



Organisational Evaluation of the Slovenian Research Agency (SRA)

Evaluation Report

European Science Foundation (ESF)

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Foreword



It gives me great pleasure to introduce this document as the outcome of the organisational evaluation of the Slovenian Research Agency (SRA), coordinated by the European Science Foundation (ESF) under the authority of an independent Evaluation Committee. I would like to acknowledge the vision demonstrated by the SRA leadership in placing their relatively young organisation under the spotlight of scrutiny by an international evaluation.

As the world undergoes soaring economic, environmental and geopolitical volatilities and anxieties, the onus is upon us demanding profound reflections, new approaches and policies to be nurtured by scientific inquiry. The European research councils and research funding organisations can collectively have a determining and spearheading role in (re)setting the scene and contributing to the shaping of the required scientific agendas and dialogues both in Europe and globally. An important step has been taken in this direction by the founding of Science Europe as the focal point in which the various required ingredients should converge into a common and coherent voice for science in Europe. On the other hand, the European Commission is preparing for its next Framework Programme for the period 2014 to 2020, with the ultimate aim of “*maximising the contribution of EU funded research and innovation to sustainable growth and jobs and to tackling the grand challenges facing Europe*”¹.

One of the most effective ways in helping the national research funders to assume their rightful positions in this arena and to maximise their potentials for adding value – both nationally and especially collectively – is through analysing, benchmarking and sharing of information, experiences and good practices. Independent organisational evaluation conducted by

experienced and visionary experts can do that by scrutinising an organisation with the goal of characterising fitness and identifying opportunities for improvement.

Earlier this year Slovenia has embarked on an *audacious mission* for transforming its nation towards a stronger knowledge-based society and a *regional science leader*², by adopting a ten-year strategic plan addressing *Higher Education* as well as *Research and Innovations*³. The Slovenian Research Agency can play a central and enabling role towards this ambitious goal.

The SRA joined ESF membership in 2008, four years after its creation, and in September 2011 it became one of the seven founding organisations of Science Europe. The Agency has been an active participant in ESF’s activities, particularly in the Member Organisation Forum on Peer Review and for the development of the European Peer Review Guide. It may be opportune to acknowledge that the SRA was indeed the first – of the 30 responding organisations – to complete the very elaborate survey on Peer Review which has formed the main basis of the Peer Review Guide.

I trust the outcome of this evaluation of SRA will help fine-tune and calibrate the mission and operation of the organisation in the face of its future challenges.

I wish to extend my sincere gratitude to the members of the Evaluation Committee for their intensive attention and outstanding contributions to the review and in preparing this report. The contributions of the ESF staff in coordinating the exercise and for the drafting of the report are highly appreciated.

Professor Marja Makarow

ESF Chief Executive

2. <http://news.sciencemag.org/scienceinsider/2011/05/ten-year-plan-aims-to-make-slove.html>

3. Audacious Slovenia: National Higher Education Programme 2011-2020 and Research and Innovation Strategy of Slovenia 2011-2020 adopted by the Slovenian parliament in May 2011

1. http://ec.europa.eu/research/horizon2020/index_en.cfm

1. Executive Summary



Since its founding in 2004, the Slovenian Research Agency (SRA) has been extremely effective in establishing itself as a *modern* and *efficient* funding agency comparable to well-established European research councils and funding organisations with much stronger heritage and current portfolios.

For valid reasons the government has been fully and closely engaged in determining the mandate and strategy of the SRA and in providing the necessary investments in proportion to the portfolio of the agency and in comparison to other similar EU members. The ten-year Strategy Plan adopted in early 2011 for Research and Innovation in Slovenia until 2020 commits to increasing the public funding of research to 1% of GDP as early as 2012 and to 1.5% GDP by 2020. This ratio was 0.66% in 2009 and hence the Agency has a visionary and proactive agenda for the next years to come. However, it may be appropriate now, to provide increased autonomy to the Agency to play a more active and enabling role for the setting of the national agendas and priorities for research, innovation and higher education in cooperation with the Universities, Research Institutes and other related key players in the Public and Private Sectors.

The Evaluation Committee has been very impressed by the overall performance of the Slovenian Research Agency in delivering high-quality added value to the Slovenian Research system. The Committee has also identified three main areas where opportunities exist for the Agency to pursue further enhancement of its mission, operations and added value for the benefit of Slovenian Research as well as the ERA. These three areas are:

- Mission and Strategy
- Implementation: Funding Instruments and Evaluation in search of excellence
- Internationalisation

The summary of these three main observations are provided below with more detail on specific points given in Chapter 3.

Mission and Strategy

The Evaluation Committee recognises that the Slovenian Research Agency has been very successful in its initial mission to steer the funding of the national research system in less than a decade and within a strongly changing institutional environment, while proactively seeking international standards and good practice. However, the Committee also came to realise that the process of strategy definition and evolution available to the SRA could make better use of the potentials of the relevant bodies and communities, mainly in Slovenia but also elsewhere in Europe. Within the context of dynamic scientific landscapes and priorities, their projections and demands onto the national scientific strengths and potentials, while confronted with possible variations of the political and socio-economic agendas, it is necessary to ensure that the strategy definition, evolution and implementation enjoy not only scale and robustness but also vitality and responsiveness. To this end, the Committee believes that the Agency could greatly benefit from enforcing more coherence in identifying and integrating relevant inputs, not only vertically, through interactions with the various ministries and government bodies, but also horizontally, spanning, for example, Universities, Research Institutes and mandated scientific bodies, the Agency for Technological Development (TIA) as well as other key players in the Public and the Private Sectors.

To maximise its potential for added value within the framework of the Slovenian Research and Innovation Strategy (2011-2020), for example, by strengthening its mandate in favour of innovation will require some adaptation to the current strategy and operations of SRA which are primarily designed for academic research management.

The Evaluation Committee has also observed that the current Slovenian research system in general is insufficiently open to attracting excellent young researchers and to facilitating their progression into academic and research independence. SRA should therefore consider making the necessary adjustments in its strategy, focus, and implementations in the very important area of *Capacity Building*. It could provide more opportunities and perspectives for the creation, retention and attraction of excellent young researchers, namely Slovenians returning from abroad, non-Slovenians from abroad or researchers wishing to stay in the country.

Implementation: Funding Instruments and Evaluation in search of excellence

The Evaluation Committee has been very impressed by the dedication of the Slovenian Research Agency to the pursuit of high quality standards and good practices in operating their portfolio of activities. The peer review and selection process at the Agency has gone through major developments and improvements. However, the Committee noted that the peer review system used by the SRA – although very efficient now – is perceived to be over-automated for the intended purpose of comparing proposals for their scientific merits and potentials. The Committee fully recognises the value of automation and metrics, not only for increased efficiency but also in promoting and safeguarding objectivity. However, it appeared to us – through our various consultations and discussions – that during the process excessive reliance has been made on *bibliometric* indices, and their role in determining eligibility *thresholds*. We acknowledge the commitment of the SRA leadership to continuous improvement and trust that their ongoing efforts towards moderating the role of quantitative measures as auxiliary tools will change this perception.

The Committee is of the opinion that excessive reliance on automation and quantitative measures in peer review is prone to higher risks of promoting conservative attitudes and outcomes for identification and promotion of new areas and ideas. Scientific

conservatism can have negative implications for a smaller country such as Slovenia especially in support of the ambitious national strategy whose success would depend on research dynamism and boldness in capacity building.

In this regard, the Evaluation Committee also noticed a general sense of modesty in the expressed levels of ambitions set and expected from the best scientists of the country who have indeed the real potential of competing at international levels on given areas. Although it is unrealistic to expect Slovenian science to push the frontiers of all disciplines and areas, it is very reasonable to hope and expect that the current European Research Area provides a larger and richer context in which innovative and groundbreaking ideas and proposals may emerge through Slovenian scientific communities. There may be interplay between the degrees of the mentioned conservative framework and the expected levels of ambitions.

Funding instruments of SRA are comprehensive and efficient from an administrative point of view and allow for very simple financial management rules (i.e. the fixed grant values). However, the notion of collaborative research projects of various sizes and objectives could be further promoted, especially in order to reinforce multidisciplinary research and public-private partnerships. The Committee would therefore recommend the agency to consider introducing more flexibility in their granting rules to increase responsiveness in research project management to variable needs and requirements.

The young researchers' funding line within the current portfolio of SRA activities seems to be appreciated very much by its intended clients. In order to further contribute to Capacity Building as a crucial prerequisite of competitiveness, the Agency should consider increasing the volume of the young researcher instrument, for example, through partnerships and joint funding with other bodies such as the public research institutions or with the private sector.

International Agenda

The Committee came to the conclusion that the SRA could be more ambitious in promoting and facilitating collaborations between Slovenian researchers and individuals or groups outside of the country. Once again, this could be the result of the ministerial heritage to the Agency through which top-down strategy and priorities are defined including the types and nature of collaborations.

The Committee noted that significant attention is provided in establishing the rules of procedures (e.g., RD-3, Section V) for guiding and streamlining international scientific cooperation. However, within the Agency's portfolio, international collaborative research is explicitly promoted in the backdrop of existing bi-lateral and multi-lateral government agreements. In this regard, promotion and funding of open collaborative research does not seem to be facilitated.

The Committee is of the opinion that in general, both well-established scientists and high-achieving early-career researchers, know best who they would need and want to collaborate with and in which country. It is to the advantage of the national research and education agenda, if greater flexibility is provided to empower and support the researchers to engage themselves and their students with other groups as they deem necessary.

The Committee also concluded that the Slovenian research system in general, and the SRA system in particular, do not appear as "welcoming" as they might intend towards excellent scientists from abroad or to Slovenians returning to their country. The Committee is of the opinion that the cultural openness of the Slovenian nation can be better translated into policy and regulatory arenas and practices in order that the national research systems can take more advantage of incoming foreign researchers and Slovenians returning from abroad. This will evidently contribute to capacity building requirements mentioned above.

2.

Introduction and Context



2.1 Background

At the request of “*Javna Agencija za Raziskovalno dejavnost Republike Slovenije (ARRS)*” or the *Slovenian Research Agency (SRA)* – a Member Organisation of the European Science Foundation (ESF) – an agreement was reached in early 2011 between the two organisations to plan and implement an independent evaluation study of the SRA as a funding agency in the European context. It was requested to conduct the evaluation during the autumn and to submit the evaluation report before the end of 2011. In this document the English abbreviation SRA is used when referring to the Slovenian Research Agency although the formal abbreviation used by the agency is ARRS.

