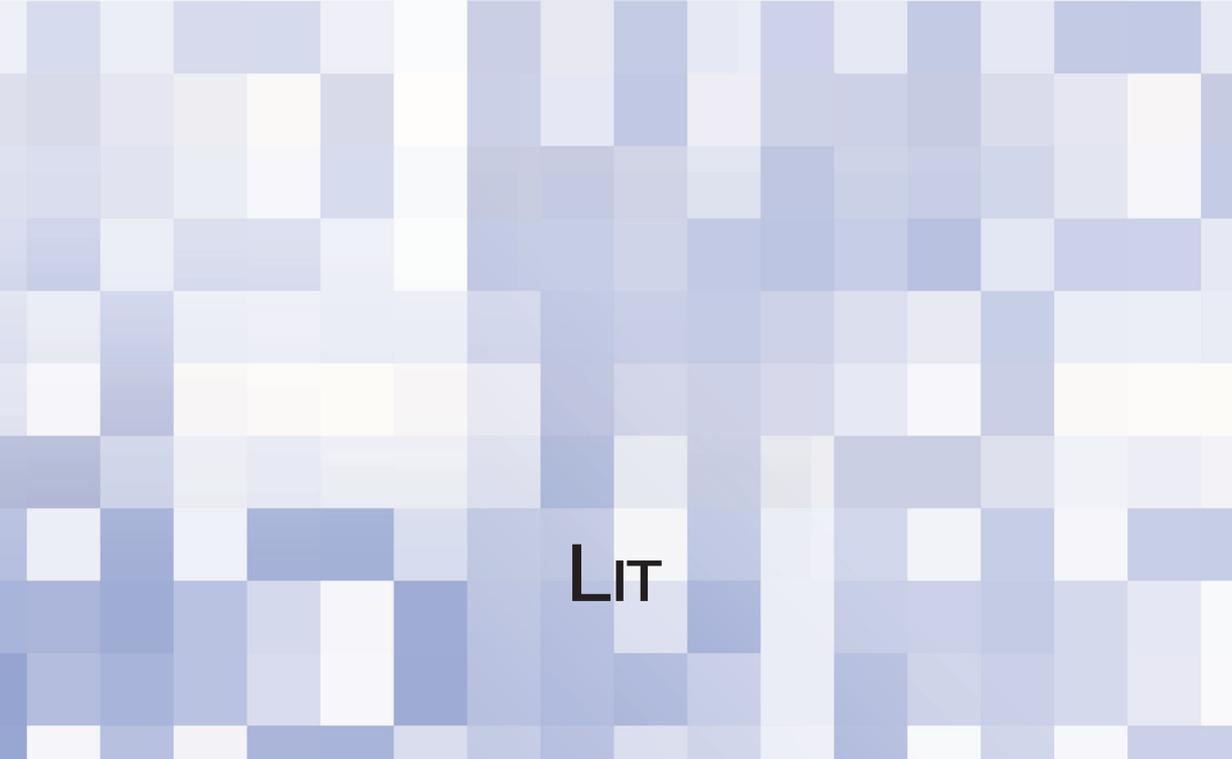


Developing RTDI Evaluation Culture in South East Europe

FOSTERING EVALUATION COMPETENCIES
IN RESEARCH, TECHNOLOGY AND INNOVATION –
THE EVAL-INNO EXPERIENCE

LIT



DEVELOPING RTDI EVALUATION CULTURE
IN SOUTH EAST EUROPE

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**Fostering evaluation competencies in research,
technology and innovation – the EVAL-INNO
experience**

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Fostering Evaluation Competencies
EVAL-INNO
in Research, Technology and
Innovation in the SEE Region



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Introduction

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Over the last few decades, the provision of public funding for basic and applied research was increasingly directed towards structural support for intermediaries, such as research support agencies, and to dedicated innovation support measures like innovation programmes at the national level. A variety of recent European funding programmes have triggered a policy and programmatic change that increasingly promotes industry-research collaboration. Evaluation also emerged more prominently on the scene as a tool for learning, and for better planning in various policy fields. It has become employed more intensively on the European level as well as in the support of national developments. In addition, necessary revisions to existing public support schemes, the influence of new regulations for state support, and limited or scarce resources in public offers has supported the development of evaluation as an important policy steering tool.

