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OPERATIONAL PROGRAMME
SCIENCE AND EDUCATION
FOR SMART GROWTH

FINAL REPORT

Peer review for the Executive Agency Science and Education for Smart Growth Operational Programme on Structuring Centres of Excellence and Centres of Competence

Sofia, 18-19 June 2019





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Background

Science and Education for Smart Growth Operational Programme (OP SESG) is managed by the Executive Agency “Science and Education for Smart Growth Operational Programme” to the Ministry of Education and Science of the Republic of Bulgaria. The total budget of the Programme amounts to EUR 650 048 087.

The Programme is aimed to two main tasks:

- to be among the key instruments for achieving the objectives adopted by Bulgaria within the framework of the Strategy for smart, sustainable and inclusive growth (Europe 2020 Strategy);
- to serve as an effective tool for implementing cohesion policies, according to the agenda at national and Community level.

The financial allocation from the European Regional Development Fund (ERDF) and national budget to the first of the three main priority axes (PA) of the Programme - "Research and Technological Development" is EUR 235 201 564. Among the priorities set under this PA is enhancement of the quality of research and development of innovation. The national objective is to achieve sustainable growth in Bulgaria, and it requires targeted investment in priority in science fields, specific for the country, skilled researchers and inventors and an attractive research and innovation environment.

Following the above objectives, 13 projects were funded under the Operational Programme for the establishment of 4 Centres of Excellence (CoE) and 9 Centres of Competence (CoC) by the end of the year 2023. These centres aim to create the best possible conditions for attracting highly qualified researchers to conduct top level research at European scale in RIS3 priority areas and to improve significantly the potential for applied research, experimental development, and technological innovations including activities focused at the thematic areas defined in the innovation strategy for smart specialization of the Republic of Bulgaria 2014-2020 (ISSS): mechatronics and clean technologies, informatics and ICT, healthy life industry and biotechnologies and new technologies in creative and recreational industries.

The activities of each individual project could be classified in three main groups:

1. **Modernization of existing scientific infrastructure and/or building of new infrastructure** including construction activities; purchase and upgrade of equipment, needed for realization of research programmes, etc.
2. **Implementation of research and development activities** including conducting market-oriented research at highest international level in the priority areas of RIS3; attracting highly qualified researchers and top specialists for conducting high level research in the priority areas of RIS3;



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introducing new research, training and educational methods in practice; elaboration of joint scientific research programmes; building strategic partnerships and joint research programmes with leading European research centres;

3. **Dissemination of research results;** knowledge and technologies transfer and supply of the research services for business; development of sustainable sources of funding and operating conditions, including development of sustainable partnerships with business and conducting joint projects with private investors.

The projects are implemented in partnerships consisting of at least three partners (the number of partners varies from 3 to 17). The partnerships are not legally registered but are established at project level only. The rights and obligations of each individual partner are regulated in a partnership agreement. All partners have equal rights as they participate jointly in the technical and/or financial implementation of the projects. The project budget is distributed among the partners. Each partner is an independent public procurement entity.

The analysis of participants in approved projects shows a wide range of types of scientific organizations in terms of their status within the framework of Bulgarian legislation:

- Universities, established and functioning according to Higher Education Act of the Republic of Bulgaria (all of them being public bodies);
- Institutes of the Bulgarian Academy of Sciences (BAS), established and functioning according to BAS Act;
- Other research organisations (NGOs for example).

The centres have infrastructures in different locations within a city or in multiple cities in the country.

Motivation to call for an interregional peer review

In the process of projects' implementation, the Managing Authority has identified some substantial problems related to future functioning of the established centres such as:

- Lack of clear vision about: future legal framework of the established CoE/CoC (non-profit making legal bodies, bodies governed by the public law, state companies, etc.) as well as future management bodies (steering committees, management boards, etc.) of the newly created structures; representation of private sector in management body; distribution of financial resources;
- Difficulties related to state aid issues in the future functioning of the created CoE/CoC, balance between economic and non-economic activities, mechanisms for knowledge transfer and receiving income from increased scientific services; methods for dealing with revenues.