A Memorandum of Understanding (MoU) was signed between the two parties setting out the main terms of agreements and a six-member Evaluation Committee was constituted. Based on the nature of the request, and the terms of agreement in the MoU, a work-plan was prepared at the ESF in order to lay out the details of the evaluation exercise, the terms of reference and the time-line of its implementation.

The Slovenian Research Agency was established through amendments to the Research and Development Act in November 2004 by the Government of the Republic of Slovenia. The total SRA budget in 2010 was 176 million Euros, representing about 58% of the total national public Research and Innovation funding (with European structural funds included in the total government funds)¹.

The conception and commissioning of this independent evaluation by the SRA is timely and commendable given the following facts:

- SRA is a relatively young organisation that has not been evaluated since its establishment in 2004;
- The portion of the national public sector research and innovation funding managed by the SRA is quite significant as compared to other similar organisations in Europe (more than 50% in 2010);
- Particular economic difficulties and volatilities at the European and global levels and its impact on and requirements for funding of research and innovation;
- The advent of the European Commission’s next Research Framework Programme with impressive requirements for promoting innovation and public-private partnerships in research funding;
- National economic and political context: uncertainties on the stability of government funding of the SRA call for bringing to light the position, role and added value of the SRA.

Sections 2.2, 2.3 and 2.4 of this Chapter provide the Terms of Reference, summary of the process and the makeup of the Evaluation Committee, respectively. Section 2.5 illustrates an outline of the national context in which the Slovenian Research Agency operates. In Section 2.6 a benchmarking of the SRA is done in relation to approximately 20 similar organisations in Europe using the results of the Peer Review survey conducted by the ESF in 2010. Chapter 3 provides the outcome of the Evaluation based on the Terms of Reference, the documents provided by the SRA, the site visits and the deliberations and conclusions of the Evaluation Committee (see Figure 1).

1. Self-Evaluation Report dated 17 October 2011 submitted by the SRA

2.2 Terms of Reference

The overall goal of the Evaluation was to identify strengths and recommendations for further improvement related to the mission, structure, portfolio and performance of the SRA. In particular the request was to conduct the evaluation using the following items:

1. Mission, strategy and scope of operations of the SRA in both national and European contexts;
 - a. Appropriateness of the mission and strategy of SRA and the way these are defined in the national context of Science and Research education as well as in ERA and beyond;
 - b. Appropriateness and enforcement of the implementation plans in relation to the defined mission and strategy;
2. Quality and Effectiveness of SRA's Funding Instruments (from Call for Proposals to selection process and evaluation methodologies and practices) in relation to their mission and scope of operation;
3. Quality and availability of IT infrastructure and support system required in relation to items 1-2;
4. Compatibility and effectiveness of the SRA staff to their organisational portfolio and mandate.

2.3 Process and Timeline

A conceptual framework for the implementation of the evaluation exercise is illustrated in Figure 1, while the agreed timeline and main steps of the activities are shown in Figure 2 and Figure 3 below.

In order to ensure that the assessment is informed as much as possible by the views and perspectives of all relevant clients and stakeholders in Slovenia, the Evaluation Committee invited representatives of various relevant groups to provide their views and impressions on given aspects of the strategy and operations of the SRA. During the site-visit to Ljubljana (23-25 October 2011) the Committee met with various representatives from six groups as the main stakeholders and clients, in addition to the Director and Deputy Director and staff members of the SRA. These groups are (Figure 1):

1. Representatives from the Ministry responsible for the Agency
2. Representatives of the Governing (Management) Board of the Agency
3. Representatives of the SRA's Scientific Council
4. Representatives of the Rectors Conference
5. Representatives of the SRA's Scientific Standing Bodies
6. Sample representatives of the Scientific Communities. Both early-career and well-established eminent Slovenian scientists were identified by the ESF and invited to provide feedback in writing or in person.

The SRA made available 27 Reference and Background documents (including 11 web-links, 13 PDF files and 3 PowerPoint presentations). These were grouped under four categories: (A) General Background including strategy, policy, annual reports, etc.; (B) Peer Review and Evaluation; (C) Information System; (D) Human Resources. Under each of the categories, entries were grouped as

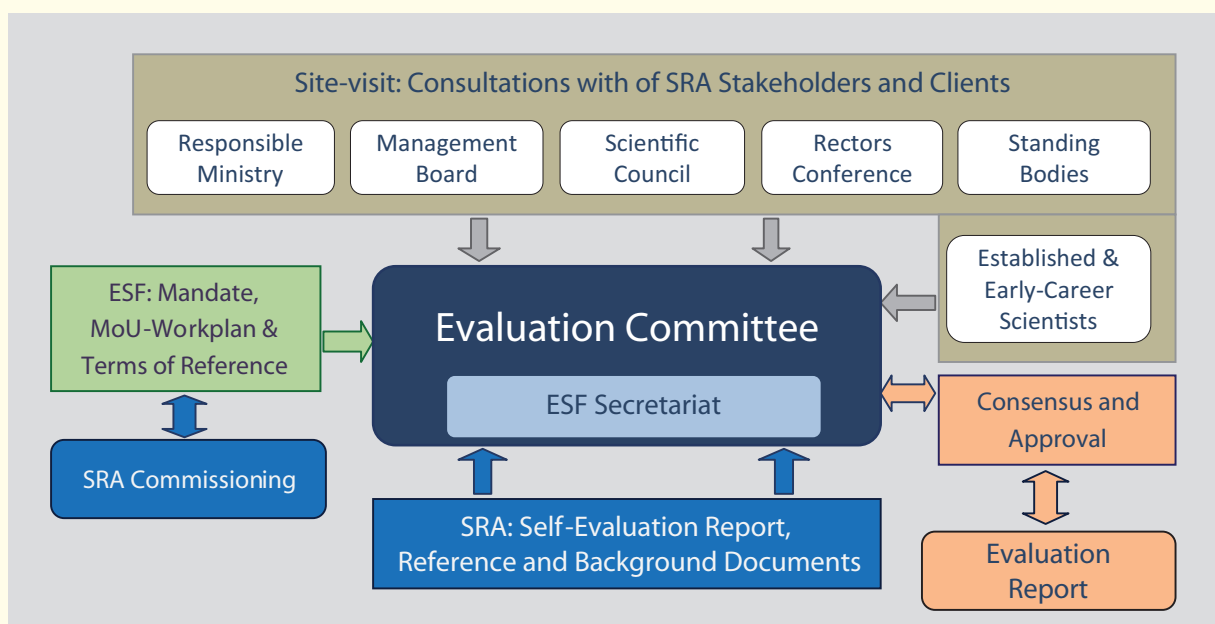


Figure 1. Conceptual Framework for the Evaluation

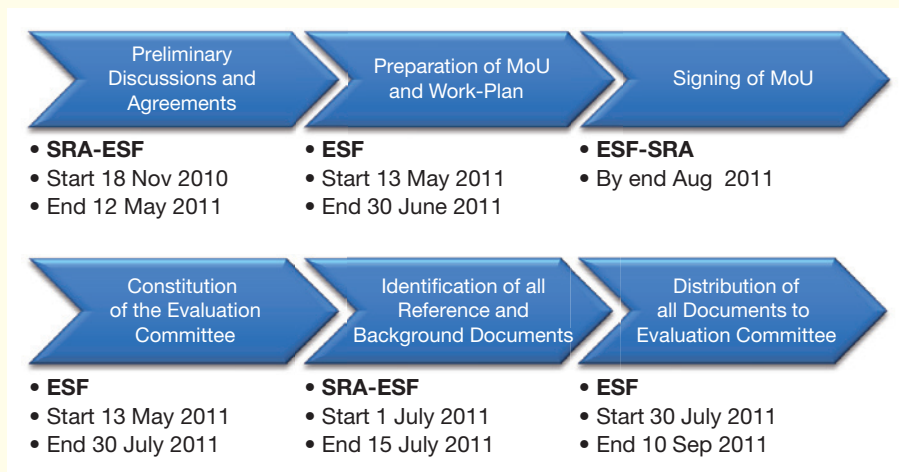


Figure 2. Preparatory work leading to the first meeting of the Evaluation Committee



Figure 3. Work leading to site visits and EC consensus meeting

Background Documents – destined to be directly relevant and needed for the review – and Reference Documents, which were to provide more detail about the context, the organisation and its operations.

Furthermore, the Committee requested the SRA to prepare a Self Evaluation Report according to a suggested template. Based on the Terms of Reference and using the Self Evaluation Report, Reference and Background documents and information gathered through the consultations with the various groups, the Evaluation Committee started their discussions and deliberations immediately after the site-visit when they agreed on the main areas of strengths and points of improvement. These were later elaborated into this report. Following the approval of the Committee, the final draft was sent to the SRA management in order to ensure that the report was free of any factual error or major misunderstanding. This step was not to invite questioning of the judgments and conclusions made by the Committee but to allow an overall check for the integrity of the information included and used.

2.4 The Evaluation Committee

The membership of the Evaluation Committee is provided in Table 1 below. The Committee was constituted by the ESF Chief Executive, Professor Marja Makarow, as the responsible authority for the evaluation exercise. The Committee was chaired by Mr Martin Hynes.

ESF staff member Dr Farzam Ranjbaran, Head of Corporate Science Operations Unit, coordinated the evaluation exercise and Mrs Veronica Schauinger-Horne, Senior Personal Assistant to the ESF Chief Executive provided administrative support.

2.5 National and Organisational Contexts

In order to contextualise the evaluation, some of the main facts and figures about the Slovenian research and innovation system in general and the positioning of the Slovenian Research Agency in particular are provided in this Section.

Dr Philippe Freyssinet

- Deputy Director General, Agence Nationale de la Recherche (ANR), Paris

Mr Martin Hynes

Chair of the Evaluation Committee

- Director, Irish Research Council for Science, Engineering and Technology (IRCSET)
- Outgoing Chair, ESF Finance and Audit Committee

Professor Toivo Maimets

- Professor, University of Tartu, Estonia
- Chairman of the Council, Estonian Science Foundation

Professor Peter Nijkamp

- Former President, Governing Board, Netherlands Organisation for Scientific Research (NWO) and former President EUHORCs (2005-2007)
- Professor in Regional Economics and in Economic Geography, Free University Amsterdam

Professor Pär Omling

- Former Director General of the Swedish Research Council
- Professor of Physics, Department of Solid State Physics, Lund University

Dr Ingrid Wüning Tschol

- Senior Vice-President, Robert Bosch Stiftung, Stuttgart
- Member of the European Research Area Board

Table 1.

