



Horizon 2020 Policy Support Facility

Specific Support to Georgia

Improving the Effectiveness of Georgia's
Research and Innovation System

through Prioritisation, Selectivity of
Funding and Science-Business Links

Presentation of the Final Report, Tbilisi, 14/06/2018



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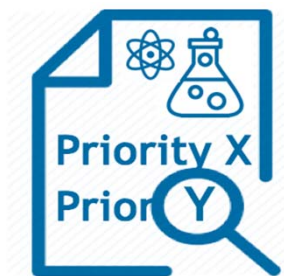
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1. Introduction

Introduction - Task of the Expert Group

Provide tailored advice and specific recommendations to the Georgian authorities linked to the following three focus areas for Science, Technology and Innovation (STI) policies:



I. Support in identification of promising research fields (prioritisation)



II. Proposal for the performance-based funding of research entities (PBRF)



III. Measures for narrowing the gap between research and industry/business



2. Policy Messages

Strengthen 4C for Georgia

General note: Georgia is a leader in facilitating business activities, but a laggard in facilitating research and innovation activities.

For the benefit of the Georgian STIS, the panel strongly advises 'Strengthen 4C for Georgia':

Coordination, concentration, collaboration, coherence

Strengthen 4C for Georgia

- **Coordination:** through improved political governance of R&I, of priority setting
- **Concentration:** of the fragmented research system, of resources and priorities
- **Collaboration:** between research and business, stimulation through financial instruments, around research infrastructure
- **Coherence:** of governance (of strategic, operational, performance levels), across R&I funding instruments, of base-line funding allocation

3. Overarching Problems of the Science, Technology and Innovation System

Three dimensions of R&I systems

Funding arrangements				Research-performing organisations	Governance	
Level	Modality	Origin	Research-funding organisations		Distribution of responsibilities (authority rights)	Evaluation
High	Base-line funding	Private, public	Government / ministries	Research organisations (e.g. universities, RIs, etc.)	Which actors:	Evaluation system?
Medium	Project funding	National international	Funding agencies		Decide on funding (how much goes where)	Peer review? indicators?
Low			Mixed		Research performers / disseminators (in exchange for funding)	Decide on research priorities (including infrastructure)
					Act (on funding and/or priorities)	

Funding of research and innovation I

- Low level of research and innovation funding
- De facto no base-line research funding for research labs established by the universities
- Research institutes receive what is in Georgia considered to be 'base-line funding'. Does not match the standard definition of 'base-line funding' - meaning it does not go beyond basic salaries (no resources for consumables, etc.)

