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Author: Maja Bučar

Editor: Nida Kamil Özbolat

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Institute for Prospective Technological Studies

Contact information

Address: Edificio Expo. c/ Inca Garcilaso, 3. E-41092 Seville (Spain)
E-mail: JRC-IPTS-S2E@ec.europa.eu
Tel.: +34 954488318
Fax: +34 954488300

<https://ec.europa.eu/jrc>
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Abstract

In the frame of the Stairway to Excellence project, complex country analysis was performed for the EU MS that joined the EU since 2004, with the objective to assess and corroborate all the qualitative and quantitative data in drawing national/regional FP7 participation patterns, understand the push-pull factors for FP7/H2020 participation and the factors affecting the capacity to absorb cohesion policy funds. This report articulates analysis on selected aspects and country-tailored policy suggestions aiming to tackle the weaknesses identified in the analysis.

The report complements the complex qualitative/ quantitative analysis performed by the IPTS/KfG/S2E team. In order to avoid duplication and cover all the elements required for a sound analysis, the report builds on analytical framework developed by IPTS.

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EXECUTIVE SUMMARY¹

During the period 2007-2013 Slovenia changed four Governments, affecting the governing structure and the workload of ministries entitled for Research, Development & Innovation (RDI). In March 2014 the Government re-established a special Government Office for Development and European Cohesion Policy (GODC)², which has as a primary task to speed up the preparation of the necessary national documentation for the EU structural and cohesion funds. In 2015, Slovenia has the Ministry of Education, Science and Sport (MESS)³, dealing with research, while technology/innovation promotion is under the Ministry of Economic Development and Technology (MEDT)⁴. In addition to the reorganisations which took place, the efficiency and the quality of the governance is affected by frequent personnel changes: both ministries have had 5 different ministers and state secretaries during this period, and GODC has had three different heads within its first year of functioning.

Slow process in the preparation of key documents for 2014-2020 ESIF is a good demonstration of the insufficient quality of governance in the past four years. The lack of cooperation and coordination so far among the key players in R&I governance is a serious threat to Slovenian ability to benefit fully from the structural funds in R&I area. Already, the delays in the preparation of the RIS3 as well as delays in the design of specific instruments are impacting the R&D community. With improved communication since April among the main stakeholders it is hoped that some of the delays will soon be neutralised.⁵

According to the interviews held, the majority of the measures that Ministry for Higher Education, Science and Technology and the Ministry of Economy had prepared for the financial perspective 2007-2013 in the area of R&I were **well prepared and communicated to the R&D community, both in public and business sector**. The instruments were either completely new or re-designed existing ones, but with significantly increased funding. They have, however, **addressed specific needs, identified in particular in business sector R&D as a result of active involvement of the stakeholders in the development process, especially via the Chamber of Industry and Commerce**⁶. Among the limiting factors most commonly mentioned by the interviewed applicants to various R&I measures, financed via SF, were different **administrative barriers**, especially complicated procedures at times of applying for the funds as well as during the implementation processes (Bučar et al. 2010). The positions of some of the supervisory bodies (Ministry of Finance, Court of Audit, the Government office for structural funds) had frequently differ from one another, further causing uncertainty among the project partners. Since each instrument needed an approval by several offices, already in the phase of the design of the instrument delays were experienced.

Slovenia participated actively in the Framework programmes, with each following one **increasing the number of participation, number of coordination projects as well as the European Commission (EC) contribution** (MESS, 2015). The FP7 indicators reveal that Slovenia participated in 914 projects and was involved as coordinator in 55 projects receiving €170.8m as EC contribution. One of the problems observed in analyses of Slovenian participation in FP7 is

¹ Most of the findings included in the text are based on the interviews with a number of different stakeholders of the research, development and innovation system: from the policy makers to the representatives of the organisations undertaking research and innovation activity. Also, available written documentation and various policy papers were consulted.

² <http://www.svrk.gov.si/en>

³ <http://www.mizs.gov.si/en>

⁴ <http://www.mgrt.gov.si/en>

⁵ Interviews at GODC, May 2015.

⁶ Chamber of Industry and Commerce organised a series of meetings with its members during the preparation of the key documents for financial perspective 2007-2013 and thus contributed to the shaping of measures which were included in Operational Programmes.

relatively **low success rate** (MIRIS, 2015). While Slovenian researchers are submitting numerous proposals, only 14.7% succeed. Especially low is the success rate with the European Research Council (ERC) with only 3.1% and already very low submission of proposals. Among the barriers to participation in FP/H2020 administrative/teaching work overload for the research staff, especially at HEI were mentioned during the interviews. Most HEIs and research institutes do not have sufficient support staff so the burden of applying and administrative management lies with the teaching/ research staff.

One of the few relatively stable areas of work at MESS is the department of international cooperation, including the National Contact Points (NCPs) network. Most of the NCPs are at MESS, where it happens that an individual may be in charge of more than one area. The network implements regularly the promotional policy for H2020 with organisation of various events, coordinated with the EC. The promotion of instruments co-financed by SF was implemented by the respective ministry/agency (for more information, see Section 2). Already during the preparation of the Operational Programmes (OP), potential instruments were presented to various groups of stakeholders. Further, with each call a special event was prepared, explaining the specifics of the call and major expectations of the funder.

Evaluation mechanisms of proposals submitted under SF/ESIF calls for Research and Innovation (R&I) differed with respect to which funding agency was implementing them. The instruments financed by the ministry in charge of science⁷ involved international evaluators for the scientific content of the proposals and the national experts for the relevance and quality of the project team. On the other hand, the Technology agency (TIA) and the Ministry of Economy prescribed in the call already the criteria for the assessment of the project proposals to a high level of detail. They have not used foreign experts, but developed internal database of national experts in different technical areas, from which the evaluators for specific calls were invited.

During the financial perspective 2007-2013 the issue of combining the SF funds with the FP funds was not raised. In fact where the two types of financing were combined, this has happened more as a coincidence by the R&D performing institutions: most of them mentioned in our interviews that they had to be careful not to be suspected of double financing by the Slovenian auditors. In discussing this issue with different stakeholders, **the uncertainty related to the issue of double financing** was often mentioned, along with rather rigid approach of the Court of Audit to this issue.⁸ The calls for the projects to be co-financed with SF were designed regardless of the FP calls, so as a rule, time-frames were different, reporting requirements on the implementation were different and most importantly, the objectives were different. So even though the research institutions in practice financed their activities by combining the resources, they were very careful not to stress this, but kept the projects separately administered. For the financial period 2014-2020, it is proposed by the MESS that an automatic recognition of the evaluation of the project proposals by the European Research Council is accepted by the Slovenian Research Agency (SRA) and national funding provided for all the submissions which will make it over the threshold. According to the interview at the MESS, more synergies are expected also in the domain of research infrastructure.

Lack of systematic evaluation of all the instruments, co-financed during the 2007-2013 period is the key limiting factor to be able to verify the number of transfers of knowledge from PROs to business sector. GODC had commissioned the ex-post evaluation, but the results will not be forthcoming before the end of 2015.

⁷ This refers to the Centres of excellence and Competence Centres, more information available in the sections 2, 3 and 5.

⁸ When discussing the issue of double financing with several interviewees one had the feeling that the issue is not defined properly by the administration in the first place and that various auditors have chosen different ways of interpretation of what constitutes double financing. As a precaution, some R&D institutions thus behave extra careful and instead of looking for synergies, purposefully do not combine various sources of funding.

Based on the interviews with government officials/policy-makers, Slovenia as a small country needs to recognise that it needs to employ all of its human resources wherever they are: in government offices, in HEIs, in PROs, interest groups, business community in search of the optimum design of the future orientation. Increasingly, it is becoming obvious, that a clearer division of labour and responsibilities of all participating parties need to be established, so that the organisational framework in support of ESIF/HORIZON 2020 is transparent and easily understood to all stakeholders⁹. This would prevent overlapping of the instruments and make the potential for synergies more obvious.

One of the specific problems, observed in the RDI policy-making, especially vivid in the preparation of the RIS3, is the attitude of policy makers towards the EU policy advice. If Slovenia was one of the most eager pupils during the accession period as well as during the early years of membership¹⁰, it seems that lately the country has digressed from this path¹¹. The delays in the preparation of the ESIF strategic documents are in part the result of such attitude. Yet, at the end of the day it is PROs and business RDI units who are left without the expected financial support of the on-going financial perspective.

⁹ Interviews held at the MESS, MEDT and GODC.