Membership of the Evaluation Committee and Assignment of Lead Evaluators

The National Assembly of the Republic of Slovenia has recently adopted an ambitious and comprehensive Resolution on Research and Innovation Strategy of Slovenia (RISS) 2011-2020. It sets out as its main objective “*To establish a modern research and innovation system that will allow for a higher quality of life for all through critical reflection of society, efficiency in addressing social challenges, increased value added per employee, and assurance of more and higher quality workplaces*”. It envisages that by 2020, a responsive research and innovation system, co-created by all stakeholders and open to the world, will be established.

Some of the key statements, facts and figures extracted from the *RISS Resolution* [RD-1], as well as the Self-Evaluation report prepared by the SRA, are outlined below and in the following Sections:

1. Through the implementation of the *RISS*, the research institutions will have a strategic, financial and managerial autonomy, but also responsibility for the execution of their socially relevant missions.
2. The government will place research and innovation at the heart [of] its policies and [will] assure adequate financial support.
3. As soon as 2012, 1 % GDP of *public investment* will be allocated to research and development reaching 1.5% by 2020.
4. Slovenia is ranked 29 on Human Development Index among developed countries [Human Development reports, United Nations Development Programme, 2009; source: <http://hdr.undp.org/en/statistics/>]
5. Ljubljana is ranked 81 among 215 cities on the quality of life scale; [source: <http://www.mercer.com/home>]
6. The European innovation scoreboard through 2008 ranks Slovenia among the innovation followers with most indicators close to the European average.
7. Ranking of the world’s most innovative countries puts Slovenia in 24th place according to the indicator of successfulness of innovations, and first among the countries of Central and Eastern Europe [A new ranking of the world’s most innovative countries, Economist Intelligence Unit Limited 2009, source: http://graphics.eiu.com/PDF/Cisco_Innovation_Complete.pdf]
8. The number of scientific publications resulted from public investment in R&D puts Slovenia above the EU27 average, and just below this average for the economic impacts of science. In the period 2004-2008, Slovenia produced 5,840 publications per million inhabitants in journals indexed in the ISI bibliographic databases, ranking it 7th regarding publications in that period in the EU; this amounts to 155% of the EU average. Regarding the number of citations per million inhabitants in the same period, Slovenia holds 13th position among EU countries with 18,062 citations per million inhabitants reaching 95% of the EU average.
9. Regarding Impact Factor, i.e. the average number of citations per publication, Slovenia is placed in 22nd position among EU countries, with IF 3.09 and 61% of the EU average. With 62 highly cited publications per million inhabitants in the period 1998-2008, Slovenia reached 151% of the EU average and the 13th place in the EU [A more research-intensive and integrated European Research Area, Science, Technology and Competitiveness. Key figures report 2008-2009, EC, 2008, ISBN 978-92-79-10173-1, http://ec.europa.eu/research/era/pdf/key-figures-report2008-2009_en.pdf]
10. Slovenia, with a population of 2 million (i.e., 0.4% of the EU population), receives 0.6 % of all the allocated EC funds.
11. In 2008, there were 7032 FTE (Full-Time Equivalent) researchers, of whom 3058 (43 %) were in the business sector, 2156 (31%) in the state sector (public research institutions), 1795 (26%)

in the higher educational sector, and 23 (0.33%) in the non-profit private sector.

Key Players at the national level

1. Responsibilities for research and innovation policy are shared between the Ministry of Higher Education, Science and Technology (MVZT), the Ministry of Economy (MG) and in part by the Government Office for Development and European Affairs (SVREZ) and the Government Office for Local Self-Government and Regional Policy (SVRL).
2. The Ministry of Economy implements its programmes through the Public Agency for Entrepreneurship and Foreign Investments (JAPTI), the Public Agency for Technological Development (TIA) and the Slovenian Enterprise Fund (SPS). MVZT delegates the implementation of most of its measures to the TIA and the Slovenian Research Agency (SRA).
3. The subject is also covered by two advisory bodies of the Government of the Republic of Slovenia, the Council for Science and Technology (SZT) and the Competitiveness Council (CC).
4. The key public institutions in Slovenia dealing with research are:
 - University of Ljubljana, the largest University in Slovenia (established in 1919)
 - Slovenian Academy of Sciences and Arts (established in 1938)
 - Jožef Stefan Institute, the largest Public Research Institute (established in 1949)
 - University of Maribor, second largest University in Slovenia (established in 1975)

SRA Clients

- In 2010, 42.4% of SRA funding was given to Universities and 53.7% to Research Institutes
- SRA and key national Research Organisations (ROs).
- **4 Universities**
 - University of Ljubljana (26 faculties)
28.7 % of SRA funds
 - University of Maribor (12 faculties)
7.5 % of SRA funds
 - University of Primorska (7 faculties)
2.8 % of SRA funds
 - University of Nova Gorica (6 faculties)
1.4 % of SRA funds
- **15 Public Research Institutes, with the largest being:**
 - The Jožef Stefan Institute
20.2 % of SRA funds
 - National Institute of Chemistry

6.8 % of SRA funds

– National Institute of Biology

2.7 % of SRA funds

- **Scientific Research Centre of the Slovenian Academy of Sciences and Arts**
7.4 % of SRA funds
- Other relevant institutions are: 22 private higher education institutions; about 100 private (non-profit) research institutes; and about 300 research units in the business sector
- Almost 14,000 researchers are registered in the database of the SRA with 4800 being active, i.e. participated in public calls, research projects or programmes, etc., in 2010.

SRA Office and Governance

- The total SRA budget in 2010 was 176 M€, with a share in total public R&I funding of about 58 % (with European structural funds included in the total government funds).
- The Agency has 52 full-time employees, among them 6 holding a PhD, 4 with specialisation and Masters of Science, and 34 with university degrees, organised in 5 departments and 3 services. The SRA, with a total budget of approximately 180 M€, consumes 2.6 M€ for its own operations (1.4%).

The **Management Board** guides and oversees the entire work of the Agency. It has seven members; four representing the Government, two the scientific community (RI, Universities and the Academy of Sciences), and one representing the Chamber of Commerce and other “users”. The members are nominated by the Government with a five-year mandate.

The **Scientific Council** is the highest professional and advisory body of the Agency. The Scientific Council has six members representing all research fields (natural, technical, medical, biotechnical, social sciences, and humanities); the members are proposed by the Council of Science and Technology and nominated by the Minister of Science with a five-year mandate.

The **Director** represents the Agency, organises and manages the work and operations of the Agency and performs other management duties. The Director is elected by the Management Board and nominated by the Government with a five-year mandate. The Director reports to the Management Board.



Figure 4. Organisational Structure of the Agency

Portfolio of activities²

The research funding of the SRA is used to run several funding instruments distributed as illustrated in Figure 5 below:

- **Research programmes** (Structured Core Funding), with a volume of 58.9 M€ in 2010 are the largest of the portfolios, representing comprehensive areas of research for which long-term relevance (10 years) at the national and global levels are expected. They are performed by programme groups within the public research institutes (53%), universities (45%) and in private institutions (less than 2%).
- **Research projects**, with a volume of 31.3 M€ in 2010, are the second largest part of the portfolio. They cover original experimental and/or theoretical work aimed foremost at acquiring new knowledge on the underlying bases of phenomena and observable facts. The Call for proposals for research projects in 2010 was implemented in a two-phase manner, with approximately 1/3 of applicants entering phase II by invitation directly (based on an analysis of their five-year track record). Researchers who applied for the position of project leader (PI), with the exception of post-doctoral project candidates, were required to have achieved a set of targets according to the eligibility criteria below:
 - The number and quality (impact factor) of publications,
 - The number of true (= non-self) citations, or patents,

– The volume of cooperation with the business sector (or with other public funders).

From 906 applications received during phase 1 of the 2010 call, 358 were selected for phase 2 by reviewers and 153 applications arrived during phase 2 directly by invitation, making a total of 511 applications (56%) in phase 2. 270 projects were selected for funding, making a 53% success rate for phase 2 and an overall success rate of 30%.

- **Target research programmes** provide research support to ministries and other state authorities in core development tasks that help to improve competitiveness, flexibility and innovation in Slovenia.
- The **Young Researchers Programme** funded a total of 1,425 PhD students providing them with salary and funds for their PhD studies and research costs.
- **Research infrastructure programmes** provide the budget for co-financing of research infrastructure, thus enabling modernisation of equipment and improved cooperation between universities, research institutes and business entities, while at the same time promoting better utilisation and streamlining. Funding includes large research equipment and its operation, participation in international research infrastructures, and maintenance of natural sample collections.
- **Institutional funding** (known as Founder's obligations) is based on obligations of the Government as founder of public research institutes to cover basic costs of the infrastructure and overheads.
- The scientific meetings (conferences) item covers (co)financing of scientific meetings taking place