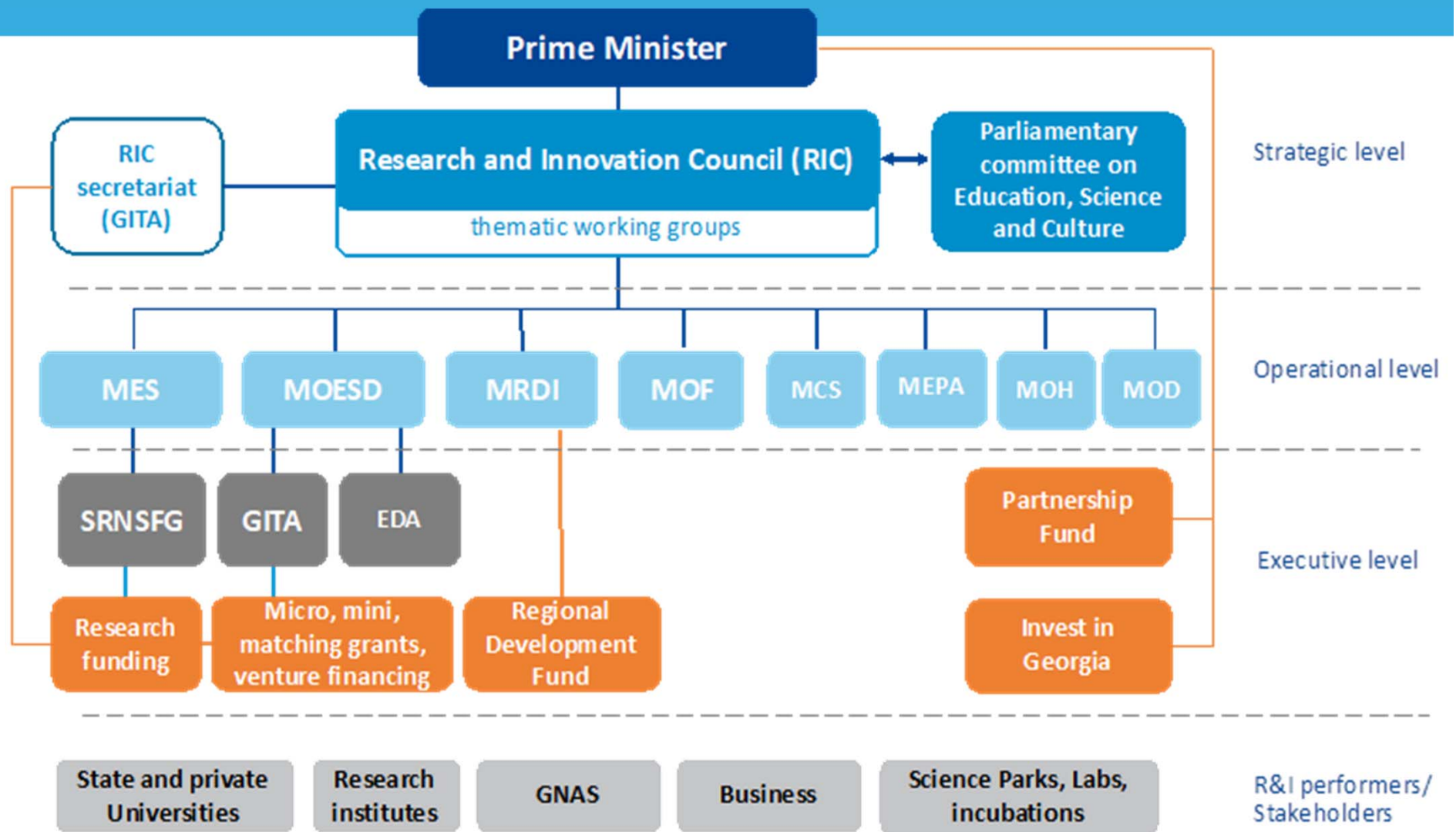
Funding of research and innovation II

- **Cross cutting recommendation: Increase the funding for research and innovation**
 - Without significant increase of public and private funding to an adequate level, there is a risk that the whole higher education and research system will wither away, with serious consequences for the economy and the whole country
 - Funding targets should be set: reach at intervals, e.g. 1 % GERD of GDP
 - Private R&I funding needs to be stimulated, e.g. via co-financing (see SBL chapter)

Research organisations

- Reform of institute sector is incomplete
- A better use of available funds should be made, through prioritisation and avoiding fragmentation.

Research governance I



Research governance II

- With the current setting the RIC is rather big in terms of members.
- Its main tasks are to work out strategies and to identify thematic priorities of Georgia by government decree, which has not been done so far.
- RIC needs an operational budget to cover administration and analysis, but not a funding budget.
- It should be steering how the government uses its budget on R&I.

Research governance II

Authority rights on ministerial level:

- Decide on funding;
- Decide on research priorities (including infrastructure issues); and
- Act (e.g. to distribute grants).

Evaluation:

- Academy of Science as a reputational body, is unable to reconcile the results of the evaluation with policy action
- **confidentiality of reviewers** has to be respected for the benefit of Georgia's science system

Red tape in research and innovation

- Cross cutting recommendation: **Overcome bureaucracy and ease off administrative burden** for research and innovation
 - Take an example at business regulations
 - Solving these issues enables quick gains in terms of commitment, resources and economies of scale



4. Prioritisation in research and innovation

Current situation

- Over 80 research priorities => not sustainable
 - Bring down to three-four priority areas
- Broad priority areas problematic on three counts:
 - Not a result of systematic and informed selection
 - Not backed by resources
 - Little coordination between research, innovation and economic priorities

Preconditions for successful prioritisation of research and innovation fields

- **Recommendation: Restructure RIC to become a 'proper' strategic actor**
 - Clarity about strategic, operational and executive responsibility
- **Recommendation: Initiate a dedicated, nation-wide, project on designing and implementing an information system for Georgia**
 - Availability of reliable data on research, innovation and the economy
- **Recommendation: Establish a Small Number of National R&I Centres**
 - Overcome the fragmentation of the Georgian research system

Identifying and establishing R&I priorities: what priorities?

- Recommendation: **Align the priorities for research and innovation and strategic economic priorities**
 - Coordinated research and innovation and economic priorities

Identifying and establishing R&I priorities: criteria

- Recommendation: Develop consistent and transparent criteria for the selection of priority research and innovation fields/areas

	Impact and application criteria (high)	Impact and application criteria (low)
Academic criteria (high)	Priority selection quadrant short and medium term (5 year and more)	Additional priorities for the long terms (10-20 years)
Academic criteria (low)	Priority import knowledge (5 years)	Do not select.

Identifying and establishing R&I priorities: how to identify priorities?

- Recommendation: Apply **reliable methodology** for priority selection
- Foresight exercise
- Smart specialisation

Identifying and establishing R&I priorities: who decides?