¹⁰ This can be reflected in the types of the measures introduced in RDI policy, where all of the measures discussed at the EU level soon found their place in Slovenian policy (technology networks, clusters, platforms, etc.). Also, Lisbon strategy targets were inserted in Slovenian policy documents.

¹¹ The process of the preparation of the Smart Specialisation Strategy is a good demonstration of this: only by spring 2015, a closer cooperation has been established with JRC-IPTS / S3Platform.

Acknowledgements

The first draft of this report was produced in April 2015 and was focused on Slovenian experience with FP/ SF during the period 2007-2013 and the expected developments during the financial perspective 2014- 2020. The available documentation at the web pages of the Ministry of Education Science and Sports, Ministry of Economic Development and Technology and the Government Office for Development and European Cohesion Policy was analysed. Yet, most of the findings included in the text are based on interviews with a number of different stakeholders of the research, development and innovation system: from the policy makers to the representatives of the organisations undertaking research and innovation activity. In particular, it has benefitted from the comments and suggestions of Nida Kamil Ozbolat of JRC-IPTS and related department(s) of DG-REGIO.

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1 INTRODUCTION

Background of Stairway to excellence project

The European Commission Framework Programme (FP) for research and technology development has been vital in the development of European knowledge generation. However, there is considerable disparity across EU countries and regions in terms of FP participation and innovation performance.

Horizon 2020 will continue to provide funding on the basis of excellence, regardless of geographical location. However, it will also introduce novel measures for "spreading excellence and widening participation" by targeting low Research & Innovation (R&I) performing countries - most of whom are eligible for innovation funding under Cohesion Policy for the period 2014-2020.

In addition, the new regulations for ESIF aim to use funds more effectively to build regional/national excellence and capacities. By doing so, the key funding sources (ESIF and Horizon 2020) can complement one another along the entire innovation process.

Objective of S2E

The Stairway to Excellence (S2E) project is centred on the provision of support to enhance the value of the key European Union (EU) funding sources for research, development and innovation: European Structural and Investment Funds and Horizon 2020 but also the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME), Erasmus+, Creative Europe, European Union Programme for Employment and Social Innovation ("EaSI") and the digital services part of the Connecting Europe Facility by actively promoting their combination. The project has two main objectives, namely:

- Providing of assistance to regions and countries that joined the EU since 2004 in closing the innovation gap, in order to promote excellence in all regions and EU countries;
- Stimulating the early and effective implementation of national and regional Smart Specialisation Strategies.

Main purpose of the document

In the frame of the project, complex country analysis is performed for all 13 EU MS with the objective to assess and corroborate all the qualitative and quantitative data in drawing national/regional FP7 participation patterns, understand the push-pull factors for FP7 participation and the factors affecting the capacity to absorb cohesion policy funds. This report articulates analysis on selected aspects and country-tailored policy suggestions aiming to tackle the weaknesses identified in the analysis.

The report complements the complex qualitative/ quantitative analysis performed the IPTS/KfG/S2E team. In order to avoid duplication and cover all the elements required for a sound analysis, the report builds on analytical framework developed by IPTS.

2 QUALITY OF THE GOVERNANCE

In assessing the quality of the governance of Slovenian research and innovation system (RIS), explanation needs to be given with regard to the events during the period 2008- 2015. The economic crisis, starting with 2008, had dire consequences for the economy as well as the stability of political situation in Slovenia. During this period Slovenia changed four Governments, affecting the governing structure and the workload of ministries entitled for Research, Development & Innovation (RDI). From 2004 to 2011, the Ministry responsible for RDI was the Ministry of Higher Education, Science and Technology (MHEST). After the 2011 elections this ministry gained responsibility for the entire education sector as well as culture but lost its technology section, which was moved to the Ministry of Economy. In the beginning of March 2014 the Government re-established a special Government Office for Development and European Cohesion Policy (GODC)¹², which has as a primary task to speed up the preparation of the necessary national documentation for the EU structural and cohesion funds, but also make sure that the 2007-2013 period was successfully implemented. In 2015, Slovenia has the Ministry of Education, Science and Sport (covering all levels of education, from kindergarten on, research and development as well as sports) – MESS, with technology/innovation promotion under the Ministry of Economic Development and Technology (MEDT)¹³. In addition to the reorganisations which took place, the efficiency and the quality of the governance is affected by frequent personnel changes: both ministries have had 5 different ministers/ state secretaries during this period, and GODC has had three different heads within its first year of functioning.

The shifts in the structure and personnel of the RDI responsible ministries resulted in delays in the implementation of the “Research and Innovation Strategy of Slovenia” (RISS), adopted in 2011¹⁴. Except for attempts at writing the legal texts (Law on Higher Education; Law on Research and Innovation) as requested in RISS, no major policy action was put in place since 2011. Each ministerial team had different views on the implementation of RISS and the content of the key legal documents, but none stayed in the office long enough to complete the policy changes. In May 2015, the newly-appointed minister of education, science and sports had stated that the drafts of the two key laws are to be prepared by late fall 2015 for public discussion.

The quality of governance in RDI field has been affected also by the declining budget funds: due to the austerity measures GBAORD had declined since 2012 from €189 million to the level of 175 million € (0.48 % of GDP) in 2013 (SORS, 2014). Unofficial data for 2014 and the proposed budget for 2015 show further decline of GBAORD.

Slow process in the preparation of key documents for 2014-2020 ESIF is a good demonstration of the insufficient quality of governance in the past four years. At the moment, Slovenia has an approved version of the Operational Programme¹⁵, with all the other needed documents still under preparation. Thus, the organisational framework/governance scheme of ESIF is still to be elaborated and the coordination mechanisms put in place.

Similar is the faith of smart specialisation strategy (RIS3), which was initially prepared by the team under the MEDT. The draft submitted to the Commission in November 2013 received negative comments, which led to the establishment of a new team under GODC in beginning of 2014. The

¹² See more at:

http://www.vlada.si/en/about_the_government/government_offices/government_office_for_development_and_european_cohesion_policy/ (23 March 2015).

¹³ See more at http://www.vlada.si/en/about_the_government/ (25 March 2015).

¹⁴ See detailed description of RISS in ERAWATCH Country Report 2012;

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/reports/countries/si/report_0006?tab=reports&country=si (23 March 2015).

¹⁵ <http://www.eu-skladi.si/ostalo/op-final-en> (June 16th, 2015).

first public presentations of these concepts were implemented from mid-April to June 2014. In June 2014, a new version of the RIS3 was prepared. This second draft of RIS3 was harmonised at the inter-ministerial level, published on the official website of GODC on 29 August 2014 and submitted to the European Commission (EC). Yet with the change of government in mid-2014, and additional comments by the EC, RIS3 had been again reopened for further amendments. In beginning of March 2015, a team at GODC presented to various stakeholders a new (third) draft for comments and further elaboration of instruments for its implementation. On 24 April 2015 GODC published an open call to business and research entities to submit proposals in what was named the entrepreneurial discovery process and identify Slovenia's high-potential technology areas and product directions. The draft of RIS3 as well as the selection from 170 proposals received were presented at the investment conference on developing Slovenia's Smart Specialisation Strategy¹⁶, where over 400 participants discussed the key development priorities in terms of investing in research and development in the areas where Slovenia has the critical mass of knowledge as well as the capacity to introduce and place this knowledge into the market¹⁷. On the basis of the discussion and expressed interests, the GODC is planning to identify strategic partnerships, which would be focused on priority areas. They would form the backbone of the RIS3. What GODC is still developing with other ministries and responsible agencies is the implementation process as well as coordination mechanism. The schedule proposed is to finalise the text with all the measures, implementation and monitoring process by summer 2015.

The delays of RIS3 as well as delays in the design of specific instruments is impacting the R&D community, since several of the instruments introduced during the previous financial perspective (like centres of excellence and competence centres) are no longer funded, others exist on minimal funding (young researchers, for example), while new measures/instruments are eagerly awaited. Such developments are reflected in SWOT analysis of Slovenian National Innovation System (NIS): on one side, there are several strengths still prevailing, like strong business R&D investment and relatively good scores in research excellence, while on the other, the lack of coherent public support system with declining funding point to the weaknesses in NIS. During the interviews with various stakeholders, including government officials, it was often stressed that Slovenia needs to urgently improve governance in RDI area to cash in on the opportunities (ESIF, Horizon 2020, etc.); otherwise the potential threats are quite likely to occur.

