

## NATIONAL RESEARCH PROJECTS IN BIO-ECONOMY FIELD

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**Abstract.** *This article presents the situation of research in bio-economy field under the 2nd and 3rd National Plans for Research, Development and Innovation, as well as other plans. Researchers with professional interest in this area are a growing category, given the importance of this field, at national and European level. Romania's participation in different era-net projects, with different focus, offers researchers new collaborative perspectives.*

**Keywords:** Bio-economy field, research, projects

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### 1. Introduction

As in all research domains, researchers in Bio-economy area can gain funding from international/European calls (e.g. through H2020 calls dedicated to bio-economy), but also from national calls. Nationally, research projects in Bio-economy were funded under 2<sup>nd</sup> National Plan for Research, Development and Innovation (under other research domains) and other programs and can now be funded under 3<sup>rd</sup> National Plan for Research, Development & Innovation (2015-2010), sectorial plans or The Competitiveness Operational Program programs or others.

Exposing the strategic visions and their basic ideas is necessary for the development of organisations involved in the fight against organized crime.

### 2. National research projects in bio-economy field

The vision is the engine of strategic management. Its development and maintenance represents the basic need of an organisation.

Research domains within 2<sup>nd</sup> National Plan for Research, Development & Innovation (2007-2013) [3] where divided into 9 types, namely:

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- D1. Information Technology and Communications;
- D2. Energy;
- D3. Environment;
- D4. Health;
- D5. Agriculture, Food Safety and Security;
- D6. Biotechnology;
- D7. Innovative materials, processes and products;
- D8. Space and security;
- D9. Socio-economic and humanistic research.

Within the 3<sup>rd</sup> national plan for R&D&I PNCDI III [1] research areas were divided into priority areas of smart specialization and areas of public priority; fundamental research is considered within this plan a horizontal activity, a priority for any field.

The priority areas of smart specialization are areas in which greater interest is anticipated in investing in scientific research on the industry part:

- a) bio-economy;
- b) information and communication technology, space and security;
- c) energy, environment and climate change;
- d) eco-nanotechnologies and advanced materials.

Within this plan, areas of public priority are areas that correspond to the general attributions of the state and which require substantial support from the State:

- a) health;
- b) heritage and cultural identity;
- c) new and emerging technologies.

The Competitiveness Operational Program (POC) 2014-2020 [5] includes bio-economy among the areas of intelligent specialization, stating that "The domain benefits from the huge potential of Romanian agriculture, in the context of a more active and growing local food industry, success in the industry and the pharmaceutical industry, and in the context of global trends such as high food demand. Food safety and optimization, the development of horticultural, forestry, zoo technical and fishing sectors or the exploitation of biomass and bio-fuels are sub-fields with obvious potential."

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As we can observe, under the 3<sup>rd</sup> National Plan research domains are grouped differently and under the bio-economy field the sub-domains of foodservices, bio-energy and biotechnologies lay. Under subprogram no. 2.1 Competitiveness in research, development and innovation during 2016-2017, were launched 4 calls which had as research area bio-economy within their targeted areas:

1. Bridge Grant – Knowledge transfer to economic agents (BG);
2. Experimental demonstrative projects (PED);
3. PTE – transfer to economic operator (PTE);
4. Innovation checks.

Analyzing the figures of the submission step [4], we can observe that the proposals submitted under this area represent a large part of the total (Table 1.).

**Table 1.** The submission step

	<i>No. of submitted proposals</i>	<i>Bio-economy: submitted proposals</i>	<i>Percent</i>
PED	2074	361	17%
BG	463	113	24%
PTE	217	35	16%
Innovation checks	323	147	46%

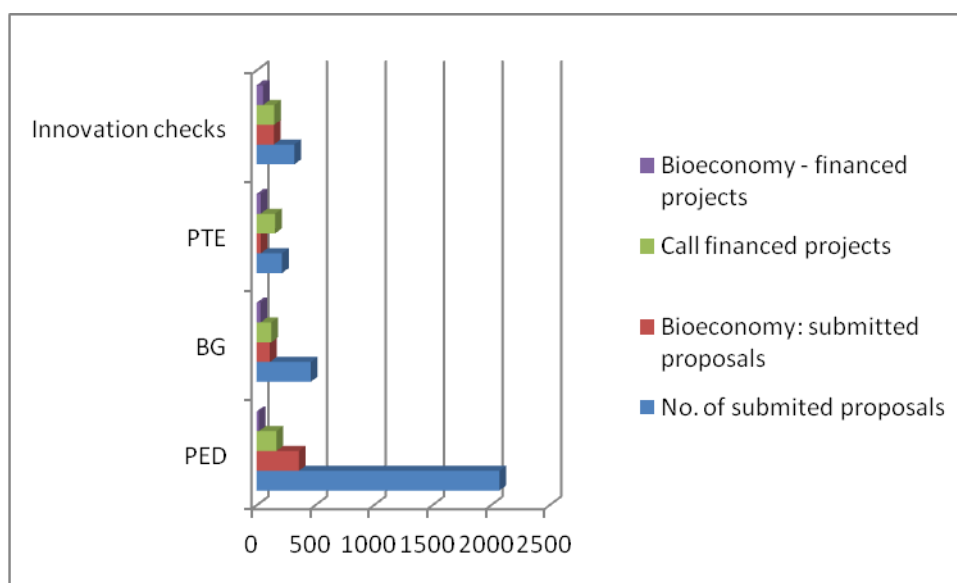
(Source: <https://uefiscdi.ro/p2-cresterea-competitivitatii-economiei-romanesti-prin-cdi>)

In terms of financed projects, the situation is almost de same: the percentage of financed projects is around 24% of all financed projects (within all calls).

