strategic goals and ambitious initiatives, using science as a driver of economic growth and societal development. The above demonstrates that science is vital to welfare and integrated societal development, and therefore that investment in science is the pillar of sustaining the socio-economic environment for prosperity.

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Romania needs to invest in its own research and innovation, as well as to cooperate internationally with international institutes, respectively with science produced in other countries, and jointly develop joint technology projects. At present, we live in a world where fundamental knowledge is freely accessible, while most technologies are no longer a national monopoly. It is innovation that ensures competitiveness and economic progress. Lack of competitiveness means, especially in a global economy, limited public and private resources, and thus the inability to create and benefit from quality products and services - including through the inability to acquire up-to-date technologies produced in other countries. Investing in research and innovation is therefore supported by their role in increasing the competitiveness of the national economy and regional economies. In other words, the innovation and research on which it is based are essential to meet specific local needs. Research and innovation have an important transnational dimension, transferable from one society to another, but at least some of the community-specific issues cannot wait to be resolved elsewhere. And even when solved elsewhere, solutions must be tailored or customized. The investment in own research and innovation is therefore justified by the need to solve the specific problems, regardless of their nature, of the Romanian society. Returning to the fundamental research we can state that its purpose is to increase the Romanian participation in the development of the economic and social theory in general, the enrichment of the set of case studies, as well as the international debate on the values and the economic and socio-political construction of the contemporary world . It is considered that studying long-term phenomena can favour both a theoretical construction with broader explanatory power and the adoption of more appropriate administrative policies and actions.

Along with fundamental research and innovation, another important aspect is the strengthening of inter- and multi-disciplinary research both in new areas and by introducing the methods of some disciplines (mathematical methods, physic-chemical analytical methods, computational methods and analysis of data) in solving problems from different disciplines (humanities, biology, etc.).

In order to be able to propose concrete research projects to be funded through national programs, we need to know the main general objectives, specific objectives and specific cross-cutting objectives included in the National Plan for Research, Development and Innovation 2014-2020 (PNCDI3) as well as a related instrument , Sectoral Operational Plan for Research, Development and Innovation 2014-2020 (SOP-CDI).

Main General Objectives:

- OG1. Increasing the competitiveness of the Romanian economy through innovation. The objective is to support the performance of economic actors on global value chains. This implies, among other things, increasing the impact of economic activities through a better transfer of knowledge and expertise between research and the economic environment. The strategy aims to increase the economic relevance of research through the development of new technologies, products and services, fostering partnerships between economic and research actors and stimulating economic activities that rely on research-driven innovation.
- OG2. Increasing the Romanian contribution to the progress of frontier knowledge. The strategy assumes the increase of the international visibility of the Romanian experimental research and development. Achieving the goal will require better integration of researchers into international science initiatives, partnerships and programs; attracting top performers and training top researchers; to support research infrastructures and to increase their use and accessibility; as well as the formation of critical mass of researchers in the most promising scientific fields.
- OG 3. Increasing the role of science in society. The main purpose of investing in research, development and innovation remains, ultimately, to raise the standard of living and quality of life for citizens. The strategy assumes this objective not only by investing in and supporting RDI-based economic activities, but also by promoting programs through which research responds directly to specific needs of the public sector. They aim both to solve specific public issues through innovative solutions and to provide expert assistance in public policy-making.

Among the specific objectives, we mention the following:

- OS1. Create a stimulating environment for the private sector initiative through tools to drive entrepreneurship and market R & D results, as well as by credibility of partnerships between public and private actors.
- OS2. Supporting the intelligent specialization process by concentrating resources in areas of research and innovation with economic relevance and potential for R & D.
- OS3. Concentrating a significant part of RDI activities in areas of public relevance to increase the capacity of the RDI system to respond to the needs of the public sector and to develop the RDI's ability to adopt research results.
- OS4. Supporting the aspiration towards research at the frontier of knowledge through a better integration of Romanian research in the European and international space of research and development and innovation projects and initiatives.