RDTI Evaluation in South East Europe

The complexity and heterogeneity of innovation systems in ERDF¹ and IPA countries² requires strategic intelligence to design, implement, and monitor research, technological development, and innovation (RTDI) measures at different spatial levels (local, national, regional, and European) by addressing issues of relevance, efficiency, efficacy, impact, and sustainability³. For this purpose, evaluations are an essential tool for evidence-based decision-making. This is especially true in the South-East Europe⁴ region, which is characterised by the adoption and adaptation of new⁵ RTDI policies, programmes, and (support) institutions, and a transformation of funding towards competitive schemes. At the same time, however, a lack of methodological and procedural know-how on

1 ERDF = European Regional Development Fund; applicable to EU Member States only

2 IPA = Instrument for Pre-Accession Assistance; provided on the basis of the European Partnerships of the potential candidates and the Accession Partnerships of the candidate countries, which means the Western Balkan countries, Turkey, and Iceland. In our regional context, we mean the Western Balkan countries.

3 Find also a dedicated article in: Klaus Schuch, Martin Felix Gajdusek: "RTDI Evaluation in South East Europe – Reflections based on the experiences of EVAL-INNO". In: Ines Marinkovic, Elke Dall (2014): *R&D and Innovation in Western Balkans. Moving Towards 2020.* p. 320-339.

4 The "South-East Europe region" is here defined administratively by the geographical borders stipulated by the South East Europe Transnational Cooperation Programme.

5 "new" is meant here as new in the regional context.

the part of both evaluators and awarding authorities concerning the purpose, design, and use of evaluations, has become evident.

In the face of dynamic developments in designing, launching, and implementing new RTDI instruments in the South-East Europe region, which have been expedited by the availability of structural funds to new EU Member States, the “Steering Platform for Research for Western Balkan Countries” identified, in 2010, the need for the better and more pro-active use of evaluations, in order to avoid waste in public expenditure, and called for regional solutions. Also the EU INNO-Appraisal project⁶, which took stock of, and assessed appraisal exercises, such as evaluations in the area of innovation policy across Europe, identified a significant difference between the application and use of evaluations between more advanced RTDI countries and new EU Member States and non-EU member states in the Western Balkans.

EVAL-INNO project

The EVAL-INNO project was designed in 2010 with the aim of strengthening regional and national evaluation capacities in order to improve the framework conditions for innovation policies, programmes, institutions, and projects. The operational project goals were:

- To promote the role of RTDI evaluation as a crucial condition for a reflexive learning innovation system;
- To develop the needed capacities and competencies for comprehensive RTDI evaluations; and
- To provide procedural and methodological know-how and tool-kits on the part of both evaluators and awarding authorities.

The underlying motivation for the project was that innovation capacities and innovation levels in the South East Europe region were too limited and that, therefore, public interventions were necessary. However, under tight financial regimes, public spending for innovation has to identify the right rationales and mechanisms for performance-based innovation funding from the start. To secure the optimum use of taxpayer money, principles of good governance have to be respected. Evaluations are considered to be an effective tool for ensuring transparency and accountability and can contribute to more efficient modes of

6 Edler, J., Cunningham, P., Gök, A., Rigby, J., Amanatidou, E., Garefi, I., Bühner, S., Daimer, S., Dinges, M., Berger, M., & Schmidmayer, J. (2010). INNO-Appraisal: Understanding evaluation of innovation policy in Europe (Project Report). Manchester Institute of Innovation Research - The University of Manchester, Joanneum Research, Atlantis Consulting, ISI-Fraunhofer, Wise Guys Ltd.