¹⁶ http://www.svrk.gov.si/en/media_room/news/article/1328/6039/50f3554d51ecc16efe5eb9877e0312c7/

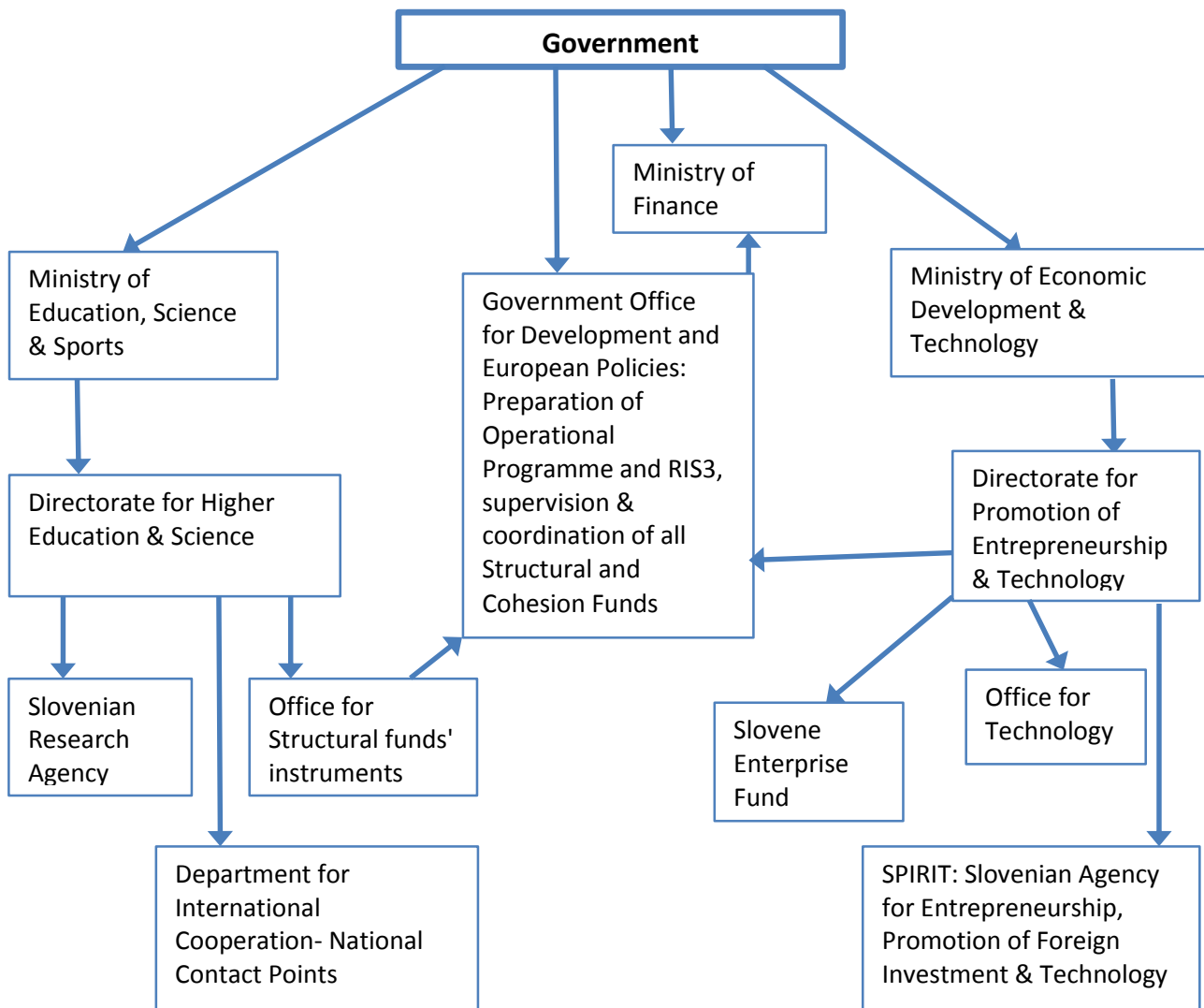
¹⁷ http://www.svrk.gov.si/fileadmin/svrk.gov.si/pageuploads/KP_2014-2020/Strategija_pametne_spezializacije/Programm_SPS_15._and_16._of_June_eng.pdf

Table 1: SWOT analysis of National Innovation System (NIS)¹⁸

STRENGTHS	WEAKNESSES
<ol style="list-style-type: none"> 1. Relatively high business sector R&D investment. 2. Several high-quality research units in public sector R&D, with good publication and citation record and international recognition. 3. Extensive higher education sector with high enrolment and potential for further improvement of human resources. 4. Complex institutional network with main elements of the National Innovation System. 5. Good information support system for public R&D sector (COBISS, SICRIS). 	<ol style="list-style-type: none"> 1. Business R&D investment concentrated on a small number of sectors. 2. Fragmentation and low level of cooperation within the public R&D sector- small research units. 3. High share of R&D and innovation inactive SMEs, especially in service sector. 4. Insufficient and complicated instruments for business R&D and innovation support. 5. Implementation deficit – a discrepancy between good strategic papers and commitments and their implementation. 6. Lack of coordination and transparency of work of intermediary institutions as well of the ministries/ government offices.
OPPORTUNITIES	THREATS
<ol style="list-style-type: none"> 1. Availability of additional resources through the EU Structural funds for R&D and innovation measures. 2. Design of new policy documents in R&D and innovation area, where priority setting will be strengthened due to RIS3. 	<ol style="list-style-type: none"> 1. Continuation of the public finance problems which resulted in lower financial support to R&D and innovation. 2. Increased brain-drain due to the growing mobility of younger generation. 3. Maintenance of the existing under-utilised RDI system due to insufficient political commitment. 4. Pressure of various interest groups to preserve status quo and avoid conflicts. 5. Overall imbedded system inaction and resistance to change.

¹⁸ Based also on findings in ERAWATCH Analytical Report 2014 (EC, 2015, to be published).

Figure 1. Organogram – governance of R&D funds (including structural funds for R&D)¹⁹



¹⁹ This was the organisational framework for the financial perspective 2007-2013. In June 2015 it is still not decided if there will be any changes in the tasks of different ministries/ agencies with relation to the implementation framework for 2014-2020 period.

3 FACTORS THAT SUPPORT OR LIMIT THE NATIONAL PARTICIPATION IN R&D CALLS FUNDED BY SF / ESIF

In the 2007-13 period, the Structural Funds were implemented in Slovenia through three operational programmes (OP)²⁰:

Operational Programme for Strengthening Regional Development Potential (OPSRDP), co-funded by the European Regional Development Fund (ERDF); SF budget of €1.7b; 42.4% of total SF.

Operational Programme for Human Resources Development (OPHRD), co-funded by the European Social Fund; SF budget of €755m; 18% of total SF

Operational Programme of Environmental and Transport Infrastructure Development (OPETIP) co-funded by the ERDF and Cohesion Funds; SF budget of €1.64b; 38.9% of total SF.

It was planned to allocate €1.25 billion, or 30.5% of total Structural Funds available to Slovenia, to the guideline “improving knowledge and innovation for growth”. Of this total, around €1.01 billion was foreseen for investments in innovation and R&D. This meant that the funds available for RDI have been significantly larger than at any time earlier since the Slovenian independence.²¹

A/ support factors

According to the interviewed stakeholders, the majority of the measures that the Ministry for Higher Education, Science and Technology and the Ministry of Economy had prepared for the financial perspective 2007-2013 in the area of R&I was **well prepared and communicated to all the R&D community both in public and business sector**. The responsible ministries and the agencies first announced the complete programme of SF at special promotional events and followed this by regular events for each of the public calls, where specific measures/instruments were introduced. This meant that when the public calls were announced, they were regularly over-subscribed, regardless of the target audience. Some of the calls were implemented through public agencies (Technology Agency²², Public Agency for Promotion of Entrepreneurship and Foreign Investment- PAEFI, Slovene Enterprise Fund_ SEF²³), some directly by the responsible ministries.

The measures during the period 2007-2013 were either completely new or re-designed existing ones, but with significantly increased funding²⁴. They have, however, **addressed specific needs, identified in particular in business sector R&D**. Practically all of the interviewed people, whether from the funding agencies or from the beneficiary side, agreed with this assessment.

Among the latter were the following ones funded by SF:

- Support to young researchers from industry (European Social Fund- ESF)

²⁰ http://www.eu-skladi.si/?set_language=en

²¹ During the time of drawing on EU SF, some relocations have been made, further enlarging the support to RDI measures, since some of the other ministries had more difficulties in identifying proper/timely projects.