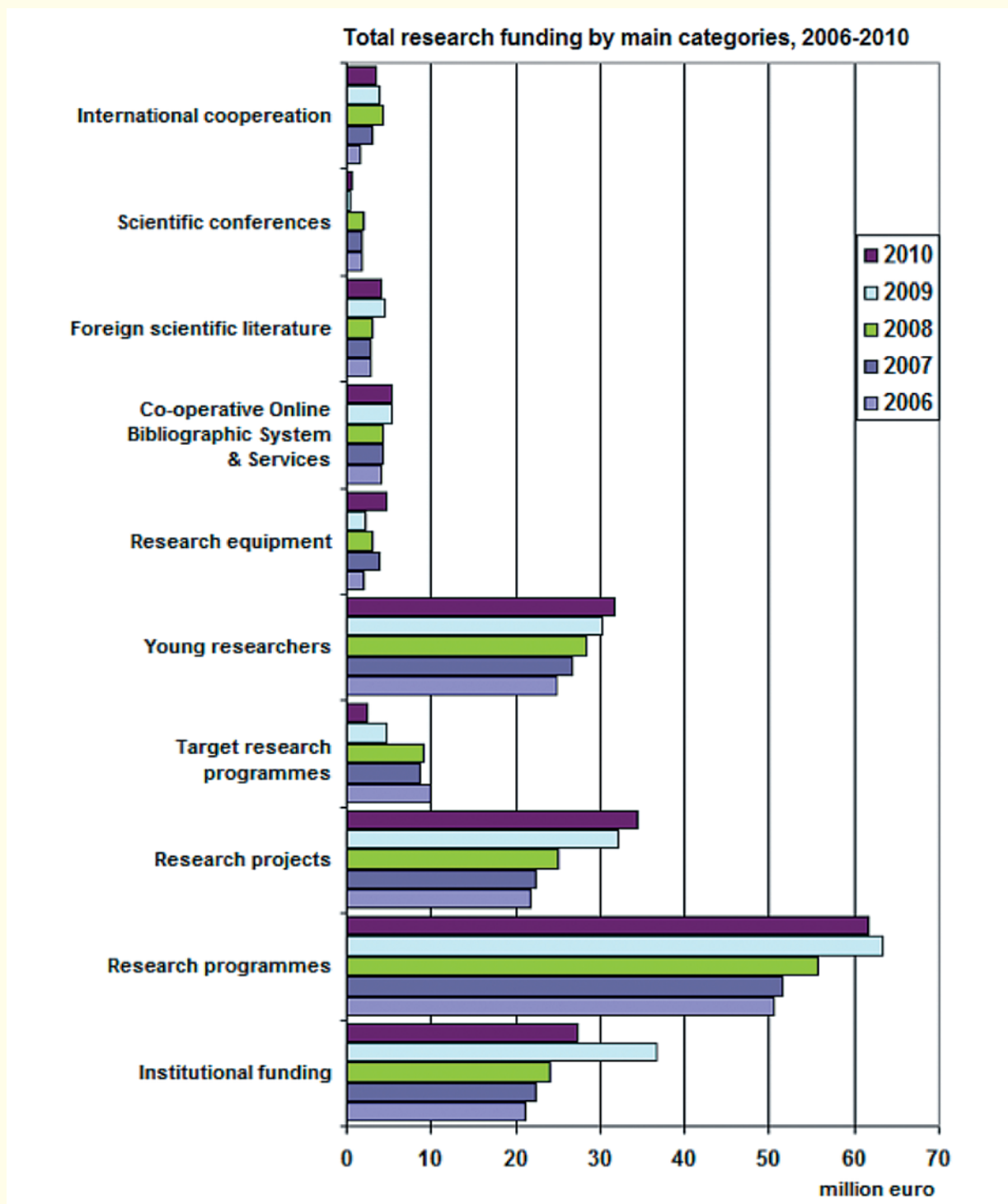
2. Excerpts from the Self Evaluation Report

in Slovenia. In 2010, 115 applications were received and 92 meetings (80%) were co-financed.

- International cooperation covers bilateral and multilateral scientific research cooperation with enhanced inclusion in the international and European research and higher education area, with the aim of increasing international cooperation and participation in Framework

Programmes of the European Union. In 2010, 605 bilateral mobility projects involving 29 countries were active. The Agency promotes participation of Slovenian researchers in calls for proposals under the 7th Framework Programme (FP7) by providing a flat rate financial incentive (1000 € for participants and 2500 € for coordinators of international consortia) to applicants of formally complete submissions that achieved at least 51% of points possible in the evaluation; approximately 350,000€ are distributed in this way annually.

Figure 5.
Funding distribution across SRA Funding Instruments



2.6 SRA as a European Research Funding Organisation

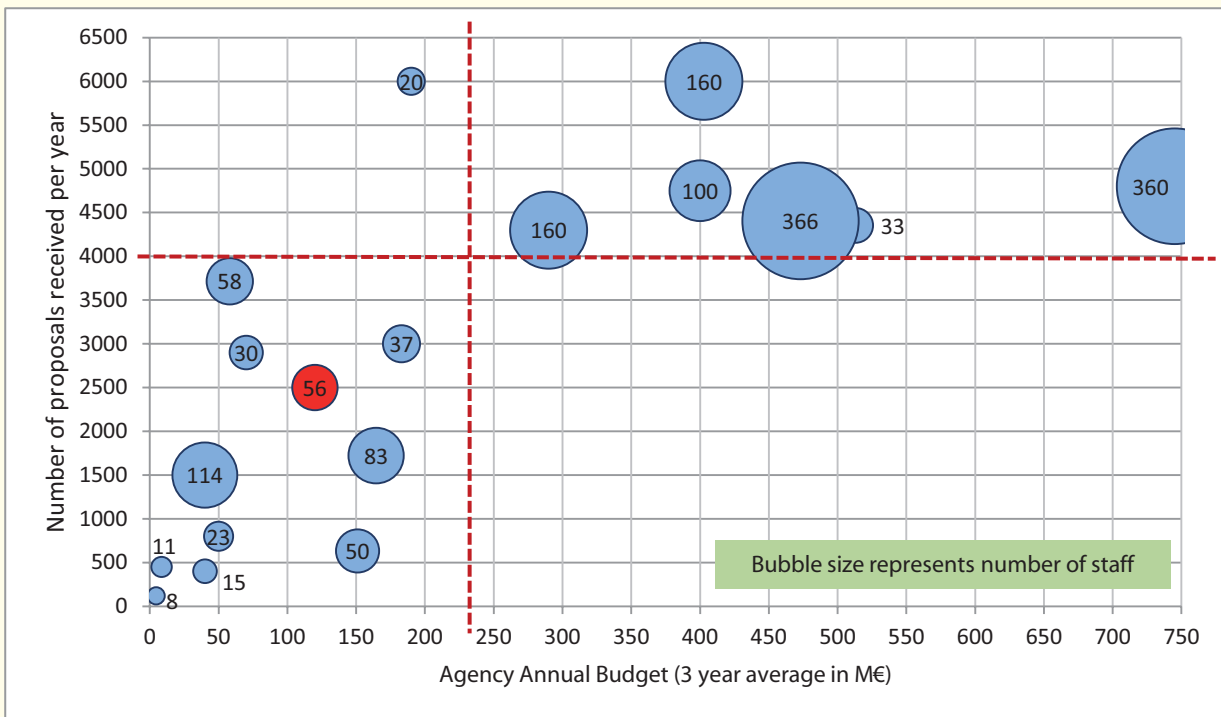
In preparation for the development of the European Peer Review Guide published by ESF in spring 2011, a comprehensive peer review survey was conducted across the research funding and research performing organisations in Europe and beyond. The aim of the Survey was to benchmark existing peer review practices from a multitude of perspectives. As part of the survey data, the 30 responding organisations also provided key information about their portfolio and operations. In this Section some of the main data provided by a subset of the responding organisations are used to illustrate the European context in which SRA operates. These are 20 European research funding organisations comparable to SRA in their overall role. The data used from the survey comprises: three-year average annual budgets of the organisations dedicated to merit-based research funding; number of staff; number of proposals received and number of proposals funded annually. With the agreement of the SRA, the data points corresponding to their organisation shown in Figure 6 to Figure 10 are highlighted using a different colour³. In these Figures, the data for the 20 selected organisations (including SRA) in 19 European countries are included. Furthermore,

in order to make the context more meaningful, additional country-related parameters are used to normalise the aforementioned variables. These additional parameters are⁴: National R&D investment in the public sector in 2008 and the number of National Full-Time Equivalent (FTE) Researchers in the Public Sector.

In Figure 6 more than 18 organisations can be seen as clustered into two main groups in terms of their annual budgets and number of proposals they receive (in this diagram two organisations whose data fall very differently from the others are removed as outliers).

Figure 10 illustrates an interesting clustering of agencies. The first group comprises 10 agencies whose budgets per staff appears to be a function of the ratio of their country's national public R&D budget per public FTE researcher. The second group comprises the other 10 agencies for which this trend is not apparent. SRA coordinates fall at the mid-range of the first group.

Figure 6. Proposals received versus annual budget and number of staff (two outliers removed)



3. Although the overall aggregate data resulting from the survey is in the public domain, ESF has committed itself not to disseminate individual responses at large.

4. Source: Innovation Union Competitiveness Report 2011, European Commission, and OECD

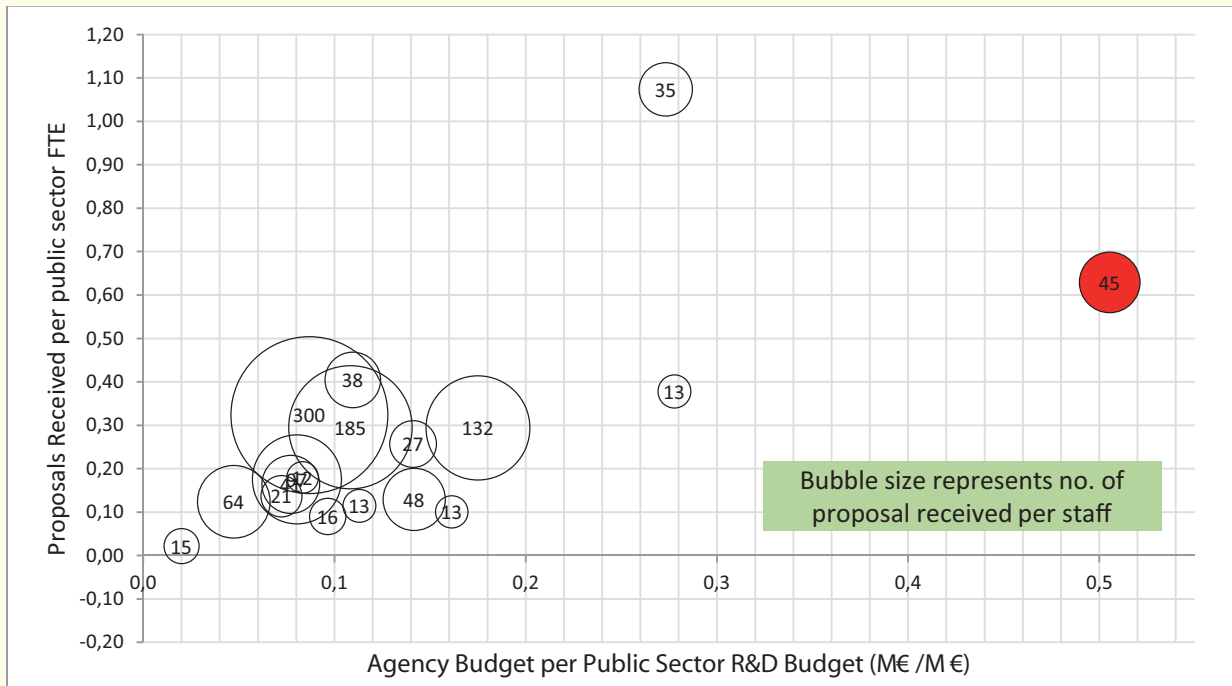


Figure 7. Number of proposals received per 1000 public FTE researcher versus annual agency budget per public sector R&D intensity and number of staff (two outliers removed)