Based on the above challenges, the Managing Authority has defined the following needs that should be addressed in short-term and long-term perspective to facilitate the physical implementation of the projects and to ensure sustainability of investment:

- Defining the **future legal framework** of the established CoE/CoC including identification of needs for changes in the current legislation;
- Defining the suitable **future management structure** of the established CoE/CoC that would provide the centres with the necessary tools, decision making mechanisms and financial models to function efficiently, taking into consideration the dispersed nature of the centres' current establishment – infrastructure in different locations; identifying mechanisms for involvement of private sector in management of the centres;
- Addressing **state aid issues in the future functioning** of the created CoE/CoC; establishing of proper **balance between economic and non-economic activities**;
- Establishing future **mechanisms for technology transfer** and receiving income from scientific services.

Given the challenges faced, the efforts of the Managing Authority have focused on supporting the effective design and implementation of the centres. In order to respond to the identified needs in the short-term, the Managing Authority has undertaken different measures aiming to support the project partners, such as elaboration of detailed Gantt charts for the implementation of each project, conducting targeted seminars, organising regular meetings with project teams, etc.

Besides measures at national level, the Managing Authority has taken further steps for policy learning and exploring practices from other European regions in establishing and regulating CoE/CoC with similar profiles. For that purpose, an application was submitted to the Interreg Europe Policy Learning Platform requesting analysis of the current establishment structure of one CoE and one CoC funded under Science and Education for Smart Growth Operational Programme, and recommendations for the future functioning and sustainability of the centres. The Managing Authority considered that this approach would help in gaining practically oriented feedback and advice on the implementation of the respective projects in the specific territorial and thematic context.

The Managing Authority highly appreciated the opportunity for hosting the peer review of the Interreg Europe Policy Learning Platform, which has been of valuable benefit for the Bulgarian research institutions and decision-making authorities.

The peer review

The list of peers was established by the Interreg Europe Policy Learning Platform following selection of received applications according to their expertise on Centres of Excellence and Centres of Competence, similarities of institutional contexts with Bulgaria, geographical relevance, and diversity of perspectives (regional, national). Five peers have been involved in the peer review representing different countries and institutions as well as four Interreg Europe representatives:

Ninetta Chaniotou	Director international cooperation projects, Kainuun Etu Oy, Kainuu, Finland
Ger van den Kerkhof	Senior Account Manager EU Affairs – European Liaison Officer Flanders Make, Flanders, Belgium
Vojtech Helikar	Senior Business Consultant CEITEC, Brno University of Technology
Leena Sarvaranta	Head of EU Affairs, VTT Technical Research Centre of Finland
Tadas Tumenas	Advisor, Ministry of the Economy and Innovation of the Republic of Lithuania
Marc Pattinson	Thematic Expert in Research and Innovation, Interreg Europe Policy Learning Platform
Arnault Morisson	Thematic Expert in Research and Innovation Interreg Europe Policy Learning Platform
Thorsten Kohlisch	Project Manager Interreg Europe Policy Learning Platform
Etienne Verhelle	Policy Officer, Interreg Europe Joint Secretariat

The peer review agenda elaborated by the Interreg Europe Policy Learning Platform and coordinated with the Managing Authority was structured in a very constructive manner so that to ensure involvement of the stakeholders in interactive discussions on issues, which are crucial for sustainable functioning of the centres: Governance Model, Private Sector Involvement, Financial Models, Extra-regional Knowledge and Interregional Cooperation. Preliminary online meetings with Interreg Europe thematic experts and peers contributed to good preparation on these issues and effective implementation of the tight agenda.

During the peer review, these topics were considered from different perspective. Interreg Europe Policy Learning Platform representatives, stakeholders, decision makers and representatives of the Managing Authority highly contributed for gaining comprehensive understanding of the policy setup and faced policy challenges. Through involvement of stakeholders from one CoC and one CoE, the peers received thorough insight in the challenges



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from their point of view. This approach helped for common understanding of the issues to be tackled and provision of relevant recommendations.