²² Slovene Technology Agency as well as Public Agency for Promotion of Entrepreneurship and Foreign Investment were integrated in new agency, called SPIRIT, which the Ministry of Economic Development and Technology formed by 2013. See details in ERAWATCH country page:

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/si/highlights/highlight_0006

²³ <http://www.podjetniskisklad.si/eng/about-us>

²⁴ As illustration: all of the measures supporting R&D in business sector in 2004 amounted to €14m, while only one measure (mobility of researchers from public to business sector R&D units & young researchers from industry), co-financed by ERDF received annually approximately €21m.

- Support to mobility of researchers from public research organisations (PROs) to business R&D units (ESF)²⁵;
- Support to centres of excellence (substantially revised instrument and a new call, so not an automatic continuation of CoExcellence from previous period); (European Regional Development Fund- ERDF)
- Innovation vouchers (revised instrument) (ERDF)
- Support to SMEs for investment in new technology (ERDF);
- Support to start-ups in innovation environment (ERDF);
- Support to R&D activities in SMEs (ERDF).

Among the new measures most important were:

- support to competence centres (ERDF);
- support to joint development& investment projects (ERDF);
- support to strategic R&D projects with business sector (ERDF);
- support to development centres (ERDF);
- different voucher schemes (ERDF)²⁶.

Practically all of the instruments were designed so as to **stimulate cooperation between public research units and business sector**, with majority focusing on business sector initiative. The SF resources were available in parallel with significant tax subsidy for investment in R&D (see ERAWATCH Country Reports 2010²⁷; 2011 for details²⁸), resulting in substantial increase of business sector investment in R&D: from 59.3 % in 2006, business sector's share in total R&D expenditure had increased to 63.8 % by 2013, and in nominal terms from €288m to €597m (SORS, 2008 and 2014).

B/ limiting factors

Among the limiting factors most commonly mentioned by the interviewed applicants to various R&I measures were different **administrative barriers**, especially complicated procedures at times of applying for the funds as well as during the implementation processes. The procedural matters were differently designed depending on the funding agency/ ministry, so experience with a call with one did not mean that the application for another call with a different agency was any easier. Especially some of the smaller firms complained of the **complex documentation** required both at the time of the call as well as during the implementation of the project, slow reimbursement of costs and extensive paper work (Jaklic et al., 2012). The administrative burden was not necessarily

²⁵ These two measures were merged into a single instrument in 2009.

²⁶ SPIRIT (then JAPTI) was in charge of different voucher measures:

- Innovation voucher for co-financing of R&D projects intended for protection of intellectual property (budget €0.8m in 2010 and €1.5m in 2011)
- Business mentorship voucher (€0.6m euro in 2011 and 2012)
- Training voucher – co-financing of training and skills upgrading costs for employees working at least 20 hours per week; yearly budget €0.2m euro
- Process voucher – co-financing of costs for engaging experts for the improvement of business operations and for co-funding of participation fees at training courses intended for the improvement of business practices (€0.3m per year, 2011-2012)

²⁷ ERAWATCH Country Report Slovenia 2010:

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/reports/countries/si/report_0004

²⁸ ERAWATCH Country Report Slovenia 2011

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/reports/countries/si/report_0005

proportional with the amount of the support received: some of the relatively small individual values of the contracts still required quarterly reporting and financial statements²⁹.

On the other hand, during the interviews with the representatives from the implementation agencies and even the units within the ministries, it was found that some of the requirements of the Slovenian Court of Audit when supervising the **financial processes ill-defined** and adding to the complexity of the funding. In addition, the positions of some of the supervisory bodies (Ministry of Finance, Court of Audit, the Government office for structural funds) had frequently differ from one another, further causing uncertainty among the project partners. Since each instrument needed an approval by several offices, already in the design of the instrument delays were experienced³⁰. The same **coordination problem** happened during the implementation and even at the final approval stage, where the submitted documentation may have been approved by one office only to be rejected by the next one with argumentation counter to the advice of the office at the lower level.

Both, the interviewed end beneficiaries as well as the representatives of the funding agencies agree that Slovenia had designed a **rather complicated system** for managing the entire operation, related to SF, which would need certain revisions and especially better coordination among main actors involved. Some of the changes were introduced already during the implementation of the "old" instruments; other simplifications are expected to be built into the instruments for the financial period of 2014-2020. However, the low level of coordination and cooperation among different ministries/offices in 2013-2015 has not given ground to such optimistic expectations.

The lack of local co-financing or the insufficient R&D capacities were not identified as a significant limitation to the absorption of SF by anyone of the interviewed stakeholders.

²⁹ For example, the funding under young researchers from industry: each individual young researcher had to submit quarterly report on his/her work (usually Ph.D. studying) and document all related costs in accordance with the reporting system for structural funds.

³⁰ Technology agency, for example, needed 14 months for publishing the call for subsidies for development& investment projects, since the conditions of the call had to be verified by the Ministry of Higher Education and Science, Ministry of Economy, the Office for growth and structural funds, Ministry of finance. A change required by one had to be approved by all the others. So the call for the instrument announced in 2007 was not issued until mid- 2008.

4 PUSH–PULL FACTORS FOR R&I PERFORMERS TO PARTICIPATE IN FP7 / H2020

Slovenia participated actively in the Framework programmes from FP5 on, with each following one increasing both the number of participation, number of coordination projects as well as the EC contribution³¹. The FP7 indicators reveal that Slovenia participated in 914 projects and was involved as coordinator in 55 projects receiving €170.8m from EC contribution³².

The numbers reflect relatively **intensive international research collaboration** of Slovenian R&D units, both PRO as well as SMEs. Most common funding instruments remain collaborative research projects (53.6%), to be followed by coordination and support actions (23.3%) and SME measures (8.4%). As the “pull” factors, the existing international networks need to be mentioned as well as the ambition on behalf of research units to participate in EU research. The **ability to gain additional research funds** is also an important motivational factor, indicated by the interviewees, even though many research groups find it easier (or with less strings attached) to apply for the national research funding.

Yet the rigidity of the system put in place by Slovenian Research Agency (SRA), where so called “Research group programmes”³³ are funded for four to six years period with 99% probability of extension of funding³⁴, allowing very low number of new entries into the funding system, “pushed” many researchers to seek EC funding. While the research group programmes have maintained relatively stable financing of SRA, the calls for basic or applied projects have suffered significant cuts both in terms of amount of available financing as well as in terms of frequency of the calls. Also, calls for post-doctoral research programmes have been much smaller³⁵. Since the system of Research group financing remains in place for most of the H2020 period³⁶, it is highly unlikely that more funds will be made available for basic and applied projects of shorter duration (18-24 months). This suggests that the lack of **financing for newcomers into the research field** will continue to be an important push factor towards EU applications during the H2020 as well.

One of the problems observed in analyses of Slovenian participation in FP7 is **relatively low success rate** (MESS, 2015). While Slovenian researchers are submitting numerous proposals, only 14.7% succeed. Especially low is the success rate with the European Research Council (ERC) with only 3.1% and already very low submission of proposals.

One of the observations of MIRRIS project³⁷ was that due to the reward received by the SRA for submitting the application³⁸, many research units, especially among smaller either public or private

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http://www.mizs.gov.si/fileadmin/mizs.gov.si/pageuploads/Znanost/doc/Horizon_2020/doc/Inforamtivni_dnevni/2014_ERC/Uvod_v_Obzorje_2020_-_mag_Peter_Volasko.pdf

³² All figures on FP are based on EC FP7 Contract database, June 2014.

³³ The largest share of the basic and applied research is funded through so called “Research Group Programme funding” (hereafter RGPs), a system established in 1999 to secure stability in funding of the basic and applied research. See details on Research Group Programmes on ERAWATCH Country Pages:

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/si/country

³⁴ The RGPs are a long-term instrument, since once a research group is selected for funding it can re-apply to all subsequent calls. Since the data shows that there is practically no exit flow, the external evaluators (ERAC team in particular; see ERAC Report on Slovenia 2010) determined that RGPs in fact constitute semi-institutional or at least not fully competitive funding.

³⁵ Annual reports of SRA 2012; 2013 and 2014, available in Slovene on www.arrs.si

³⁶ Most so called »programme groups« were awarded a new financial support by 2015 for the next four to six years (ERAWATCH Country Report Slovenia 2014, to be published in 2015).

³⁷ <http://www.mirris.eu/SitePages/default.aspx>

³⁸ €1000 for partnership and €5000 for coordination.

research organisations, submit the proposals and/or accept the invitations to the international partnerships without necessary attention to the quality, simply to benefit from the reward. This observation led SRA to change the rules: award is now obtained only for the submissions which passed the EC threshold- which means they were of good quality, but did not get funded due to the high number of submissions.