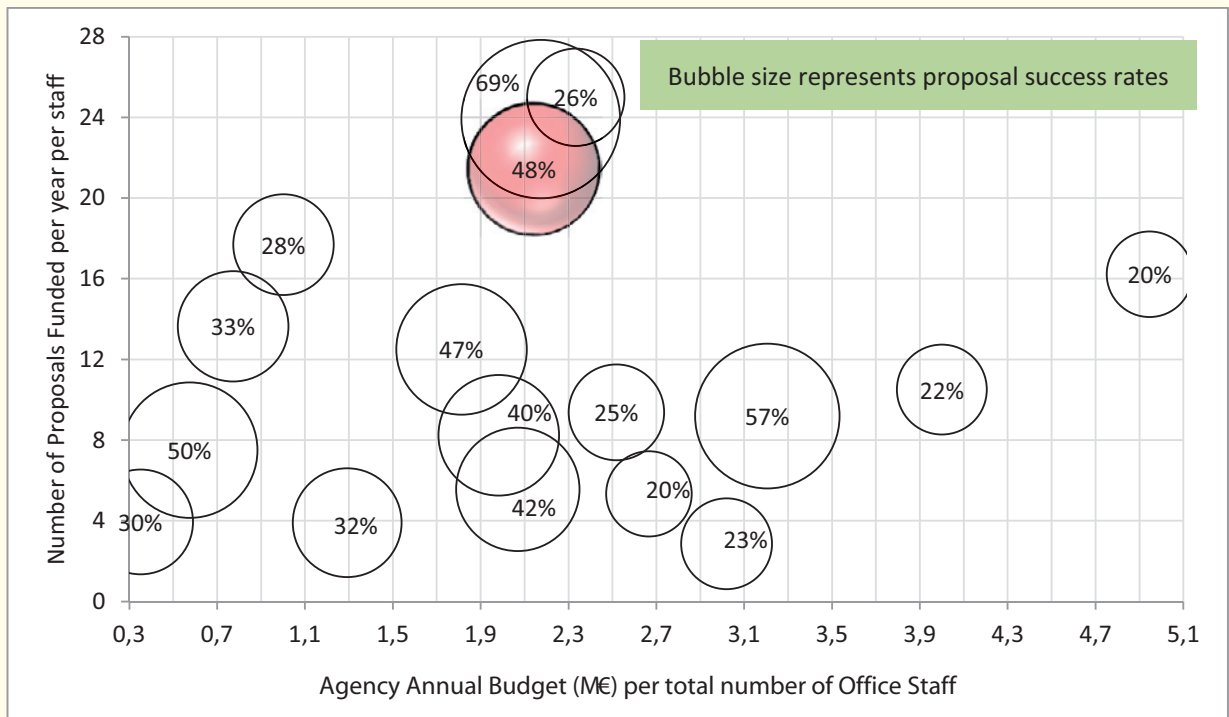


Figure 8. Number of proposals funded versus agency budget normalised with number of staff members (for 17 organisations and 3 outliers removed)

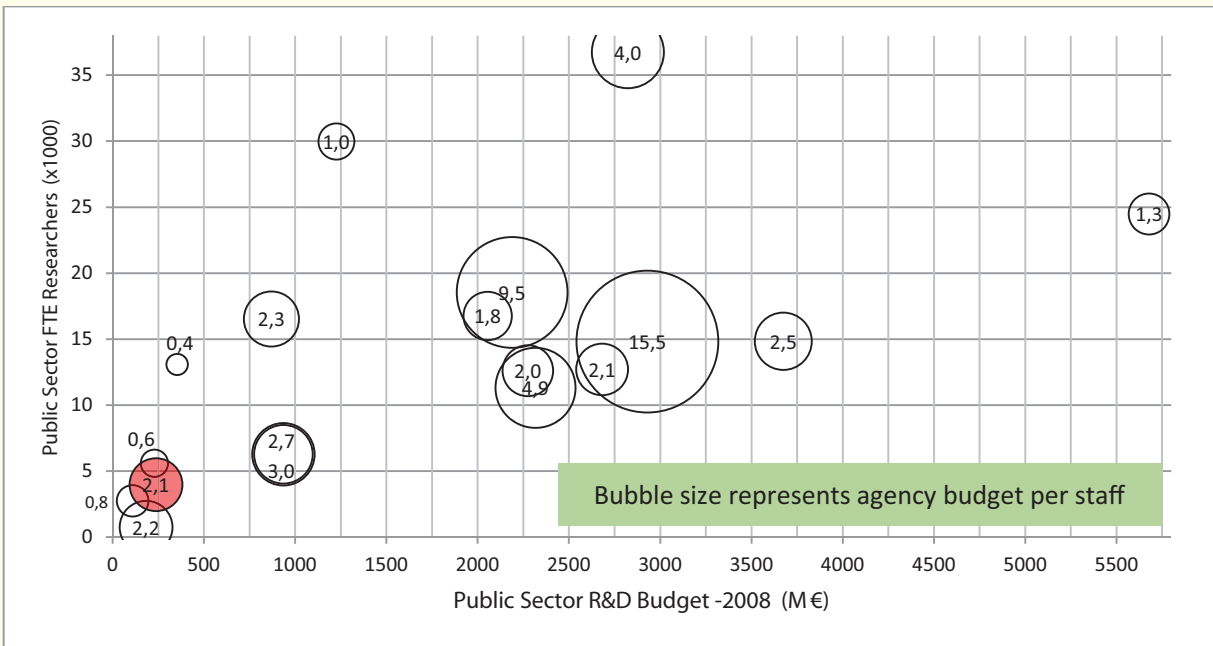


Figure 9. Public sector FTE in research versus national public R&D budget (18 organisations 2 outliers)

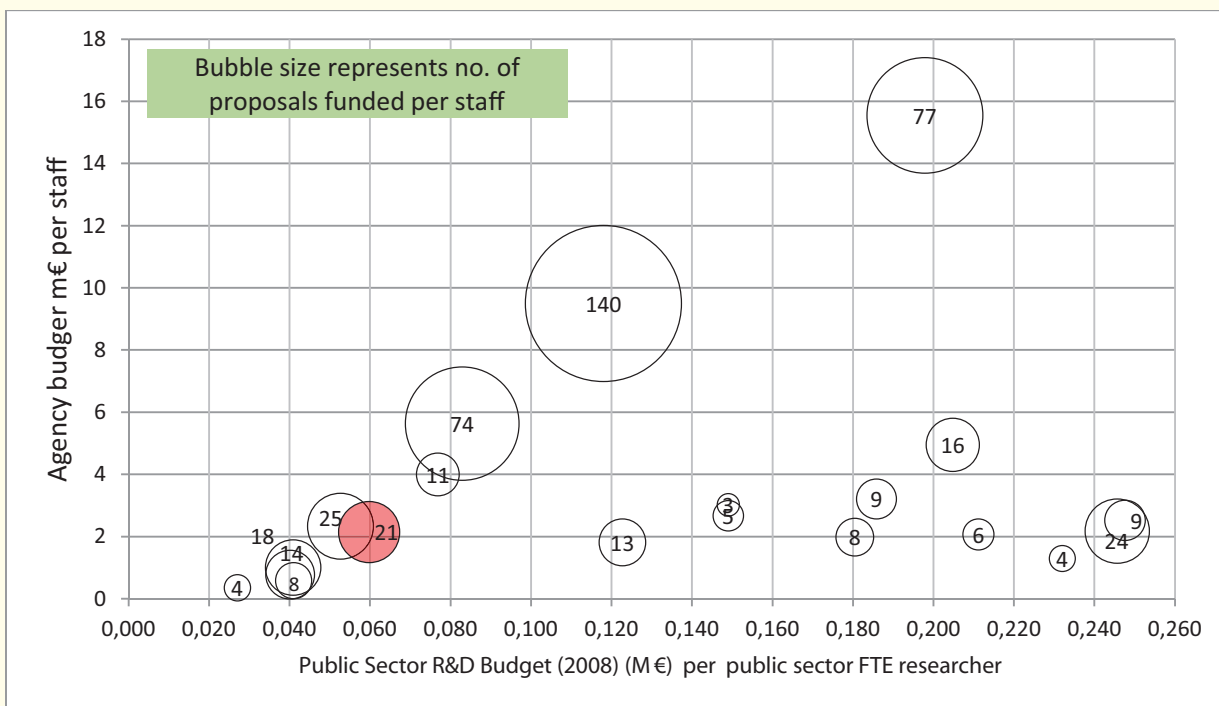


Figure 10. Agency budget per staff versus public R&D budgets per public FTE researcher (20 organisations)

3. Outcome of the Evaluation



The Evaluation Committee was very impressed by the overall performance of the Slovenian Research Agency in delivering high-quality value added to the Slovenian Research system. The Committee has identified three main areas where opportunities may exist for the Agency to further enhance its mission, operations and added value for Slovenia and Europe. These three main areas are:

- Mission and Strategy
- Implementation: funding instruments and evaluation in search of excellence
- Internationalisation

The following Sections illustrate the Committee's appreciation of the strengths of SRA and make suggestions to explore opportunities for further improvement according to the three main areas listed above. In keeping with the Memorandum of Understanding, which sets out the agreed scope of the Evaluation, these three main groups are addressed throughout the relevant items of the Terms of Reference in the following four Sections. Other "peripheral" observations and recommendations not directly related to the three main areas of concern above, are also included under the relevant Terms of Reference as appropriate.

3.1 Evaluation of the Mission, Strategy and Scope of Operations of SRA

The Slovenian Research Agency was established by the Government of the Republic of Slovenia through amendments to the Research and Development Act in November 2004. Prior to this, the responsibility of developing research and innovation strategy and distributing public research funding in the country had been with the Ministry of Higher Education, Science and Technology.

In seven years, the SRA has been extremely effective in establishing itself as a *modern* and *efficient* funding agency comparable to well-established European research councils and funding organisations which have the advantage of a much stronger heritage and existing activities.