Policy recommendations

Due to their expertise in issues similar to the faced policy challenges in the peer review, the peers managed to quickly gain insights on the problems. As a result of constructive discussion, the following specific policy recommendations on each question were provided:

(1) Governance Model

1.1. The legal body – What legal form and management models?

- To look at Bulgaria's legal framework (amend it, if necessary) to find the right legal status
- The Centres of Excellence must have a legitimate mandate with a public purpose responding to societal challenges – with the clear vision and mission – under specific timeline, for instance 5 years after which the impacts on societal challenges must be assessed by independent evaluators
- The Centres, and particularly the Centres of Competence, should combine knowledge- and business-oriented leadership, following an open innovation model
- The chosen governance model must include key public and private stakeholders
- Partnership agreement can be used to involve the partners on a project basis
- State-aid should not constrain the legal status
- In Sofia (or Bulgaria as such), where several Centres are working on similar sectors, umbrella organisation could be created to facilitate the coordination of the Centres
- Clearly distinguish the functions and field of interest of each of the Centres in order to avoid duplications and double financing.

1.2. Managing staff – What is the profile of managing staff?

- The CEO must have an entrepreneurial spirit. She or he can be a scientist or come from the business sector
- The CEO should have the necessary power/capacity to deliver the “business plan”
- The CEO has a specific term (analyse the possibility of secondment)
- Promote shared leadership - scientist and business, for instance CEITEC – to ensure multidisciplinary and continuity (no need to restart from “scratch” in case one of the lead positions becomes vacant)
- Staff diversity is important – the staff must have different backgrounds and experiences



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- Define clear KPIs and goals, which can be set by the board of directors, for the CEO and staff
- Brain circulation – take advantage of diaspora through incentives (reverse brain drain)
- Researchers should not be the sole focus. Pay attention to have a quality support functions
- Promote individual career plan development – Personal development
- Leave some flexibility for entrepreneurial CEOs, such as with overhead expenses
- Enhanced thematic integration and cooperation combined with strategic coherence at the national level

1.3. Intellectual property rights – What rights of ownership?

- Provide legal certainty in research and development activities and technology-based relationships with third parties
- One model and not a case by case IPR – one model for the CoEs and one for the CoCs
- Set-up the procedures for identification, ownership, protection and commercialisation – assign these tasks to professionals, not to scientists
- Ensure the timely and efficient protection and management of Intellectual property
- Facilitate the recording, monitoring and maintenance of the Intellectual property portfolio
- Ensure that economic benefits arising from the commercialization of Intellectual property are distributed in a fair and equitable manner

1.4. Scientific infrastructures – Improvement of the individual plans for utilization of the scientific infrastructure?

- Adopt a set of KPIs that must fit a minimum usage
- Must promote coordination on infrastructure procurements
- Adopt a roadmap for research infrastructures – transparent and open (example of Finland)

(2) Private Sector Involvement

2.1. Private sector in the governance – How to involve the private sector?

- International experience and competences in CoE/CoC governance
- Public-private intermediaries and CEOs of regional companies could be, under certain circumstances, part of the board of directors

2.2. Attracting the private sector – How to attract the private sector?

- Offer membership for SMEs and large companies – privileged access and different pricing structures



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- There must be set a minimum price for using the infrastructure (particularly scientific equipment) due to financing the equipment through EU funds. Otherwise it would be considered as an unfair competition.
- Hire business intelligence officers / key account managers to work on expert-level dealing with businesses on the ground and to really understand the needs and challenges of the companies
- Organise events for the business sector to learn about the Centres, cooperate with governmental Investment Promotion Agencies on attracting foreign corporates
- Prepare a clear list of services and contact persons – different expertise and offers for different industries
- Involve the business sector in the creation of services (example of innovation vouchers scheme in Lithuania in order to boost business – science collaboration and technological roadmapping in Flanders)

2.3. Private sector in CoC versus CoE

- Centres of Competence must work and collaborate with the private sector to a larger extent than Centres of Excellence (see the example of Flanders Make: “*you cannot survive without the private sector when you are a centre of competence*”)

2.4. Open the Centres to the private sector – How to attract the private sector?

- Need to open the mindsets of scientists – storytelling, exchanging experience and benchmarking the progress made by each centre
- Communicate to share good practices through using success stories

2.5. Voucher mechanisms – Financial Instruments?

- Listen to the service providers and companies when developing the instruments

(3) Financial Models

3.1. Centres of Excellence – What are the financial models to ensure financial sustainability (indicative references)?

- To have 30-40% of the budget (institutional basic funding) coming from the government (including structural funds) – national roadmap in the interest of the economy
- To have 30-40% of the budget (revenues) coming from competitive grants – European programmes such as Horizon 2020 and possibly from national programmes in the future
- To have 10-15% of the budget coming from collaboration with the private sector



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3.2. Centres of Competence – What are the financial models to ensure financial sustainability (indicative references)?