Among the barriers to participation in FP/H2020 administrative and teaching work overload for research staff, especially at HEI needs to be mentioned. The law on higher education (OG 119/2006) allows for the teaching staff to work on top of 100% teaching hours also additional 20% of overtime, which is usually devoted to research. If an individual is engaged in research above 20%, he/she needs to lower proportionally his/her teaching commitment (up to 50%). This is in principle a viable option in the case of obtaining additional research money; the problem arises due to the question of security of both job and the pay. While teaching is paid from the state budget and thus accounts for relatively stable funding, projects may end. Getting back the “old” teaching commitment may not always be simple to implement. Potential problem with losing a secure 100% teaching salary discourages individuals to get more actively involved in research. Also, teaching employment is usually regarded as permanent contract, while research contracts are always limited to the duration of the research project. Much is expected from a new Law on higher education and the new Law on Research and innovation, where the flexibility of combining teaching and research is expected to be regulated better as well as more job security provided for the full-time researchers (STC, 2015). Both Laws are a priority for the Ministry of Education, Science and Sports and were expected in 2015, yet in view of the most recent personnel changes³⁹ it is difficult to predict when this will happen.

Also, in recent years, due to the austerity measures, Slovenia passed a set of rather complex employment policies at publicly financed HEIs and PROs. On one hand, prior approval from the MESS needs to be obtained for any additional employment, while on the other hand time-bound contracts also qualify the employees for the redundancy settlement⁴⁰. Both provisions make it harder to adjust the number of research staff according to the project money inflow, thus somewhat de-stimulating drive towards higher level of internationalisation of research.

Still, in view of the shrinking national research funding⁴¹, the motivation to apply for H2020 projects is very high in the research community, according to the interviews. Since the evaluation criteria of SRA recognise the participation in international/European projects as an important achievement of the research team and/or individual, this provides additional motive to the researchers.

³⁹ At the time of writing this report (April 2015), there was no minister or state secretary at MESS. After one minister had to resign in early March due to affair with high additional payments at her earlier job, the newly appointed one stepped down only after 5 days in the office on account of plagiarism. Such situation additionally incapacitates MESS at times when several crucial documents need to be prepared to achieve set objectives in H2020/ ESIF. On May 13th, 2015, a new minister has been appointed.

⁴⁰ This used to be available only to employees who lost their job, for which they da a permanent basis.

⁴¹ Only the budget committed to SRA had declined from €185m in 2011 to €115m in 2015. (data obtained at MESS, March 2015)

5 POLICY INSTRUMENTS FACILITATING THE PARTICIPATION IN (FP7) H2020 / (SF) ESIF

One of the few relatively stable areas of work at MESS is the department of international cooperation, including the National Contact Points network. Most of the NCPs are at MESS, where it happens that an individual may be in charge of more than one area. The network implements regularly the promotional policy for H2020 with organisation of various events, coordinated with the EC. Their prime policy instrument to facilitate the participation is **providing information on the calls** and the organisation of occasional events where particular instrument is being presented (for example, special event on Marie Curie Skłodowska Fellowships). Occasionally, basic training is provided, focusing mostly on the specifics of individual instruments. Still, besides the promotional activities and awards provided by SRA to the successful applicants⁴², no other specific policy instruments focusing on facilitation of the participation in FP7 were available.

It is envisaged that there will be additional resources available for the NCP Network during the Horizon 2020/ESIF to strengthen the network, expand the support and provide for the increased number of experts and intensification of the work to be done. According to NCP coordinator⁴³, the specific content of the services to be provided by the NCP network is being discussed during the preparation of the implementation plan for ESIF.

At the level of individual research organisations, the situation is very different from organisation to organisation: some have **dedicated offices for the EU projects** and specialised staff, dedicated to the assistance in preparation of the project documentation and financial reporting. Others work with smaller **consultancy agencies**, which provide such services, increasingly on a commission basis. Still others only occasionally get involved in international research as partners. Especially larger research institutes and increasingly the universities are actively promoting participation in H2020 and other international research calls. For example, Ljubljana University⁴⁴ even formulated a special internationalisation strategy with a set of targets, related to the mobility, project participation, training and coordination.

During the last decade, several consultancy firms have emerged, offering both- counselling with regard to applications to various EU programmes as well as with regard to SF/ESIF funding. They offer training, project proposal drafting and/or management of the project with all of the reporting. Many smaller PROs as well as business firms decide to engage them, since they lack the experience and personnel.

The SRA has an instrument supporting the applications to the FP/H2020 projects (mentioned in chapter 4), where the applicants to the calls may apply for an award of €1000 (partner) or €5000 (coordinator).

The promotion of instruments co-financed by SF was implemented by the respective ministry/agency. Already during the preparation of the Operational Programmes (OP)⁴⁵, potential instruments were presented to various groups of stakeholders, from the business community through the presentations at the Chamber of Industry and Commerce to the public research community through organisation of specialised events. Further, with each call, once it was

⁴² See section 4, p.17 as well as footnote 33.

⁴³ Interview held with head of NCP network, March 2015.

⁴⁴ http://www.uni-lj.si/research_and_development/cooperation_of_the_university_in_eu_programmes/

⁴⁵ Office of Government for Local Self Government and Regional Policy (2007) Operational Programme for strengthening regional development potentials 2007–2013. Available at: http://www.svlr.gov.si/fileadmin/svlr.gov.si/pageuploads/KOHEZIJA/OP_RR_USKLAJENO_08_06_07_poslano.pdf.

published in the Official Gazette, a special event was always prepared by the implementing body, announced on the web page of respective institution and the ministry in charge, explaining the specifics of the call and major expectations of the funder. In most cases the implementing body prepared a special web site for most frequent questions and established a contact point for further clarifications for the potential applicants.

Since several instruments received significantly larger financing than in the past⁴⁶, the interest was also considerable and most of the calls were over-subscribed. An extreme case was the call for centres of excellence (with total funding available of €84m), where it was decided that individual project could receive up to €10m funding, both for the research infrastructure as well as the research itself. The call attracted as many as 61 applications, but only 8 received the funding. Such high level of selectivity resulted in numerous complaints, in spite of the fact that the selection criteria⁴⁷ were announced at the time of the call, stating already at the time what is the potential number of final recipients.

What was a novelty, introduced during the 2007-2013 period, was publication of the results of most of the calls on the publically accessible web pages (Technology Agency, MHEST, PAEFI, SEF): for those receiving the funding with names and the amounts, for those who did not make it, only the code of application and the evaluation score. According to interviewees, this increased transparency contributed to accountability of the recipients and in most cases helped de-mystify the evaluation process.

Even though some doubts were expressed as to the absorption capacity of R&D units (public as well as business) in view of the increased funding available due to the SF, no major difficulty was experienced in R&I field. In fact, the government relocated certain funds planned for other areas to R&I calls, since it was possible to design new support measures quickly enough to absorb added funds with no difficulty (Research voucher scheme was one such measure, announced in the end of 2012; see details in ERAWATCH Country report 2012)⁴⁸.

In terms of policy mix design, several instruments which were introduced during the FP 2007-2013, responded well to the identified challenges of Slovenian National Innovation system (NIS). In particular, the discussion prior to the formulation of Operational Programmes (OPs), often pointed to the lack of cooperation between PRO and business sector, both in the initial process of defining S&T priorities and then further down value-chain: from more fundamental to applied research and finally to the experimental production⁴⁹. The findings of this evaluation were in the background of

⁴⁶ Policy area "Knowledge transfer and poles" had received majority of ERDF funds, with the following most important measures:

- centres of excellence (public tender of MHEST in 2009; 8 R&D centres of excellence were selected, based on the evaluation by international and national experts) ; total funding €84m,
- competence centres (public tender by MHEST; 7 competence centres selected, total funding €45m;
- development centres (public tender of Min. of Economy in 2010; 17 Centres selected) total funding €185m;
- Strategic research projects (public tender by Public Agency for Technology- TIA; value of individual project approved between 1 to 3 million EUR, with €26 m.
- Subsidies for investment in new technical equipment for SMEs, Slovene Enterprise Fund;; €80m;
- Direct subsidies for joint development-investment projects (public tenders of Public Agency for Technology of the Republic of Slovenia- TIA) €50m in 2009 and again in 2010;
- R&R projects in companies, public call by PAEFI.

In comparison to pre-structural funds days, when annual budget for all R&D and innovation support measures was between €25-30m, this represented significant increase. (Kavaš and Bučar, 2011).