For valid reasons the government has been fully and closely engaged in determining the mandate and strategy of the SRA and in providing the necessary investments in good proportion to the portfolio of the agency. The ten-year Strategy Plan adopted in early 2011 for Research and Innovation in Slovenia until 2020 commits to increasing the public funding of research to 1% of GDP as early as 2012 and to 1.5% GDP by 2020. This ratio was 0.66% in 2009 and hence the Agency now has a visionary and proactive agenda for the years to come. However, it may now be appropriate to provide increased autonomy to the Agency to play a more active and enabling role for the setting of the national agendas and priorities for research, innovation and higher education in cooperation with the universities, research institutes and other related governmental agencies.

Furthermore, considering the two ambitious and visionary strategy plans for Higher Education and

Research and Innovation (2011-2020), strong synergy between the two is needed. SRA is in a good position to assume an enabling role in that direction, for example, in capacity building. Although there seems to have been a strong trend to increase the number of researchers in the country i.e., by 51% during 2002 to 2008⁵, the realisation of the two agendas in parallel calls for a strong centrally positioned and appropriately mandated agency such as the SRA.

The Committee has noted the following commendable accomplishments of the Agency in terms of Mission, Strategy and Scope of Operation:

- The attention and conscious efforts that have been made in creating an objective and transparent agency.
- The great efforts that have been made in creating very well-documented and elaborate rules of procedures for the various aspects of the evaluation and peer review, as well as in defining the roles and responsibilities of the various bodies, especially those that have been translated into English. For example: RD-3: Rules on the Procedures of the (co) financing and Monitoring of Research Activities Implementation, RD-4: Rules on the work of standing bodies and working panels in research, and RD-5: Methodology used for the peer review and assessment.
- Gender balance across the projects funded by the SRA is strong. The Agency seems to be conscious and proactive in maintaining this balance and improving it in other areas such as in their research programmes.
- Considering the Agency in the context of comparable European organisations, Figure 6 (Section 2.5), illustrates the position of SRA relative to other organisations using the absolute values for the number of proposals processed and annual budgets of the organisations. This “raw” comparison places SRA within the first 11 or 12 organisations (from 18). However, as seen in Figure 7, if these variables are normalised, for example by dividing the Agency annual budgets by the corresponding national public sector R&D budgets and by dividing the number of proposals received annually by the number of public sector FTE researchers in the countries, a different landscape appears in which the SRA is positioned at the highest end in terms of budget and second to highest in terms of proposals received (among 18 organisations). The foregoing observation is a testimony to the important role the SRA has nationally in funding research.

5. <http://news.sciencemag.org/scienceinsider/2011/05/ten-year-plan-aims-to-make-slove.html>

Opportunities for further improvements

The Evaluation Committee recognises that the Slovenian Research Agency has been very successful in its initial mission to steer the funding of the national research system over a decade and within a strongly changing institutional environment, while proactively seeking international standards and good practice. The Committee also came to the realisation that the process of strategy definition and evolution available to the SRA could make better use of the potentials of the relevant bodies and communities mainly in Slovenia, but also elsewhere in Europe. Within the context of dynamic scientific landscapes and priorities, their projections and demands onto the national scientific strengths and potentials, while confronted with possible variations of the political and socio-economic agendas, it is necessary to ensure that the strategy definition, evolution and implementation enjoy not only scale and robustness but also vitality and responsiveness. To this end, the Committee is of the opinion that the Agency could benefit from enforcing more coherence in identifying and integrating relevant inputs not only vertically, through interactions with the various ministries and government bodies, but also horizontally, spanning for example, universities, research institutes, and mandated scientific bodies, the Agency for Technological Development (TIA) as well as other key players in the Public and the Private Sectors.

To maximise its potential for added value within the framework of the Slovenian Research and Innovation Strategy (2011-2020), for example, by strengthening its mandate in favour of innovation will require some adaptation to the current strategy and operations of SRA which are primarily designed for academic research management.

Through its consultations with the representatives of the Slovenian early career researchers, the Evaluation Committee observed a universal praise for the SRA's funding line dedicated to young researchers. However, criticisms were also heard that the current Slovenian research system is insufficiently open to attracting excellent young researchers and to facilitating their progression into academic and research independence. SRA should therefore consider making the necessary adjustments in its strategy, focus, and implementations on the very important area of *Capacity Building*, i.e., towards providing more opportunities and perspectives for the creation, retention and attraction of excellent young researchers namely, Slovenians returning from abroad, non-Slovenians from abroad or researchers wishing to stay in the country.

- In particular, the Committee has noted:
1. Although in comparison to other similar organisations in Europe, the Slovenian Research Agency has a real determining role and volume of operation in relation to its national R&D intensity within its current mandate and focus, there is not a clear process accessible to the science communities for the gathering of advice and influencing the strategy definition and evolution.
 2. The ministries engaged in research and science, and thus the country as a whole, may benefit more effectively from SRA by having its role and authority reinforced and, if needed, expanded so that it can contribute more concretely to strategy and priority setting. Evidently such an expansion of responsibilities should be accompanied by the allocation of the necessary additional resources such as budgets and qualified scientific and administrative staff.
 3. The full potential of the mission and portfolio of SRA in influencing and promoting innovation across science communities in Slovenia is not fully exploited considering the role of the SRA as the nation's *research council*.
 4. Contributions to *capacity building*, and in particular the degree of synergy and integration with the higher education activities and training of young researchers, could be further enhanced.
 5. There would be great benefit from a national Forum for dialogue on priority discussions through which all relevant perspectives from the various communities could be heard and considered when defining or updating strategy and priorities.
 6. The national research and innovation system would benefit from an authoritative board of eminent scientists and leading scholars from all fields of science, and ideally with international observers, to advise on strategy and priority setting. The Committee came to the conclusion that such a board would be best placed in the Agency and that the existing Scientific Council may be considered as a natural choice to take on this role.
 7. The current Scientific Council's interactions appear to be primarily upward to the ministries and the Management Board. They should also strongly engage in downward and lateral consultations with the Scientific Standing Bodies and panels as well as with the Rectors Conference and directors of the main research institutes.
 8. The stability of the basic research funding can be further enhanced. Many research councils

attempt to introduce healthy competitions among their clients. However, it is crucial not to introduce anxiety through excessive competitive funding if it is not absolutely necessary. Particularly, the early-career researchers must be given sufficient base stable funding to enable initial navigation and positioning so that they are able to realise their potentials effectively.

9. The thematic or targeted research programmes need to be established. This can happen when a better mandate and means of identifying strategy and priorities are assigned to the Agency.

3.2 Evaluation of the Quality and Effectiveness of SRA Portfolio of Activities

As mentioned in Section 3.1, the Slovenian Research Agency has made enormous strides since it started to establish a competitive and strong funding agency at the European level. The SRA currently hosts a rich set of funding instruments summarised in Figure 5.

Measurable progress has been achieved in the Slovenian research system over the last seven years, mainly but not exclusively, due to the SRA's activities and incentives, particularly when considering publications and citation measures.

This can be illustrated in the following statements in the SRA 2010 Annual Report:

- The *relative impact factor* for Slovenia – determined jointly for all research fields – rose to 0.69 (for 2005-2009) compared to 0.61 (for 2000-2004); Slovenia has exceeded in 2009 the EU average in citations per million inhabitants, and the growth index of the number of citations has exceeded 120 whereas the publication growth index remained at 113 – a good prospect for the future;
- The share of publications outside of Slovenia has retained majority (51%) in 2009 despite a downward swing from the previous year in social sciences and humanities;
- The number of foreign guest researchers in 2009 has exceeded the 2004-2008 average;
- Funding obtained by research organisations from international sources and knowledge users grew by 6% with the respective increase in the higher-education sector of 13%.

Opportunities for further improvements

Peer Review, Evaluation and Monitoring

The peer review and selection process used by the SRA – although very efficient now – is perceived to be over-automated for the intended purpose of comparing proposals for their scientific merits and potentials. The Committee fully understands the value of automation and metrics, not only for increased efficiency but also in promoting and safeguarding objectivity. However, it appeared to us – through our various consultations and discussions – that during the process of establishing and optimising the peer review procedures used by the Agency, excessive reliance has been made on these measures, including *bibliometric* indices, and their usage in determining eligibility *thresholds*. We acknowledge the commitment of the SRA leadership to continuous improvement and trust that their ongoing efforts towards moderating the role of these metrics as auxiliary tools will change this perception.

The Committee is of the opinion that excessive reliance on automation and quantitative measures in peer review is prone to higher risks of promoting conservative attitudes and outcomes for identification and promotion of new areas and ideas. Scientific conservatism can have negative implications for a smaller country such as Slovenia especially in support of the ambitious national strategy whose success would depend on research dynamism and boldness in capacity building.

In this regard, the Committee also noticed a general sense of modesty in the levels of ambitions set and expected from the best scientists of the country who have the real potential of competing at international levels in certain areas. Although it is unrealistic to expect Slovenian science to push the frontiers of all disciplines and areas, it is very reasonable to hope and expect that the current European Research Area is providing a larger and richer context in which innovative and groundbreaking ideas and proposals may emerge through Slovenian scientific communities. There may be interplay between the degrees of the mentioned conservative outlook and the expected levels of ambitions.

Funding instruments of the SRA are comprehensive and efficient from an administrative point of view and allow for very simple financial management rules (i.e. the fixed grant values). However, the notion of collaborative research projects of various sizes and objectives could be further promoted, especially in order to reinforce multidisciplinary research and public-private partnerships. More flex-

ibility should be introduced in the granting rules to increase responsiveness in research project management to variable needs and requirements.

In particular, the young researchers funding line within the current portfolio of SRA activities appears to be appreciated very much by its intended clients. In order to further contribute to Capacity Building as a crucial prerequisite of competitiveness, the Agency should consider increasing the volume of this instrument.