- To have up to 30-40% of the budget coming from the government
- To have 30-40% of the budget coming from competitive grants
- To have 20-30% coming from the private sector

3.3. Collaboration – Balance between economic and non-economic activities?

- Combining research and market-oriented activities. Therefore, a collaborative spirit is needed instead of having activities working in silos.

3.4. State aid issues?

- State aid to promote capacity-building and common understanding among all relevant actors (including financial control and auditors)
- Look at the possibilities of the current legislative framework (GBER, et al.), not only the constraints

3.5. Financial models are closely linked with governance models

- Income and revenue streams depend on the legal structure (see 1. Governance Models) – for instance funding rates in EU programmes such as Horizon 2020

3.6. Infrastructures – Key Performance Indicators?

- In Centres of Competence, the focus should be on the business sector – “Business first” considering the current challenge to involve the private sector in the Centres
- KPIs to measure infrastructure usage
- Promote yearly reviews

3.7. Performance agreements – Key Performance Indicators?

- Different types of KPIs - Criteria to evaluate the CoE and CoC should not be the same (SMEs and industrial customers, Horizon 2020 projects, publications, IPR, HR, seminars)
- KPIs measures must stir activities for the next years through positive feedback loops
- Management capacity to realise the KPIs

(4) Extra-regional Knowledge and Interregional Cooperation

4.1. Find links with Regional Innovation Centres

- Promote complementarity and not duplication between different regional and/or national strategies



4.2. KPIs – Knowledge Transfer

- Develop KPIs for assessing knowledge transfer

4.3. Internationalisation – Networks and Platforms

- Tap into European Networks, PPPs and build partnerships (more structured than networks)
- Encourage the use of other European platforms (S3, etc.)
- Scientific/technology networks and platforms
- Continuation and deepening of established peer relations (follow-up meetings)

4.4. Horizon 2020 and Horizon Europe – you need critical mass to play the game

- Develop a strategy for European collaboration

4.5. Other funding (co-investment and technology transfer funds)

- Financial instruments

4.6. Connect to world-class scientific leaders

4.7. Mobility schemes and major events (Horizon 2020 and Horizon Europe)

- Promote mobility schemes for researchers
- Promote foreign students' enrolment

4.8. International advisory boards – I.e. to set the research agenda for frontier research projects



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Conclusions and follow-up

Thanks to the active involvement of all participants, the peers were able to get deep insight into the policy challenges and provide practically oriented recommendations proven by their specific experience.

The lessons learned from the peer review were shared with all beneficiaries under projects for creation and development of CoE and CoC during [a meeting](#) organized on 21 June 2019. The policy recommendations were disseminated to the respective decision makers, and were published on [the website](#) of the Managing Authority.

The Managing Authority intends to apply under the next Call of the Policy Learning Platform for hosting another interregional peer review on thematic priority “Research and innovation”. The topics considered for policy learning are related to existing mechanisms for technology transfer and use of research infrastructure in other European regions and identification of policy solutions for the CoE and CoC developed in Bulgaria.

In addition, the Managing Authority would like to continue cooperation with the peers through some follow-up actions including targeted exchange with the centres of excellence and centres of competence represented by the peers.

The results of the peer review were highly appreciated by all participants: stakeholders, decision makers and Managing Authority. The research organisations implementing projects for creation and development of CoC and CoE under the Science and Education for Smart Growth Operational Programme have benefitted from good examples of similar centres and recommendations to be used in the process of planning their future legal status, management model and management structure. For the Managing Authority the peer review is a very good basis to build on the next initiatives for ensuring successful implementation and functioning of the centres.