**Table 1.** Bio-economy - financed projects

	<i>Call financed projects</i>	<i>Bio-economy - financed projects</i>	<i>Percent</i>
PED	168	19	11%
BG	126	33	26%
PTE	157	34	22%
Innovation checks	150	55	37%

(Source: <https://uefiscdi.ro/p2-cresterea-competitivitatii-economiei-romanesti-prin-cdi>)



**Fig. 1.** Status of submitted vs. financed projects within 2.1 Subprogram of PNCDI III.

Calls opened under the 3rd National Plan were dedicated to research organizations (universities, national institutes, NGO, hospitals etc.) and also to private institutions (SMEs, large companies) with research activity within their domains. For private institutions, funding rates vary in accordance with state aid legislation.

At European level, Romania is participating in the H2020 program as partner in Era-Net/Era-Net co-fund scheme. Currently, Romania is partner in 32 Era-Net/Era-Net co-fund projects out of which 7 have bio-economy related areas:

- CoBioTech (Innovation for Europe – life science meets market application);
- SusFood 2 (ERA-Net on Sustainable FOOD production and consumption);
- Biodiversa 3 (Consolidating the European Research Area on biodiversity and ecosystem services);
- CORE Organic (Coordination of European Transnational Research in Organic Food and Farming Systems);
- ERA-GAS (Monitoring & Mitigation of Greenhouse gases from Agri- and Silvi-culture);
- BiodivScen (Promoting and implementing joint programming at the international level to reinforce research on the development of scenarios of biodiversity and ecosystem services);
- SusCrop (Sustainable Crop Production).

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Under the era net scheme, Romanian research teams can submit proposals with other research teams from countries participating in the call. Each country funds its own researchers based on their national rules; evaluation, reporting and monitoring are done at national and/or European level, depending on the call text.

Competition in era-net projects is usually lower than in calls at national level, given usually by the number of submitted proposals. The main difference between the national projects and era-net funded projects lays in the opportunity Romanian researcher's gain to access equipment and human resources from abroad.

### **Conclusions**

Research in bio-economy is challenging due to its interdisciplinary approach: agro-technical area, energy, food, demographic growth, environmental technologies. After a long consultative process, at national level, the domain is considered a smart specialization priority in 2014-2020 strategy for research, based on national scientific and market potential.

The high rate of submitted proposals and financed projects within national calls, together with the large and various Era-net calls, prove the importance of this research field and the large number of researchers doing research in its sub-domains.

The presence of Romanian teams in bio-economy European projects is beneficial for researchers, institutions and at national level. The results of these projects have cross-sectorial effects not just to food supply chain, but to the entire social, economic and environmental welfare.

Research in bio-economy will succeed if different kinds of institutions, coming from different disciplines, work together to develop knowledge and solutions. As there are many private companies working in the bio-economy sector, we should encourage greater private involvement in these projects; for this, an improvement of the communication surrounding the bio-economy research is needed.

Our Romanian aim is to accelerate the innovation and research processes for creating new products, services and solutions, developing collaborative connections and communities in an integrated academic environment-business environment, aiming at accessing European funds.

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## REFERENCES

- [1] Decision no. 583 of July 22, 2015 approving the National Plan for R & D and innovation for the period 2015-2020 (PNCDI III). Available at: <https://uefiscdi.ro/resource-87074?&wtok=fdfaeefaf0ac9418382f3c335c4c4e49081fac75&wtkps=XY5dDsIgEITvwrMiP6WF7R2MiSdoCjZUaqW0kmi8u8CL0aedzMyXnQ5qeAUQgOJ6dQG1FihrgFdtgE4oGA1SquoigGgcJ10PmzeOPWuvwlJN1iji9zSMvZLTXICvBpf7FJDNIwFSshgNIK3vt9P5wBvCJJNEIICl6tfZ0YpKThiRpFCiUMc/huY1P8X0J5oseFLTrDdn8LwMeDMXG3pt8cOaiLtlf2cBr4/&wchk=04d69ce96dd17dc808da68cb5ab6e0fe639b2091>.
- [2] Innovating for Sustainable Growth: A *Bioeconomy for Europe*. Available at: [http://ec.europa.eu/research/bioeconomy/pdf/official-strategy\\_en.pdf](http://ec.europa.eu/research/bioeconomy/pdf/official-strategy_en.pdf).
- [3] Decision no. 475 of 23 May 2007 approving the National Plan for Research, Development and Innovation II. Available at <https://uefiscdi.ro/resource-82287?&wtok=039b7ee867b1bb7f6318d6216d5d494e326fdb1&wtkps=XY5dDoIwEITv0mfF7fLXLncwJp6A0EqKrQgFSTTe3bYvRp92MjNfdlqq6OWpJLYtV+tZY4hjjQUANp5yYt4oFIQBxPg2OFX166QtPqJ+rlwRkuY9twPnRRuX/JJ9jb2OTETLxKTIhk1MaXut9P5kNeAAgWUKcBQ/To7XnCRA4KARJWJOv4xPK75KYY/m44iD8qNarU6G+c+W/XF+E6Z7GH0lrXzYroxDHx/AA==&wchk=ec608c97ee87a48c54262bfd90bc666fe6d47735>.
- [4] Information on Calls. Available at: <https://uefiscdi.ro/p2-cresterea-competitivitatii-economiei-romanesti-prin-cdi>.
- [5] <http://www.poc.research.gov.ro/ro/articol/4164/prezentare-oi-cercetare>.
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