new public management. Also, the correct application of the different types of evaluations has to be learned in policy systems with continuously increasing complexity. This complexity results from vertical and sometimes quite different spatial intervention levels (i.e. local, national, regional, European, global). It is also affected by an increasingly complex web of rules and regulations (i.e. national/European/global) and by the emergence of horizontal multi-level policy systems cutting across previously more separated policy fields and stakeholder arenas (see for instance the Triple Helix Concept or the “knowledge triangle” approach). Ex-ante, interim, terminal, and ex-post evaluations have to be properly and meaningfully tendered, and must be implemented so as to secure strategic intelligence building and evidence-based decision making.

On the content of the current book

This book outlines the efforts that have been made to strengthen the RTDI evaluation culture in South East Europe, and discusses possible future options to continue this mission. At the same time, it highlights the strategic importance of evaluations, which are challenged by increasingly differentiated innovation policy and funding mixes, and are made all the more important by progressively more leveraged national budgets for research, technological development and innovation, as well as the need to develop and evaluate policies which bridge traditional policy fields. This publication presents the tangible evidence of the progress made by the EVAL-INNO project, and also provides insight into the trends of current RTDI evaluation. It stresses the need for similar initiatives in the future and provides guidance for future steps in the field.

The publication is thematically divided into three parts. In the first part, the reader will be introduced to the topic with an exhaustive comparative study on the contemporary evaluation culture in Austria, Bulgaria, Greece, Hungary, Montenegro, and Serbia. The second part of the publication presents the main achievements of the EVAL-INNO project, including: the RTDI Evaluation Standards ; the EVAL-INNO Evaluation Platform; the capacity-building trainings; the benchmarking of RTDI public research organisations in six different countries of the region, and the pilot programme evaluations in Hungary, Montenegro and Serbia. This part ends with a discussion on the sustainability of the projects results and outlook on possible future activities in the framework of a regional RTDI evaluation platform. The third part of the publication presents some concrete evaluation examples from the SEE region, prepared by international experts. The first contribution covers the ex-post evaluation of BICRO programmes in Croatia. This article is followed by the description of the external evaluation supervised

by the European Commission on the existing research quality and capability of the University of Montenegro. Another important evaluation exercise is described in an article about the evaluation of the Institute of Chemistry at the Ss. Cyril and Methodius University in Skopje. Finally, the last contribution presents a very current topic in EU research, the evaluation in the context of the Greek Smart Specialisation Strategies (S3). The external contributions highlight those practices that can be referenced in the design and implementation of future evaluations.

Indeed, one could find further evaluations from the region that might be helpful to include in future publications. Generally speaking, an openness to publish results contributes indirectly to an improved evaluation culture. We are convinced that publishing such evaluations on the EVAL-INNO website would contribute to more openness and productive discussion about the results and framework conditions for RTDI evaluation.

It is our intention that readers interested in RTDI evaluation, coming from public authorities in charge of innovation and research support, as well as the current and future evaluators in this domain, will benefit from this publication. We hope that the first steps which have been initiated within EVAL-INNO will inspire the stakeholders to support or establish similar initiatives in the future.

RTDI evaluation culture in the EVAL-INNO countries

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Introduction

RTDI evaluation is one of the critical elements of an effective RTDI policy cycle. It was suspected, from the beginning of EVAL-INNO that, with the exception of Austria, South Eastern European countries lacked an advanced evaluation culture. This can be attributed partly to an incorrect perception of the role of evaluation (they often see it as criticism and punishment rather than a way to improve policies) and partly because of a lack of skills. If skills can be developed, they are likely to create both demand and supply push, and trigger a new evaluation culture to flourish. Other paths forward, like the top-down imposition of evaluation, or bottom-up initiatives by evaluation champions, are other ways to help develop an RTDI evaluation culture.