More specifically, the Committee noted that:

1. The notion of fixed-cost grants of 100 or 200 k€ maximum although easy to manage, could be restrictive in identifying and responding to the real needs of researchers and their proposed ideas across different disciplines.
2. The SRA has established a modern and efficient peer review system. Significant progress has been made in a relatively short period of time towards promoting and safeguarding transparency and eliminating subjective influencing and interference, mainly through the establishment of specialised databases, and automated quantitative sifting and metrics.
3. *Bibliometric* tools have been useful in this initial phase for accentuating and permeating objectivity into the peer review system. However, these must be used only as support tools since at the very best they measure the publication track records of the proposers. They should not overshadow or overrule strong and determining scientific inputs and judgments needed for valuing the proposed research. The Committee is of the opinion that, despite the significant strides made by the Slovenia Research Agency in peer review, more needs to be done to facilitate, reinforce and disseminate the usage of scientific judgments as the decisive ingredient in peer review.
4. The Committee is of the opinion that using accumulated points and threshold – calculated based on past performance – as eligibility criterion for submission of proposals favours established areas and groups of scientists and therefore does not appear to be fully open to fostering innovation. We believe this approach may be prone to higher risks of filtering new scientific ideas, innovative approaches and perspectives that could be put forward by individuals whose track records may not fully satisfy the eligibility conditions.
5. The Committee also noted the need to sharpen the assessment criteria and their effectiveness for better valuing the so called *broader impact* in general and the *societal relevance* in particular.

It is acknowledged that this is complex, and cannot be fully automated. It requires authoritative scientific inputs and judgments and therefore means of identifying individuals who can provide these. It may be useful to consider replacing the in-house terminology of “applicative projects” with terminologies used in other councils and agencies for assessing the broader impact and societal relevance.

6. The Committee acknowledges SRA’s efforts in encouraging and facilitating submission of proposals in electronic format only. However, it would appear that still more could be done to further reduce and eliminate the need for submission of printed applications.
7. The criteria and judgments used for fast-track submission to the second stage (by invitation) can serve well in capturing timely, breakthrough research proposals from recognised leaders in different disciplines, but this does not seem to be fully transparent or at least is not perceived to be so. The Committee sensed a certain degree of scepticism about its full objectivity on the side of the scientific communities.
8. In terms of monitoring projects and programmes, the Committee felt there to be a degree of over-regulations and lack of flexibility. This could be related to the fact that the Agency has emerged directly from a Ministry, and in most government bodies the financial management of public funds is normally regulated and monitored very tightly. However, in recent years many European research councils have moved towards simplifying reporting procedures on research grants. This should be seriously considered by the SRA and if necessary by the responsible Ministry.
9. SRA should further strengthen their portfolio of activities by developing specific instruments to promote collaborative research and networking, particularly in support of applied research and innovation. Innovation is clearly stated as a major priority in the 2011-2020 national strategy and SRA is in a logical position to assume a central and enabling role to help realise this priority in cooperation with other relevant parties. SRA’s current instruments are quite efficient, but are mostly adapted to academic research. Specific actions should be taken to create, for example, targeted funding instruments in favour of collaboration with industry, or for promoting technology maturation from public R&D.
10. SRA should implement measures towards providing more opportunities and perspectives for the creation, retention and attraction of excellent

young researchers, namely, Slovenians returning from abroad, non-Slovenians from abroad or researchers wishing to stay in the country. To this end, the SRA could consider leveraging funding through partnerships and joint sponsorships with other bodies such as the public research institutions or with the private sector.

- II. It appears that although the Temporary Bodies conduct peer review and selection of proposals, a different authority, i.e., the Standing Bodies carry out the ex-post project monitoring and evaluation. The Committee is of the opinion that it may be of much greater benefit to the system if the same committee which evaluates and selects proposals would also monitor and carry out ex-post evaluation of the projects. The key would be to have a review and selection committee whose expertise is at the level required to make strong sense of expert assessments when measuring quality and potentiality of competing proposals.

International Agenda

Although one of the funding instruments managed by the SRA is the *International cooperation (or mobility) projects*, the Committee came to the conclusion that the Agency could be more active in promoting and facilitating collaborations between Slovenian researchers and individuals or groups outside of the country. Once again, this could be the result of the ministerial heritage to the Agency through which top-down strategy and priorities are defined, including the types and nature of collaborations.

The Committee noted that significant attention is provided in establishing the rules of procedures (e.g., RD-3, Section V) for guiding and streamlining international scientific cooperation. However, within the Agency’s portfolio, international collaborative research is explicitly promoted in the backdrop of existing bi-lateral and multi-lateral government agreements. It appears to us that promotion and funding of open collaborative research does not receive explicit attention.

The Committee is of the opinion that in general, both well-established scientists and high-achieving early-career researchers, know best who they would need and want to collaborate with and in which country. It is to the advantage of the national research and education agenda, if greater flexibility is provided to empower and financially support the researchers to engage themselves and their groups in international collaborative research as they deem necessary.

In summary, with regard to internationalisation, and with possible impacts on *capacity building* at

the national level, the Evaluation Committee is of the opinion that:

1. Although SRA's current portfolio of activities is appropriate in relation to its mission, some rigidity on inward mobility can be observed, i.e., facilitating attraction of foreign researchers.
2. The Slovenian research system in general, and SRA system in particular, do not appear as "welcoming" as they wish to be to the excellent scientists from abroad and Slovenians returning to their country.
3. The cultural openness of the Slovenian nation could be better translated into policy and regulatory arenas and practices so that the national research systems can take better advantage of experience of incoming foreign researchers and Slovenians abroad. This will evidently contribute to the requirements of capacity building.
4. More explicit support should be provided to Slovenian eminent scientists to reach out to their European and international counterparts to conduct collaborative research. The Committee is of the opinion that although international cooperation facilitated through government bi- and multi-lateral agreements can serve national strategic interests, *funding of open scientific collaborations* with partners wherever they may be can be of real benefit to Slovenian science and the research base.
5. International collaborations and outreach, including opportunities provided by the European Commission, could be explored in order to further stimulate and facilitate capacity development. This is a crucial step in preparing the grounds and training the required number of highly qualified researchers and academics to match the levels of ambition set by the Slovenian Higher Education and Research and Innovation Strategies for the next ten years.

3.3 Evaluation of the Quality and Availability of Resources

Budget and Human Resources

The Evaluation Committee was very impressed by the professional culture, responsiveness and efficiency of the SRA staff in relation to the size of their portfolio and the nature of the services they provide. The Agency has at present 52 full-time employees, among them six holding a PhD, four with specialisation and Masters of Science, and 34 with university degrees, organised in five departments and three services. The SRA, with a total budget in 2010 of

176 M€, in 2010 has spent 2.6 M€ for its operation (1.4%)⁶. This is indeed an indication that on the whole the Agency staff members operate their portfolio of activities very efficiently considering the research budget and number of proposals they deal with every year.

As illustrated in Figure 8, the ratio of the number of proposals funded per staff places the SRA among the three organisations with the highest ratio (out of 17), while the ratio of annual budget per staff brings the Agency to the 8th position (from 17). Therefore, considering a purely quantitative throughput it is evident that the relatively small SRA office is leveraging an extensive portfolio and managing a relatively large volume of activities.

It is perhaps both the efficiency of the staff members and the strong and pervasive focus on automation in science management practices which have contributed to this distinction.

In summary, the Committee is of the opinion that:

- The current human resource capacity available at the Agency is operating very efficiently given the size and scope of the Agency portfolio. Any reduction in the capacity of human resources will therefore have undesirable consequences for the SRA in delivering its mission and for enhancing its added value.
- Should the Agency engage itself concretely towards addressing the recommendations outlined in previous sections, such as strategy and priority definitions and added value, or on revitalising the peer review practices and enhancement of internationalisation and capacity building, then additional resources will be required, in particular for highly qualified staff members covering all scientific disciplines in the Agency's portfolio.
- Based on the limited consultation of the main clients of the Agency, it appears that the customers are satisfied with the professionalism and responsiveness of the SRA current staff and services. However, the Committee also heard repeatedly that the agency should have more staff members with scientific and research backgrounds, for example with PhD degrees, leading the different disciplines portfolios.

Information Technology

The Agency has helped develop and promote IT systems and tools that extensively support and contribute to their operations and the transparency in the distribution and management of public funds.

6. Self Evaluation Report

The two main systems being used are: **SICRIS** (Slovenian Current Research Information System) and **COBISS** (Cooperative Online Bibliographic System and Services) with their key features briefly described below⁷:

SICRIS was developed by the Institute of Information Science (IZUM) in Maribor and the SRA. Its structure is designed using international standards and research classification schemes, as well as CERIF (the Common European Research project Information Format recommended by the EU as the common language for fostering diffusion of research information⁸). The system is maintained at IZUM and currently contains: 904 research organisations, 1431 research groups, 13926 researchers, 685 current and 4967 completed research projects, and 327 current and 111 completed research programmes.

COBISS.SI is a set of interconnected databases of 400 libraries in Slovenia. The regional version of the system called COBISS.net includes 600 libraries in some of the neighbouring countries. Most of the information in the database is in Slovenian and English. SICRIS has a link to COBISS.SI system and to COBIB.SI, its bibliographic database, which gives direct access to bibliographic information about researchers.

- The Evaluation Committee commends the leadership and responsible staff of SRA for their vision and efforts dedicated to the usage of modern Information Technologies and Tools in support of automation, transparency and for avoiding irregularities and subjective interventions in managing public funds for research.
- Adequate systems have been created and the communities seem to have favourable views, particularly about COBISS. It may be a matter of time and further development for SICRIS to attract the same appreciation and usage.

7. Extracted from the Self Evaluation Report;
<http://www.cobiss.si/> and <http://www.cobiss.net/>

8. http://cordis.europa.eu/cerif/src/exec_sum.htm

4.

Concluding Remarks and Recommendations



The members of the Evaluation Committee wish to express their general appreciation of the Slovenian Research Agency as a *modern* and *efficient* funding organisation comparable to well-established European research councils and funding organisations with much stronger heritage and portfolios.

The Evaluation Committee was impressed by the overall performance of the SRA in delivering high-quality added value to the Slovenian research system. In comparison to other organisations in similar contexts, the SRA manages a large and diverse portfolio of activities with a relatively small office.

In seven years, the Agency leadership has been very successful in its explicit attention and conscious efforts towards creating an objective and transparent public funding organisation. The agency operates within a well-conceived governance and management structure adhering to good practice in accountability and integrity in the management of public funds.

The Agency has made great efforts in creating very well-documented and elaborate rules of procedures for the various aspects of the evaluation and peer review as well as in defining the roles and responsibilities of the various bodies. These documents have been translated into English, a step which also demonstrates a proactive outlook.