- Recommendation: Design a meaningful and transparent **priority decision-making process**, including a broad stakeholder consultation
 - Strategic level: (restructured) RIC
 - Management level: An existing RFA or distributed across agencies
 - Wide stakeholder consultation

Identifying and establishing R&I priorities: implementation of R&I priorities

- **Recommendation: Implement priorities through funding and positive incentives**
 - Funding choices: small number of priority programmes
 - Positive structural incentives

4. Performance-based research funding system (PRFS)

Current situation

- evaluation of research performance is at the core of PRFS;
- current arrangement with reporting to GNAS is not working

Preconditions for implementing a Performance-Based Research Funding System in Georgia

- **Recommendation: Introduce base-line funding to public research organisations and create a level playing field**
 - Real base-line introduce going beyond salaries
 - Open base-line to all public research organisations, and lift differentiation

- **Recommendation: Fully integrate Research Institutes into the universities**
 - Completing the reform of the institute sector
 - Separation hampers the performance of both RIs and universities

Preconditions for implementing a Performance-Based Research Funding System in Georgia

- **Recommendation: Upgrade the research infrastructure**
 - Modern science needs facilities and instrumentation
 - Long-term effort
 - linked to the prioritisation of R&I fields and to national R&I centres
 - Research equipment and facilities should be concentrated, and equipment-sharing arrangements agreed

PRFS implementation I

- Recommendation: **allocate responsibilities for managing PRFS**
 - reporting requirements to GNAS should be stopped without delay
 - Management of the PRFS: directly by the Ministry of Education and Science, delegated to an agency or be carried out in a mixed approach


PRFS implementation II

- **Recommendation: establish an R&I system database**
 - information about researchers, current research projects, and output, etc. - depending on indicator set
 - Hosting organisation decide
- **Recommendation: combine metrics and peer review for performance measurement**
 - Metrics on various dimensions: scientific, economic, societal, collaboration, education
 - At certain time intervals: peer-review panels, including foreign experts and emigrated Georgian scientists

PRFS implementation III

Few more issues to be considered:

- gradual introduction of the PRFS: it should not be **delayed**; pre-conditions are not hindering the introduction of PRFS
- state and capacities of the **research institutes and research labs should be assessed**
- **balanced set of indicators (not only publications)**
- **Define share of base-line funding, which should be allocated on a performance basis**



5. Science-Business Links (SBL)

Science Business Links (SBL)

Situation

- Weak coordination between governance actors responsible for SBL policy and support.
- Lack of complementarity of activities and measures offered by the SRNSFG and GITA

Major barriers for innovation

- lack of skills (quality of human capital)
- access to finance
- legal and bureaucratic barriers
- lack of collaborative culture among research and business.

SBL – Transfer of Knowledge I

Recommendation: Establish a **network of brokers and related back office** for technology transfer and science-business cooperation.

- No new TTO structures at research organisation level required, but **one back office to coordinate a network of brokers**
- **map the available brokering capacities**
- **Online matchmaking tool**

SBL – Transfer of Knowledge II

Recommendation: Provide clear and simple rules and advice for researchers active in SBL

- Researchers as SBL agents for stimulating collaboration between research organisations and companies.
- Public support for these researchers:
 - clear and simple framework for SB contracts
 - clear and enforceable rules for engagement of R&D organisation employees in company activities
 - advice on possible synergies/sharing available infrastructure

SBL -Transfer of knowledge III

Recommendation: Ensure that a favourable IPR regime is widely implemented and will facilitate research-business cooperation and technology transfer.

- Each public research institution must define the IP policy in its internal regulations:
 - rights and obligations of authors (researchers) and organisation
 - share of income, coverage of enforcement costs, etc.
 - rules of commercialisation.

SBL – Co-production and co-funding I

Recommendation: **Introduce Competence Centres (CC)** as instrument for applied and collaborative research, and for regional development.

- Related to local HEI (outside Tbilisi).
- Close to industry concentration
- focus on technology services and development, skills development, etc.

SBL – Co-production and co-funding II

Recommendation: Tune the R&I funding portfolio towards collaborative R&D

- **Modify SRNSFG applied research scheme:**
 - give companies the opportunity to receive public funding
 - coordination and complementarity with GITA's matchmaking grants
 - continue involvement of GITA, Sakpatenti and foreign experts in the assessment and selection of proposals

- **Introduce innovation vouchers**
 - lowering transaction costs of (starting/developing) SB interactions
 - minimum administrative burden
 - limited funding (e.g. EUR 5,000)

SBL – Co-production and co-funding III

Recommendation: Tax incentives for Georgia should only be considered in the longer run

- Tax incentives require a certain stability of the tax system and maturity of the innovation ecosystem
- High level of learning among administration required
- Tax exemptions are different.
Some are in place - these should all be applicable (e.g. VAT repayments).
Exemption for SRNSFG applied research grants

SBL – Exchange of People

Recommendation: Introduce a **research-to-business fellowship scheme for PhD students.**

- Possible approach: both research and business organisation supervise the implementation of the PhD project
- student's study time is shared between university and company