RTDI evaluation is a function of, and at the same time, it is determined by:

1. *The overall evaluation culture in a country.* New public management is a term which denotes broadly the government policies, since the 1980s, that aimed to modernise and render the public sector more efficient. The basic hypothesis holds that the market-oriented management of the public sector will lead to greater cost-efficiency for governments, without having negative side-effects on other objectives and considerations. In this context, evaluation has become an integral part of public policies and RTDI. Like other public policies, it is as good as the overall public management.
2. *RTDI intensity and priorities.* In countries where RTDI is an important priority policy area, effectiveness is important and evaluation eventually becomes an integral part of it. Conversely, in countries where RTDI is imposed top-down, evaluation seems to be more of a threat than an opportunity. Eventually, an evaluation culture can be built bottom-up but can hardly be imposed only with top-down measures (political pressure helps; it is a necessary but not a sufficient condition).

The backgrounds of the countries studied, differs considerably: Austria is an innovation follower, aiming at becoming an innovation leader in the years to come. RTDI policy has improved considerably in the last decade and, although a latecomer in RTDI evaluation, it demonstrates rapid progress and a

rapidly embedding culture. Hungary, with its cultural ties to Austria seems to be following its path with time lags and significant institutional differences. Conversely, Greece, which has been an EU Member State for the longest period of time among the project participants, seems to have limited interest in RTDI evaluation. So has Bulgaria, which is the most recent Member State. Montenegro and Serbia have a different institutional set up, as they are not (yet) EU Member States and as such, they are not subject to the same support instruments and the same obligations for evaluations.

In the context of EVAL INNO we tried to investigate whether it was possible to benchmark the differences in the evaluation culture of countries so different. It was investigated as to how this can be done, and what policy lessons could be learned from such a benchmarking exercise.

Determinants of RTDI evaluation culture and specificities in SEE

The conceptual framework that we used to compare and benchmark the performance of the countries was based on the decomposition of the policy cycle and the procurement of evaluation studies into stages. The policy cycle is defined in terms of three broad stages which include¹: agenda setting and prioritisation, implementation, and evaluation and learning. The public procurement of evaluation studies (as with any public procurement), can be decomposed into the following stages²: identifying the requirements and user readiness, market intelligence; tendering process (codified in the Terms of Reference that include: background, data availability, questions and methods), assessing tenders, awarding contracts, and managing contract delivery.

We used these components as a basis for organising indicators for RTDI evaluations. The institutional set up is first studied by decomposing it into its formal parts (such as rules for when and how to tender) and the informal parts (such as behavioural routines), the actors that influence the scene, and finally the tendering process itself. Inputs were collected from: the academic literature, country reports on RTDI public procurement prepared by the EVAL-INNO partners, data and responses to a questionnaire from the online platform of the project, data on stakeholders from the online platform of the EVAL INNO project, and field work conducted through interviews focusing on the identification and strength of an evaluation culture, as well tendering processes and their benchmarking.

1 OECD (2005), Governance of Innovation Systems: Synthesis Report

2 ISI (2005) Edler, J., Hommen, L., Papadokou, K., Rigby, D., Rolfstam, M., Tsipouri, L. & Ruhland, S. 2005, Innovation and Public Procurement—Review of Issues at Stake. Study for the European Commission ENTR/03/04.

The whole exercise resulted in the selection of:

- *Objective (robust) indicators*, which were quantifiable. Such indicators were, for example, the number of evaluations, budgets for evaluations, and frequency. There were also qualitative indicators regarding quality and response;
- *Subjective (perceived) indicators*, which were based on interview perceptions. They were used to make up for the lack of objective indicators, but were subjected to criticism precisely because of their subjective interpretation. Such indicators included evaluations that were not systematically monitored or reported, the impressions that were given on the willingness of interviewees to support an evaluation culture and engage in the interview, professionalism and others.

All indicators were compiled and discussed with stakeholders in the partner countries and were approved in collaboration with them. Based on the concepts adopted, the following dimensions were used as determinants for the study: the institutional set up (formal and informal rules), the key organisations involved and the tendering process.