⁴⁷ The selection criteria for Centres of excellence were primarily three: the relevance of proposed Centre with regard to Slovenian Development Strategy, the quality of the proposed partnership and the scientific excellence of the proposed activities. The latter was assessed by the team of international experts (Bučar et al, 2014).

⁴⁸ Available at http://erawatch.jrc.ec.europa.eu/erawatch/export/sites/default/galleries/generic_files/file_0487.pdf

⁴⁹ Bučar, M., A. Burger, B. Udovič, D. Kavaš, K. Koman, S. Knežević and P. Stanovnik (2010) *Učinkovitost ukrepov Ministrstva za visoko šolstvo, znanost in tehnologijo za spodbujanje inovacij in tehnološkega razvoja v slovenskih podjetjih v letih*

the Programme of measures to support entrepreneurship and competitiveness, prepared and adopted by the Ministry of Economy during the same time as the OPs were being prepared.⁵⁰

The instruments introduced in the OPs were addressing this challenge: centres of excellence were established to address the priority selection in combination with high quality basic research⁵¹, competence centres⁵² were to focus on more applied research and development centres in combination with the support for development and investment projects were to address the final stage of transfer of new knowledge in the production. While in the centres of excellence the proposals were primarily drafted by the PROs in co-operation with business sector, the competence centres were business-led, but had to involve PROs. Development centres were dominated by the business sector, as were mostly the development & investment projects. So in principle, the complete R&I process was to be covered. Yet in the implementation of the instruments this “chain” was no longer present, since the calls were implemented at different times, centres of excellence and competence centres were established in different fields, and most of the resources for development and investment projects were distributed even prior to the establishment of any of the proposed cooperation organisational forms in the country. While the first two instruments were implemented by the Ministry of Education, Science and Sports, the support for the Development centres was under the Ministry of Economic Development and Technology.

To real benefit from such a comprehensive policy mix, the instruments should be kept in NIS over a much longer period, with clear commitment to form alliances within topical areas. With the gap between one and the other OP, each of the instruments is an independent undertaking, significantly limiting synergy effects or any long-term effects. In addition, the drafting of the OP for the 2014-2020 period was happening during the time of frequent personnel and organisational change, so there is still a need to fine-tune the instruments and agree on the implementation. The institutional changes (discontinuation of TIA, shift of technology unit from one to the other ministry) as well as several personnel changes hinder the learning process, so the experience (both positive and negative) obtained during the 2007-2013 period is to a significant extend lost.

2005–2007: *ciljni raziskovalni program*. (Effectiveness of the MHEST measures for promotion of innovation and technology development in Slovenian enterprises in 2005–2007). Ljubljana: Fakulteta za družbene vede.

⁵⁰ Ministry of Economy (2007) *Programme of Measures to promote entrepreneurship and competitiveness 2007–2013*. Available at: http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/DPK/Program_ukrepov_angl_071009.pdf

⁵¹ Among the positive characteristics of the centres of excellence the following need to be mentioned:

- Inter-disciplinarity, since the centre of excellence joins together different scientific fields, relevant for a particular area. This by itself has been a novelty for Slovenia where public financing of basic and applied research is usually divided according to the scientific fields and little cross- or interdisciplinary research finds sufficient financial support;
- Joining of the research teams at research institutes, at universities and in business firms on equal footing;
- Joint sharing of the research equipment not only between the public research units, but in particular with the business community. Most of the high tech equipment for research in the areas where centres of excellence have been established is for Slovenian circumstances extremely expensive and only the formation of a centre of excellence and the co-operation at such scale makes it possible for the researchers to get access to this type of equipment;
- Benefit for the postgraduate students and young researchers who could use the sophisticated equipment for their research and participate in the on-going research activities of the Centre (Bučar et al, 2010).

⁵² The main idea behind the establishment of competence centres was to provide environment for development of specific product/service on the basis of applied research, where business-led partnership with PROs identified the area of joint work.

6 EVALUATION AND MONITORING MECHANISMS

Evaluation mechanisms of proposals submitted under SF calls for Research and Innovation (R&I) differed with respect to which funding agency was implementing them. The instruments financed by the Ministry in charge of science (Centres of Excellence and Competence Centres) involved international evaluators for the scientific content of the proposals and the national experts for the relevance and quality of the project team. The proposals had to be submitted in English, following a prescribed template. The evaluation was performed both, on distance and at the consensus meetings where previously awarded grades were compared to reach a common decision. The procedure tried to follow the practice of the FP evaluations as closely as possible.

On the other hand, the Technology Agency and the Ministry of Economy prescribed in the call already the criteria for the assessment⁵³ of the project proposals to a high level of detail. They did not use foreign experts, but developed internal database of national experts in different technical areas, from which the evaluators for specific calls were invited. During the interviews, it was stressed that the avoidance of possible conflict of interest was strictly respected. What was a novelty in the SF calls which became a standard practice was the transparent announcement of the results and the amount of financial support received by each of the selected projects.

Some of the smaller calls (vouchers schemes, for example) were internally evaluated. A particular exception was only a one-time call for research vouchers where the only selection criterion was how early the project had been submitted. The qualifying condition was that the project needed to consist of the engagement of PRO for a specific research task, which the enterprise needs and is prepared to co-finance. The amount of co-financing depended on the size of the enterprise: in the case of small firms the co-financing was less than 50%, in the case of larger firms up to 60%. The Ministry pre-set the total amount available for the call and once there were so many proposals submitted that the money was spent, any further submission of the project proposals was stopped. It took less than four hours on the day of the submission to distribute all of the planned resources.

At the moment, the evaluation of the instruments and measures financed by SF during the financial perspective 2007-2013 is still under way. What had been evaluated so far are the Centres of Excellence and Centres of Competence at the level of the instrument (Bučar, Stare and Udovič, 2014), mid-term evaluation of the impact of instruments for the promotion of research and development activities in business sector and knowledge institutions (MK Projekt, 2012) and partially the Development and Investment projects (TIA) and the Strategic Research and Innovation Projects. The latter were assessed within, a national evaluation of the support measures commissioned in the spring of 2012 by the former Ministry of Economy during the 2004–2009 period⁵⁴. This evaluation was not directed solely at the calls financed through the SF, but wider at all the instruments applied by the Ministry to support RDI in SMEs. It stressed the need to provide more systematic and harmonised support, avoid frequent changes in the types of measures, and introduce various indirect support measures like support to innovation through public procurement, public-private partnerships and innovation infrastructure support.

⁵³ The public calls included a section on criteria where most often the technical quality of proposal brought 60% and the business quality 40% of the total grade. Technical quality was further broken down to: technological/ scientific excellence of the project, technological potential, quality of the project team and ecological contribution. Business quality was assessed according to expected business impact, quality of the leading business partner and organisational scheme of the project. http://www.spiritslovenia.si/resources/files/doc/javni_razpisi/TIA/RIP2009/besedilo_razpisa_2.pdf

⁵⁴ The evaluation was conducted by a team of researchers at the Ljubljana Faculty of Social Sciences (see Jaklič *et al.*, *Evalvacija izvajanja politike podjetništva in konkurenčnosti*).

A team of experts, appointed by the European Research Area and Innovation Committee (ERAC), carried out an external evaluation of Slovenian innovation system⁵⁵. Their findings also point out the issues of priority setting and coordination. They even state that *'[t]he future governance structure will be a key element in delivering an efficient national innovation system with a clear political direction and with stronger connections between the "innovation actors" working towards common and not competing aims'* (ERAC, 2010: 14).

No evaluation of the institutions was done with specific regard for the SF/ESIF or FP/Horizon2020. As an institution supporting national R&D activity, an evaluation of the Slovenian Research Agency (SRA) was carried out in 2013 by the European Science Foundation. The particular focus of the evaluation was the process of the evaluation of the submitted proposals for the research programmes/ projects to be funded by SRA, especially from the point of criteria used and neutrality from politics. SRA was assessed as sufficiently independent and able to demonstrate that the selection has been implemented primarily on basis of scientific excellence and not interference of politics or lobbies.

In the fall of 2014, GODC published several public calls for ex-ante assessment of the Operational Programme 2014-2020 in the field of research and innovation. Neither the selection process nor the results of the ex-ante analysis have been made public⁵⁶.

⁵⁵ European Union Scientific and Technical Research Committee, *ERAC expert group report on the design and implementation of national policy mixes Policy Mix Peer Reviews: Country Report – Slovenia*, available at http://ec.europa.eu/research/era/pdf/policy-mix-peer-review_slovenia_en.pdf (23 December 2010), p. 14.

