

Fair, transparent, simple and low-cost: making a better performance-based research funding system for Bulgaria

Bulgaria's research and innovation landscape urgently needs reform to reduce fragmentation, increase funding and improve international competitiveness, according to a new PSF expert report. This can prepare the ground for an integrated, fair and transparent system for relating research funding to performance.

In 2015, as part of a PSF Peer Review of the Bulgarian R&I system under the Horizon 2020 Policy Support Facility (PSF), experts warned that low levels of public R&I funding in Bulgaria were not sustainable and weakened the country's growth potential – as a drop in the existing pool of knowledge and skills would make Bulgaria less attractive to international R&D investment and businesses. "Effectively, it could mean a process of 'submerging' as opposed to 'emerging' development," they reported at the time.

A new PSF report, entitled '*The research evaluation and performance-based funding system in Bulgaria*', requested by the Bulgarian authorities, follows up on the PSF Peer Review outcomes. It focuses on the development of a system for the evaluation and funding of the country's research system that will contribute to improving Bulgaria's performance in R&I.

"We observed several key areas that urgently need fixing for Bulgaria to reach its research and innovation potential," said Luc Soete, the expert panel's Chair. *"Over-reliance on international funding, poor industry-research ties, disjointed approaches to higher education, R&I policy and institutions, as well as an erosion of trust in the whole system are major concerns which, unless remedied, could further weaken Bulgaria's ability for economic growth."*

The experts recommend the Bulgarian government to address fragmentation in the national research system by means of system-wide institutional reform, while at the same time doubling Bulgaria's national public funding of R&I. The research and innovation capacities in the country should be concentrated by creating a restricted number of research and entrepreneurial universities.

Structural reforms are an "absolute pre-condition" for any performance-based research funding system (PRFS) to be effective in Bulgaria, say the experts who carried out the study.

When PRFS is “fit for change”

The report highlights the need for significant improvements in the framing and use of scientific indicators, and in the use of the evaluation results for the distribution of funding.

“It is critical for the PRFS to be perceived as a genuine policy tool rather than merely a funding distribution instrument, as is currently the case. The incentives created by the PRFS should be focused on fostering those changes in the research system that policy makers aim to promote,” observes Bea Mahieu, the panel’s rapporteur.

To succeed – and be accepted and endorsed by both policy-makers and research performers – the PRFS must be fair, transparent, simple and low-cost, the experts stress. Following a review of the bibliometric indicators and data sources in Bulgaria’s current PRFS, they conclude that major technical and qualitative improvements are needed.

“We recommend that Bulgarian authorities take stock of international norms and consult professionals, especially in bibliometrics, to create field-normalised or field-independent citation indicators,” explains Terttu Luukkonen, one of the experts. *“Clear definitions of the terms used, and the type of products or activities admitted, and a selection of permitted data sources are key to tackling many observed problems in the existing evaluation methodology.”*

The report includes tried-and-tested examples of good practice from other countries for defining appropriate data and evaluating R&I performance, such as: the Norwegian model for publication weighting, Finnish institutional funding,

Table 1 - PRFS scenarios developed in the PSF report on Bulgaria

Scenario 1 <i>Metrics-based PRFS</i>	Scenario 2 <i>Integrated PRFS</i>	Scenario 3 <i>Double PRFS</i>
Key parameters		
Main evaluation annually - metrics-based	Main evaluation every 5 years – peer review Annual monitoring of progress – metrics-based	Main evaluation every 5 years – peer review Targeted annual evaluation – metrics-based
Pros		
Immediately rewards research performance In line with the 2017 National Strategy Very cost-efficient	Allows for rewarding progress Enables stability in funding Can take missions into account	Enables stability in funding Can take missions into account Can specifically reward excellence
Cons		
Sets high quality requirements for the evaluation methodology to ensure fairness and robustness of the results Does not ensure stability in research funding Cannot take missions into account so different PRFS are needed for different types of organisation	Requires long-term planning at the government level Requires capacity in the Ministry or elsewhere to run a high-quality panel evaluation process Less cost-efficient	Does not allow for monitoring and annual adjustments rewarding progress Risks fragmenting the limited government budget for research Requires long-term planning at the government level Requires capacity in the Ministry or elsewhere to run a quality panel evaluation Less cost-efficient

and the European Reference Index for the Humanities (ERIH PLUS) register of approved peer-reviewed journals. The experts also recommend that Bulgaria use the de-facto EU standard for collecting and storing research data, the Current Research Information System (CRIS).

Several PRFS scenarios are developed in the PSF report (see table 1), making the case for the development of an integrated performance-based research funding system, combining regular and longer-term evaluation exercises, based on peer review, metrics and “systematic self-assessment” approaches.

What are the key recommendations for Bulgaria?

Structural reform to address fragmentation of the Bulgarian research landscape is essential: Bulgaria should target its efforts (and additional funding) on 10-12 research players, including 5-6 new 'research universities' and 5-6 new 'entrepreneurial universities,' with clear remits. Then focus on a simple and transparent PRFS with well-defined quality using scientific as well as societal impact indicators, and a scoring system that ensures fairness.

Designing an integrated evaluation and research funding framework is key: the country should focus on peer review, while harnessing the strengths of clearly defined and applied metrics-based evaluations. The R&I system should change to English reporting of research performance through systematic self-assessments, in preparation for international external peer assessments. Finally, assigning responsibility for evaluation to a special unit, which can call on external expertise in indicator development and analysis (especially bibliometrics), is needed.

For more information

Final Report on the PSF Specific Support to Bulgaria: *'The research evaluation and performance-based funding system in Bulgaria'*
<https://rio.jrc.ec.europa.eu/en/library/specific-support-bulgaria-final-report>

About the PSF Specific Support to Bulgaria <https://rio.jrc.ec.europa.eu/en/policy-support-facility/specific-support-bulgaria>

About the Horizon 202 Policy Support Facility (PSF) <https://rio.jrc.ec.europa.eu/en/policy-support-facility>

About the report and team

This report was developed between February 2017 and February 2018 as a Specific Support Action to Bulgaria under the Horizon 2020 Policy Support Facility (PSF), which provides expertise and operational support to Member States in designing, implementing and evaluating national research and innovation policies, including country Peer Reviews and Specific Support to policy reforms, as well as thematic Mutual Learning Exercises to improve policy-making practice through exchanges among several countries.

Carried out by Luc Soete (chair of the PSF expert panel and former Rector Magnificus of Maastricht University), together with Bea Mahieu (rapporteur and senior consultant at Technopolis Group), Terttu Luukkonen (former Chief Advisor of the Research Institute of the Finnish Economy) and Erik Arnold (Adjunct Professor in Research Policy at the Royal Institute of Technology (KTH), Stockholm, and Chairman of Technopolis Group, the outcomes of the PSF Specific Support to Bulgaria were presented on 3 May 2018 at the 'Smart Specialisation and Technology Transfer as Innovation Drivers for Regional Growth' event in Sofia.