The formal rules indicating the existence (or not) of an RTDI evaluation culture were decomposed into:

- The budget thresholds for general provisions for public tendering. Some countries may decide to have lower thresholds than the formal EU rules, which may introduce more international competition and thus give RTDI evaluation a higher relevance than national competition alone would; .
- The existence (or not) of special provisions for RTDI evaluations (e.g. specific thresholds; individual selection procedures etc.);
- Explicit legislation (or not) regarding the legal obligation of awarding authorities to evaluate their programmes or organisations;
- The existence (or not) of evaluation standards.

Conversely informal rules refer to the routines adopted by awarding authorities, including how frequent evaluations are conducted, what types of evaluations are launched, and how they are (or are not) incorporated into future policies. In the conducted study, these were all subjective, and reported as perceived by the interviewers, since there was no systematic record anywhere.

Another important dimension refers to the number and maturity of stakeholders in each country. These stakeholders were the Awarding Authorities and indicators for them were decomposed into: their sensitivity to evaluation, and their experiences and their willingness to improve. These are subjective, with only the number of

awarding authorities being objective (and this is not particularly relevant). At the same time the number of evaluators and various attributes about them (i.e. were they local, national, international; issues of independence, expertise and reliability for evaluators called for direct or restricted tenders; how can the market evolve in the future) was seen as an important element for the development of an impetus for evaluations and as a potential driver to change in the future. The existence of other stakeholders (line business associations or researchers' associations interested in improving policies and able to articulate their requests) was seen as a force able to exercise pressures in favour of RTDI evaluations.

Finally, for the tendering process, the indicators were again subjective and focused on assessing the *Terms of Reference (how good they are/could be)*; *the Smoothness of the process (no legal or other complications)*; *Time to contract (benchmarks)*; *Monitoring (were awarding authorities hands on or off?)*; *Content (how ambitious are the Terms of Reference?)*; *Adoption of recommendations or justification for not adopting them (of the specific evaluation as well as the receptiveness to addressing recommendations in general)*. In a more systematic monitoring environment many of these indicators could become objective. However, given the lack of systematic monitoring in these cases, they had to be constructed from the individual interviews conducted within the context of this study.

Findings from analysis of state-of-the art

The findings from the application of the methodology to the countries studied were of interest both from the perspective of the countries and from the perspective of the indicators. They are presented below in a tabular form for some of the indicators.

Table 1: THE THREE MAIN INDICATORS REGARDING FORMAL RULES.

	Special provisions for RTDI evaluations	Explicit legislation	Standards
Austria	No	Yes	Yes
Bulgaria	No	No	No
Greece	No	No	No
Hungary	No	Yes	No
Montenegro	No	No	No
Serbia	No	No	No

One of the conclusions derived from this table are that the distance between countries is large. Austria, as the model case, indicates what can be achieved. It

may also be true that special provisions for RTDI evaluations may not be a very useful benchmarking indicator, since it is not even used by the model country. But explicit legislation and the adoption of standards are relevant first steps to kick-start the process of building up an evaluation culture.

Table 2: MAJOR INDICATORS FOR INFORMAL RULES.

	Frequency	Type of evaluations	Willingness to improve/ experiment (max 5)	RTDI evaluation champions (max 5)
Austria	High	Restricted tenders very frequent	3	3 (Platform)
Bulgaria	Low	Mainly mandatory through SF	2	2 (Structural Funds)
Greece	Negligible	Mainly Internal	2	1 (GSRT)
Hungary	Low	Mainly Internal	1	1 (New Unit)
Montenegro	Negligible	PRAG *	2	--
Serbia	Negligible	PRAG	1	--

* PRAG: Practical Guide to Contract Procedures for EU External Actions

Given the homogenous and unified formal rules on thresholds, what is more important for the institutional set-up comes from nationally embedded routines, namely the informal rules that influence the behaviour of awarding authorities. For *The frequency of evaluations* indicator, we used as inputs:

- The evaluations discussed during the interviews conducted during the country visits. These are the most robust data used, because extensive interviews and discussions were held. However, this alone is an insufficient indication, since it needs to be assessed together with the reasons for why there were so few evaluations. Hence it was complemented further;
- The results from a search using the CPV Code “Research and Development” and keyword “evaluation” for all EVAL INNO participating countries. This is a very complex input as it only captures tenders that are above the threshold for international tendering and, although classified under RTDI, they may not always refer to policy but to content. However, we did use it as a proxy for the overall evaluation culture in the country;
- Inputs from a dedicated questionnaire conducted within the context of the project.