⁵⁶ http://www.svrk.gov.si/si/o_sluzbi/javne_objave/javna_narocila/?tx_t3javnirazpis_pi1%5Bshow_single%5D=990

7 ENHANCING OR LIMITING THE SYNERGIES?

According to the interviews, during the financial perspective 2007-2013 the issue of combining the SF funds with the FP funds was not raised. In fact the two types of financing were combined only by coincidence by some of the R&D performing institutions, who had to be careful not to be suspected of double financing. In discussing this issue with different stakeholders, especially the research institutions, the uncertainty related to the issue of double financing was often mentioned. Several interviewees mentioned a rather rigid approach of the Court of Audit to this issue, which in turn made the financing agencies apply rather strict rules with regard to eligibility of costs under SF/FP/national funding. Approach to eventually enhancing synergies was not practiced, nor were the factors limiting the synergy removed. The impression from the interviews was that in fact no attention was paid to stimulate the synergy and the preoccupation was geared primarily to avoidance of eventual double financing.⁵⁷ The calls for the projects to be co-financed with SF were designed regardless of the FP calls⁵⁸, so as a rule, time-frames were different, reporting requirements on the implementation were different and most importantly, the objectives were different. So even though the research institutions in practice financed their activities by combining the resources, they were very careful not to stress this, but kept the projects separately administered.

The only activity in support of applications for FPs was the reward system for the applicants, provided by SRA, mentioned in the Section 4. For the financial period 2014-2020, it is proposed that an automatic recognition of the evaluation of the project proposals by the European Research Council is to be accepted by the SRA and national funding provided for all the submissions which will make it over the threshold⁵⁹. The interviewed policy makers believe that more synergies can be expected in the domain of research infrastructure, where already today some of the national infrastructure facilities are engaged in the EU networks and can thus benefit from EU funding as well as receive priority treatment at the national level.

In principle, some of our interviewees suggested that the practice of accepting external (EU) evaluation of research proposals, whether for the calls in the R&D or innovation area, would be a good development and would probably lead to even higher level of transparency and independence. Yet it was the very same respondents, who believed that only the national experts can correctly assess the relevance of the project and the qualification of the submitter. They were unsure as to how accepting an external evaluation in the cases of the calls for SMEs would work and were rather hesitant to suggest external (foreign) evaluators for the ESIF calls, which will focus more on the instruments supporting SMEs. It seems that designing instruments to reap the synergies of ESIF/Horizon 2020 was not really one of the considerations, at least not for the instruments to provide innovation support. Also, in one of our interviews with a representative of funding agency it was suggested that the practice of designing the instruments in a very detailed manner limits the flexibility of the funding agency to adjust the instrument during the implementation to the possible synergetic effects: if a more general approach would be taken, the implementing agency could have the freedom in shaping individual calls to better accommodate them to the on-going schemes within the Horizon2020 and enhance the synergies. The way the policy mix is constructed in Slovenia now (or was in the past financial perspective), already the Operational Programme identifies very specifically the objectives and contents of each instrument, with the targets to be achieved. Any change or adaptation later is hardly possible.

⁵⁷ In several other analysis of the use of structural funds in Slovenia often the criticism is that the authorities approach the process in a highly bureaucratic manner, focusing on minor technicalities instead on the content and impact (Kavaš, 2012).

⁵⁸ The low level of integration of FP funded projects even in the national research framework was observed by evaluators of Slovenian NIS (ERAC, 2010) as well as in ERAWATCH Analytical Reports.

⁵⁹ This would mean that the approach suggested by the Commission of awarding »seal of excellence« would be introduced in Slovenian R&D national funding. (see details on the idea on http://ec.europa.eu/regional_policy/sources/docgener/guides/synergy/synergies_en.pdf; p. 35.

The overall impression on the basis of the interviews is that while designing the implementation modes for ESIF, little consideration is given to the issues of synergy with H2020. While the MESS people are aware of the issue and see possibilities to design some of the ESIF instruments so as to improve access to H2020 to Slovenian research community, this was not yet observed in the interviews with other policy makers. Of course, with the implementation documents still being designed, it is premature to pass the final judgement how supportive or limiting the instruments will be. The new type of schemes at EU level, like “seal of excellence”⁶⁰ and “spreading excellence and widening participation”⁶¹, where Slovenia enjoys the priority in joining, also stimulate policy makers to be more supportive towards synergy approaches.

⁶⁰ <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=19620&no=3>

⁶¹ <http://ec.europa.eu/programmes/horizon2020/en/h2020-section/spreading-excellence-and-widening-participation>

8 TAKE-UP OF PUBLIC SECTOR RESEARCH RESULTS

Lack of systematic evaluation of the instruments, co-financed during the 2007-2013 period, is the key limiting factor to be able to verify the number of transfers of knowledge from PROs to business sector. The evidence available is limited to the mid-term evaluation of the impact of instruments for the promotion of research and development activities in business sector and knowledge institutions (MK Projekt, 2012) and the evaluation of the **centres of excellence and competence centres** (Bučar, Stare and Udovič, 2014).

The main mid-term achievements of the SF measures in the area of research and innovation policy, identified by the mid-term evaluation (MK Projekt, 2012: 6) were the following:

- €276.3m invested resources, out of this €218.7m from public finances, rest from private sources;
- 1,671 Full Time Equivalents of research accomplished, or 371% realisation relative to the planned targets;
- 176 supported projects or 26% more than planned. Out of this: 83 supported private R&D projects and 93 research projects in Centres of Excellence – co-financed by companies.
- 47 innovations and 22 patents, which is 2/3 of the plan for the entire period;
- 94 new partnerships with private sector;
- 1,5 m € of value added (less than 10% of the plan).
- 15 new Doctors of science and 2 Master degrees, on average for 140.000 € for each (Instrument “Young researchers”).

With this evaluation, it is important to note that a limited number of instruments in the RDI area were taken into account on one hand and on the other, the full effect of some of them is only now (2015) bringing results like increased value-added.

The evaluation of the centres of excellence and competence centres focused primarily on the evaluation of the suitability of the instrument itself. Still on the basis of the final reports by each of the centres it is documented how transfer of knowledge was implemented. While the primary task of Centres of excellence was creation of new basic knowledge, the competence centres were to a larger extent involved in applied research and bringing results to the private sector.

The competence centres reported that until the submission of their final reports (first quarter of 2014) their work had resulted in 117 innovations and 51 patents. Even during relatively short time of their existence (3 years), they have already managed to bring certain applications to the pre-production stage and are intensively working on further transfer of the results to the production and marketing stages. Part of the reason for such a successful transfer is according to them⁶² good co-operation even prior to the formation of competence centre, business leadership of competence centre⁶³, which meant that research content and dynamics were set by the business partners and ability to draw on additional resources provided by SF, which made it possible to engage more fully in the research activities (engage additional human resources). The partnerships established during the years when co-financing was available has in all cases been extended, either by providing own finance (business partners) or/and by applying for financial support internationally. In this regard, it was pointed out in the interviews that the acceptance that a competence centre (even though it is a consortium of more institutions) as a single partner when getting involved in HORIZON2020 projects, is a significant benefit for them.

⁶² Most of the evaluation was based on the interviews with partners in each Competence Centre.

⁶³ The most important characteristic of competence centre is that the consortium must involve as lead partners business firms, who specify the main research and development area and set clear goals in terms of commercialisation of the research results.

Similar, even though somewhat less pronounced, is the story of centres of excellence. As already mentioned, their task was more focused on basic research. Still, they produced a number of patents, cooperation projects with business sector and spin-offs. In some cases it is difficult to assess how much of the basic research existed already prior to the formation of the Centres of excellence, so all of the reported patents were not the result of the research done during the period of co-financing. Yet through the interviews especially partners from the business community expressed a firm belief that the partnership in Centres of Excellence improved significantly the linkages between the PROs and business R&D units and open new ground to successful and focused cooperation in the future. The collaboration with business partners in view of PROs sometimes shifted the research priorities in favour of more focused search for solutions, relevant for the business partners (instead of opting for blue-sky research).

The experience with these two instruments, co-financed through ERDF, is highly relevant for the financial perspective 2014-2020. Many positive developments, like increased cooperation between PROs and business R&D units, both scientific and technological findings, patents and licenses, etc., occurred and both instruments should find room in the OP (Bučar, Stare and Udovič, 2014). According to the interviews with the policy makers, the idea is to continue with support, although in somewhat modified version. So far, the modification which was made explicit is the financing, which will no longer be 100% as it was in the case of Centres of excellence. The exact shaping of the instrument is not yet decided on and depends also on the further elaboration of the RIS3.