SRA leadership appears to be cognisant of the requirement for continuous attention to gender balance across their funding lines. Currently the Research Projects funded by the Agency enjoy a good gender balance while the Agency seems to be active in maintaining this balance and aware of the need for improving it in other instruments such as the Research Programmes.

The Evaluation Committee has also identified three main areas where they see opportunities for

the Agency to pursue further enhancement of its mission, operations and added value for the benefit of Slovenian Research as well as the ERA. These three areas are briefly summarised below:

- **Mission and Strategy:** The Agency needs to take initiatives for engaging all relevant parties in a focused dialogue with the aim of identifying ways in which they can take a more enabling role in strategy definition and implementation and make better use of their scientific bodies and resources. Other specific key areas described in Chapter 3, for which the Agency's mission and strategy may need readjustments, are preparing the grounds for more collaborative research including more autonomy for international collaborations; applied research and innovation; technology transfer and maturation; and capacity building.
- **Implementation – Funding Instruments and Evaluation in search of excellence:** The Agency is encouraged to continue its efforts towards solidifying a more explicit scientific dimension in its peer review and merit-based selection process which has been perceived to be over-automated and somewhat *mechanistic*. Furthermore, new instruments must be created in support of the items mentioned above. A prerequisite for making these happen is evidently the availability of the required financial and human resources. Specifically, engagement of an appropriate number of highly qualified personnel who can be strong interlocutors for the scientific communities both as clients and as mandated scientific bodies covering all broad scientific disciplines. Other specific areas for which the agency is recommended to examine and when possible further enhance its portfolio either alone or in partnerships with other relevant parties are: more collaborative research

including increased autonomy to the scientists for establishing international collaborations; applied research and innovation; technology transfer and maturation; and capacity building, possibly through joint funding.

- **Internationalisation:** The Committee has sensed some rigidity on inward mobility, i.e., facilitating attraction of foreign researchers. The Slovenian research system in general and the SRA system in particular do not appear as “welcoming” as they wish to be to the excellent scientists from abroad and Slovenians returning to their country. Moreover, in addition to promoting government defined bilateral and multilateral frameworks for international cooperation, explicit financial and programmatic support should also be provided to the Slovenian eminent scientists to reach out within the European scene and beyond to conduct collaborative research with their international partners wherever they may be. Measures to enhanced internationalisation can also have a positive impact on capacity building both directly through enlarging the pool of resources and indirectly through sharing of experiences and good practice.

The Committee is of the opinion that the Slovenian Research Agency is very well positioned to play a central and enabling role in the implementation of Slovenia’s visionary and ambitious strategy plans for Higher Education, and Research and Innovation (2011-2020). To realise this however, the following requirements are necessary:

- the mandate of the agency in this leading position is reaffirmed by the government
- where needed more autonomy and responsibilities are defined and given to the agency
- financial and human resources are secured in good proportion to the mandate and operations of the agency
- engagement and support from other implicated organisations continue to be available

The items above are necessary conditions. However, the sufficient condition would be for:

- SRA to maintain its commitment to taking proactive measures in assuming this role and its openness to continuous improvements in search of scientific excellence and in harmony with the European and international good practices.

We believe that the commissioning of this Evaluation is a testimony in support of the last item above, and trust that the outcome of our work would be of benefit in realising the ambitious goals set out for the Slovenian Education, Research and Innovation agendas for the years to come.

The members of the Evaluation Committee are grateful to the SRA leadership and staff for their full engagement, and professionalism in supporting the Evaluation Committee and the ESF in completing this exercise.

Appendices

Appendix I: **List of Reference and Background Documents**

Sections A to D below list 27 Reference and Background documents (comprising 11 web-links, 13 PDF files and 3 PowerPoint presentations) furnished by the Slovenian Research Agency. These are grouped under four categories of: (A) General Background including strategy, policy, annual reports, etc.; (B) Peer Review and Evaluation; (C) Information System; (D) Human Resources. Under each of the four categories, entries are grouped as Background Documents – which are directly relevant and needed for the review – and Reference Documents, which provide more detail about the context, the organisation and operations.

(A) General Background

Reference Documents:

- RD-1.** Resolution on Research and Innovation Strategy of Slovenia 2011-2020: Document adopted by the National Assembly of the Republic of Slovenia.
link: [Resolution on Research and Innovation Strategy of Slovenia 2011-2020](#)
- RD-2.** Slovenian Research Agency Annual Report for 2010: Main document, containing mission and strategy and results on realisation of the tasks.
link: <http://www.arrs.gov.si/en/gradivo/dokum/inc/ARRS-Annual-report-2010.pdf>

Background Documents:

- BD-1.** Policy Mix Peer Review of Slovenia: ERAC expert group report on the design and implementation of national policy mixes (ordered by Ministry of higher education, science and technology).
link: [ERAC expert group report: Policy Mix Peer Review of Slovenia](#)
- BD-2.** Quark: Research and development in Slovenia: Quarterly Magazine illustrating science in Slovenia.
link: <http://www.quark-magazine.com/>
- BD-3.** Innovation scoreboard for 2010 (published in PROINNO-EUROPE.EU: Document, illustrating the position of Slovenia research in Europe.
link: <http://www.proinno-europe.eu/inno-metrics/page/innovation-union-scoreboard-2010>

(B) Documents illustrating SRA Evaluation System

Reference Documents:

- RD-3.** Rules on the Procedures of the (co) financing and Monitoring of Research Activities Implementation: Document, defining all the procedures of ARRS.
link: <http://www.arrs.gov.si/en/akti/prav-sof-ocen-sprem-razisk-dej-260111.asp>
- RD-4.** Rules on the work of standing bodies and working panels in research: Document, defining expert bodies, their tasks and conflict of interest.
- RD-5.** Methodology for assessing applications for (co)financing of research activities: Document, defining criteria for evaluation.

Background Documents:

Background Documents 4-14 listed below describe ARS's procedures for proposal submission, peer review, evaluation and communication with reviewers.

Application:

- BD-4.** Application form phase I- project call;
BD-5. Application form Phase II- project call;

Documentation for reviewers:

- BD-6.** SRA letter to reviewers;
BD-7. Reviewer's report for phase I;
BD-8. Reviewer's report for phase II.

Description of the Assessment Element for different types of projects in Basic and Applied (B&A), and Postdoctoral grants (Humanities and other than Humanities are separated):

- BD-9.** Assessment Criteria for B&A Projects (in other than Humanities);
- BD-10.** Assessment Criteria in B&A Projects (in Humanities);
- BD-11.** Assessment Criteria for Postdoctoral Projects (in Humanities);
- BD-12.** Assessment Criteria for Postdoctoral Projects (in other than Humanities);
- BD-13.** Instructions for members of the panels - phase I (PowerPoint presentation);
- BD-14.** Instructions for members of the panels - phase II (PowerPoint presentation);

Appendix I: **List of Reference and Background Documents**

BD-15. “Scientometric indicators: peer-review, bibliometric methods and conflict of interests” This is a paper in Scientometrics, “explaining how the SRA evaluation system in Slovenia avoids conflicts of interest”.

(C) SRA Information System

Reference Document:

RD-6. Description of the SRA Information System – (PowerPoint presentation);

Background Documents:

BD-16 to BD-20 listed below provide direct links to various web-pages and online resources illustrated in RD-6 above (Description of the SRA Information System)

BD-16. SRA Website;

link: <http://www.arrs.gov.si/sl/>

BD-17. Electronic applications to the Calls (supporting all public calls of the Agency);

link: <https://www.arrs.gov.si/eObrazci/Login/Login.aspx>

BD-18. Book of public calls;

link: <http://www.arrs.gov.si/sl/razpisi/11/pregled-domaci.asp>

BD-19. Supplies data for SICRIS- Slovenian R&D information system;

link: [SICRIS – Informacijski sistem o raziskovalni dejavnosti v Sloveniji](#)

BD-20. Controls financing the research organisations and assures transparent SRA operation – on line financial data.

link: <http://www.arrs.gov.si/sl/finan/letpor/>

(D) Human Resources

BD-21. human resources – organisational structure.

Appendix II: **SRA Clients and Stakeholders Consulted**

Representatives of SRA Scientific Council (ZSA)

- **Professor Maja Ravnikar**
Member of ZSA, National Institute of Biology
- **Professor Peter Dovč**
Former President of ZSA, University of Ljubljana, Biotechnical Faculty

Representative of Ministry of Higher Education, Science and Technology

- **Dr Tomaž Boh**
Science and Technology Directorate

Representative of Rectors Conference

- **Professor Danilo Zavrtanik**
President, Rector, University of Nova Gorica

Representative of SRA Management Board

- **Professor Milena Horvat**
Vice President

Chairs of SRA Standing Bodies

- **Professor Franc Forstnerič**
Natural Science
University of Ljubljana, Faculty of Mathematics, Physics and Mechanics
- **Professor Marko Topič**
Engineering
University of Ljubljana, Faculty of Electrical Engineering
- **Professor Janez Sketelj**
Medical Sciences
University of Ljubljana, Faculty of Medicine
- **Dr Hojka Kraigher**
Biotechnical Sciences
Slovenian Forestry Institute
- **Professor Ljubica Marjanovič-Umek**
Social Sciences
Vice President, University of Ljubljana, Faculty of Arts
- **Dr Barbara Murovec**
Humanities
Scientific Research Centre, Slovenian Academy of Sciences and Arts, Franc Stele Institute of Art History
- **Professor Vasja Vehovar**
Interdisciplinary
University of Ljubljana, Faculty of Medicine

Slovenian Eminent and Early-Career Scientists

- **Dr Peter Krajnik**
University of Ljubljana, Faculty of Mechanical Engineering; Senior Research Scientist, Royal Institute of Technology, Sweden
- **Professor Jadran Lenarčič**
Director, The Jožef Stefan Institute
- **Dr Miha Ravni**
Marie Curie Fellow, Department of Physics, University of Oxford, UK
- **Dr Romina Rodela**
Wageningen University; University of Nova Gorica
- **Professor Slavko Splichal**
University of Ljubljana, Faculty of Social Sciences
- **Professor Jerca Starič Vodušek**
Institute for Contemporary History
- **Dr Boris Turk** (*written contribution*)
Department of Biochemistry and Molecular and Structural Biology, Jožef Stefan Institute, Member of EMBO
- **Dr Nedjeljka Žagar**
Chair of Meteorology, Faculty of Mathematics and Physics, University of Ljubljana, ERC Awardee

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