Among the specific cross-cutting objectives, we mention the following:

- OS1. Doubling the total number of researchers by 2020 by ensuring a rapid and sustainable growth, numerical and qualitative, of human resources in research, development and innovation.
- OS2. Developing high performing research organizations capable of supporting large-scale science programs through institutional funding mechanisms based on monitoring and evaluation procedures in line with international best practices.

In addition to knowing the objectives of the PNCDI III Programs, we must also know the PNCDI III Programs, which support the research projects at national level from the point of view of financing:

- a) *Program 1:* Development of the national R & D system - to increase its capacity in resources, performance and quality of RDI activities;
- b) *Program 2:* Increasing the competitiveness of the Romanian economy through research, development and innovation - for increasing the productivity of enterprises through RDI within a national innovation system;
- c) *Program 3:* European and International Cooperation - for the circulation of knowledge and ideas through participation in international research programs and institutions and access to research resources not available in Romania;
- d) *Program 4:* Fundamental and Border Research - to maintain niche domains where Romanian fundamental research has a comparative advantage and a critical mass of researchers or where there are opportunities for international collaboration that adds to the Romanian fundamental research the "border" dimension, by obtaining cutting-edge scientific and technological outcomes with marketing prospects;
- e) *Program 5:* Research in areas of strategic interest - support programs run by scientifically relevant institutions with a scientific coordination role in areas of strategic interest for the formation and development of research institutions and national competences in areas of strategic interest for Romania.

According to the European Commission, "the main challenge for Romania is, at present," its low competitiveness ", which should lead us to strategic measures to integrate the results of research into production, and especially into" niche "production. Moreover, this aspect of low competitiveness comes not only in the context in which the results of research are often not transferred, but also in the context of a low level of entrepreneurship, and entrepreneurship based on innovation suffers in particular. The innovation rate (CIS) in companies is small, as is the private investment in R & D (EBRD). Concerning the intensity of business research and other private innovation indicators, the average annual growth rate for 2000-2011 was negative. The data also indicate a very limited marketing capacity of the Romanian research and innovation results. Last but not least, few multinational companies brought with them a substantial research component in the country. To respond to these challenges, market mechanisms need to be fostered by stimulating innovative entrepreneurship and involving companies in R & D and innovation. Furthermore, private capital must be attracted in support of innovation based on research and development.

Conclusions

In order to promote and support cooperation between research and business, concrete action measures need to be taken, such as: the creation of indirect tax financing mechanisms for RDI activities to encourage local investment in R & D. In recent years, these fiscal mechanisms (tax credits) have become common among OECD countries, as well as among the so-called BRIC countries; involving venture capital funds and guarantee funds to support research and innovation activities. One of the reasons often cited for Romania's low level of innovation-based entrepreneurship is the difficult access of SMEs to private equity. On the one hand, the banking market does not sufficiently support entrepreneurial risk, and even less the one based on innovation. On the other hand, the tax environment seems unattractive to investment funds. For example, in a 2008 study evaluating how favorable the tax and legal systems of many private investment funds are, Romania ranks at the queue of the ranking. At the end of 2011, four financial instruments addressed to SMEs in the country were introduced under the JEREMIE European Small and Medium Enterprises Initiative: three guarantee funds and a venture capital fund all contracted with financial intermediaries; more recently through the COSME program, the European Commission financially supports the innovative entrepreneurial initiative by creating these financial support mechanisms; Intellectual Property Management (The relatively successful success, in the last strategic period, of scientific publications has not been doubled by similar patent gains. As far as the intellectual property indicators are concerned, Romania is still far below the European average.

For example, Romanian patents are around 1.5% of the EU average. Part of this is also reflected in poor business research investment, including multinational companies. The World Bank attributes this reticence to the legislative ambiguity in the field of intellectual property. The legal framework of intellectual property is one of the main points.

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