Among the instruments of the previous financial perspective it will be important to assess the experience with the **innovation vouchers**, where a direct subsidy to business sector in projects with PROs was provided. The proposals were submitted by the business sector and co-financed by them. Since this was (as explained earlier) the first time that no evaluation at the proposal stage was required it will be interesting to see whether the results will meet the expectations of the applicants as well as the financing agency.

In previous financial perspective, Slovenia did not introduce any instruments related to either lead market initiative, public procurement of innovation⁶⁴ or cluster support. The idea of Living Labs is mentioned in the Operational Programme 2014-2020, but with limited information as how the exact instrument will be shaped.

⁶⁴ The introduction of such instrument has been discussed often, but not yet implemented. It was mentioned again during the discussion on RIS3 (event on 15 and 16th of June, 2015) by the minister in charge of GODC as one of the potential instruments to be considered in the RIS3 implementation.

9 COUNTRY TAILORED POLICY SUGGESTIONS

According to the existing system of financing RDI,⁶⁵ only broad contours of research and innovation policy priorities are defined and within them, competitive public calls are issued. An important segment of public allocation of RDI funding is decided through a bottom-up approach (See ERAWATCH 2010, 2011 for details)⁶⁶. This approach and the lack of more pronounced priorities in the field of research have often been criticized (OECD, 2011; ERAC, 2010). Slovenia has not included in its strategic documents priority areas, which would correspond to EU definition of frontier science or organized its RTD policy according to thematic areas: in fact the current public funding of Slovenian research via SRA research programmes and projects is focused on scientific excellence *per se* and allows for significant degree of bottom-up initiative in the selection of specific priorities. While RISS identified major thematic fields of research, the decision on more specific R&I priorities was left to RIS3. The delays in the preparation of the RIS3 are partly the result of **difficult decisions as to the priorities** and lobbying of the main stakeholders in the RDI field.

The situation could be considerably improved by **more cohesion among the main actors (MESS, MEDT, and GODC) in policy design** and their increased cooperation in the preparation and implementation of the main policy/strategy documents. Slovenia as a small country needs to recognise that it needs to employ all of its human resources wherever they are: in government offices, in HEIs, in PROs, interest groups, business community in search of the optimum design of the future orientation. Vested interests can only lead to a fragmented policy design and favouritism of certain stakeholders on the account of others. The analyses undertaken during the preparation of the RIS3, identifying the potentially relevant priority areas both for the research and business community (Burger & Kotnik, 2014) as well as several other evaluations (OECD, 2011; ERAC, 2010; Jaklič et al. 2012; Reid & Stanovnik, 2013; Bucar et al. 2014) provide sufficient background advice to policy makers. What seems to be still missing is **realisation of the importance of RIS3** for the future of not only RDI in Slovenia but for the development of economy and increased competitiveness. To a certain extent this has improved in late spring-early summer of 2015, with GODC initiating a submission of partnership ideas through a public call and then presented the most viable ones at a two days conference on RIS3. The conference⁶⁷ itself received good media coverage, since its opening was attended by the prime minister and the ministers responsible for economic development, education, science and sports and head of GODC.

A clearer division of labour and responsibilities of all participating parties need to be established, so that the organisational framework in support of ESIF/HORIZON 2020 is transparent and easily understood to all stakeholders. This would prevent overlapping of the instruments and make the potential for synergies more obvious. Also, clearer division of labour would help identify “blank spots” in the policy mix and open the possibility to design adequate measures to overcome this problem.

One of the weaknesses of the NIS in the years 2014/2015 due to the fact that the documents for new financial perspective are not finalised yet, are the **insufficient instruments for business**

⁶⁵ Which has so far not been modified in line with RISS.

⁶⁶ http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/reports/countries/si/report_005

⁶⁷ http://www.svrk.gov.si/en/media_room/news/article/1328/6039/50f3554d51ecc16efe5eb9877e0312c7/

R&D and innovation support. The closing of Technology Agency and the lack of funds at the division for technology at MEDT have resulted in smaller number of support instruments as well as in lower amounts of support available per project. Still, MEDT succeeded to maintain the support for Slovenian Enterprise Fund, which is continuing with its instruments and the financing available through Slovenian Export Bank (SID). The government should speed up the preparation of the required documents so that the resources available through ESIF will be available to business R&D.

It was suggested during the interviews that achieving better synergy effects of ESIF/Horizon 2020 funding would be easier if the instruments are not designed in a too detailed manner. There should be room left for the adjustment of the instrument so that it would be possible to accommodate the conditions of other measures and calls, both national as well as EU ones.

In designing the instruments to support RDI it needs to be acknowledged that Slovenia still has a relatively high share of R&D and innovation inactive SMEs, especially in service sector. Often, these enterprises do not recognise the benefits of investing in RDI and are thus highly unlikely to apply for semi-commercial loans for investment in RDI. To promote investment in RDI among the inactive SMEs subsidies of certain kind may still be needed, so such instruments should be kept.

The Slovenian instrument, which had often been labelled as “good practice” is no doubt the **support for the young researchers**, both the original measure as well as its derivate, focusing on young researchers from the industry. In view of the increased brain-drain due to the growing mobility of younger generation and lack of employment opportunities in R&D sector, it is essential to revive both instruments and provide the resources at the appropriate level.

One of the specific problems, observed in the RDI policy-making, especially the preparation of the RIS3, is the attitude of policy makers towards the EU policy advice. If Slovenia was one of the most eager pupils during the accession period as well as during the early years of membership – introducing EU-inspired measures even with insufficient reflection on suitability for national circumstances –, it seems that lately the country has digressed from this path. The Commission’s requests and suggestions are not addressed with sufficient attention and their relevance is downplayed (Bučar and Stare, 2014). The delays in the preparation of the ESIF strategic documents are in part the result of such attitude. Yet, at the end of the day it is PROs and business RDI units who are left without the expected support.

10 REGIONAL ANALYSIS

Due to the size of its population (2m), Slovenia was in the financial perspective 2007-2013 still considered as a single region at the NUTS 2 level. For the purposes of cohesion policy, it was agreed that two cohesion regions were formed.⁶⁸ Even so, the Government decided to prepare a single national S3 and corresponding OP. One of the key reasons behind such decision is that while the division of the country into two cohesion regions makes sense from the point of view of average BDP per capita, it is not opportune to use the same division for the RDI policy. Both regions have on one hand very innovative enterprises and on the other a number of inactive SMEs. The HEI and PROs are more developed in the central/western cohesion region, since many are located in the capital of Slovenia. Due to the size of Slovenia it would not be wise to duplicate the research infrastructure in each of the cohesion regions.

⁶⁸ See details in ERAWATCH Baseload Inventory Slovenia;
<http://cordis.europa.eu/erawatch/index.cfm?fuseaction=ri.content&countryCode=SI&topicID=4>

ABBREVIATIONS

COSME	Competitiveness of Enterprises and Small and Medium-sized Enterprises
EC	European Commission
ERC	European Research Council
ERAC	European Research Area and Innovation Committee
ERDF	European Regional Development Fund
ESF	European Social Fund
ESIF	European Structural and Innovation Funds
EU	European Union
FP	Framework Programme
GODC	Government Office for Development and European Cohesion Policy
H2020	Horizon 2020
HEI	Higher Education Institutions
IPTS	Institute for Prospective Technology Studies
MEDT	Ministry of Economic Development & Technology
MESS	Ministry of Education, Science & Sports
MHEST	Ministry of Higher Education, Science & Technology
MIRRIS	Mobilising Institutional Reforms in Research and Innovation Systems
NCP	National Contact Points
NGO	Non-governmental organisations
NIS	National Innovation System
OECD	Organisation of Economic Cooperation and Development
PAEFI	Public Agency for Entrepreneurship and Foreign Investment Promotion
PRO	Public research organisation
R&D	Research & Development
R&I	Research and Innovation
RDI	Research, Development and innovation
RIS3	Research and Innovation Smart Specialisation Strategy
RISS	Research and innovation strategy of Slovenia
S2E	Stairways to Excellence
S3	Smart Specialisation Strategy
SEF	Slovenian Enterprise Fund
SF	Structural funds
SME	Small and Medium Enterprise
SRA	Slovenian Research Agency
TIA	Technology Agency
SPIRIT	Slovenian Agency for Entrepreneurship Promotion, Promotion of Foreign Investment and Tourism

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