The second parameter, namely *the type of evaluations*, was used to help identify whether only mandatory evaluations were undertaken (imposed mainly by legal obligations towards international donors) but also whether more complex evaluations other than simple programme and institutional evaluations were

ventured in the country (e.g. portfolio and system evaluations). Additional information to help rate this variable included whether internal or external evaluations are most frequent. As all countries have ratified the Bologna Process, no reference to institutional evaluations was made, considering that sooner or later institutional evaluations will be launched. As yet only Austria (and to a limited extent Greece) have systematic institutional evaluations.

The willingness to improve was the most subjective indicator of all. During the country visits, and as a response to the questionnaires, it was easy to distinguish between awarding authorities which did not tender because of the overall climate and lack of skills (as in our initial assumptions), but were, however, willing to learn and venture into evidence-based policy. For others the status quo was satisfactory and did not see the enhancement of evaluation as a priority for policy improvements. For the former, the interest for participation in the EVAL INNO training was higher. Overall, the willingness was best judged by an interest to participate in the EVAL INNO trainings, learn its results, and ask for suggestions on how to approach other organisations or actors that would give access to evaluation knowledge. Because this appraisal was a matter of perception, there were explicit discussions with national stakeholders in subsequent workshops. These discussions validated the individual-comparative country ratings.

Finally, the idea of identifying potential *champions* in each country was perceived as one routine of interest. Individual or institutional champions can be the leverage for change. While the willingness to improve and experiment is an important attribute, the question of whether there are champions willing to carry the burden of creating something new, to be used as leverage for behavioural change, is an important question for future national policy. The drawback of this approach was that the number of interviews was limited and potential champions being omitted from the study was a real risk.

Again the distance in evaluation strength between countries proved large, with Austria as the model again, however with limitations in international tendering and willingness to experiment. Hungary, Bulgaria and Greece scored better than others in the area of formal rules, because we could identify people who were ahead of their national formal institutional framework. In terms of the indicators, we concluded that the set of informal routines were an extremely valuable indicator for benchmarking the reality of the situation and potential for change. However, they can only be of real value if efforts at the national level are adopted to systematically collect the necessary data, rather than relying on ad hoc interviews.

The next step was to assess the evaluation community, composed of awarding authorities, evaluators (at the national level but also the interest, willingness and involvement of international evaluators to be engaged in the country) and other stakeholders able to exercise some influence, or pressure to the national system to enhance RTDI evaluations and to eventually make them mandatory. The distinguishing feature in this process was that only in Austria were awarding authorities really an integral part of the evaluation community and this was achieved thanks to the development of the Austrian Evaluation Platform. In all countries, the community of the evaluators was the most dynamic element of the system, because there is a market drive triggered by mandatory evaluations imposed by the European Commission or international donors. Conversely, other stakeholders were not strong in any of the countries studied.

Table 3: THE FINAL SET OF INDICATORS RELATED TO THE TENDERING PROCESS.

	Smooth process	Time to contract	Monitoring	Content	Adoption of recommendations
Austria	Yes	***	Good/variable	Variable	60%
Bulgaria	Yes	***	Limited/variable	Standard	40%
Greece	Yes	*	Limited	Standard	20%
Hungary	Yes	**	Limited/variable	Standard	40%
Montenegro	Yes	**	Limited	Standard	30%
Serbia	Yes	**	Limited	Standard	30%

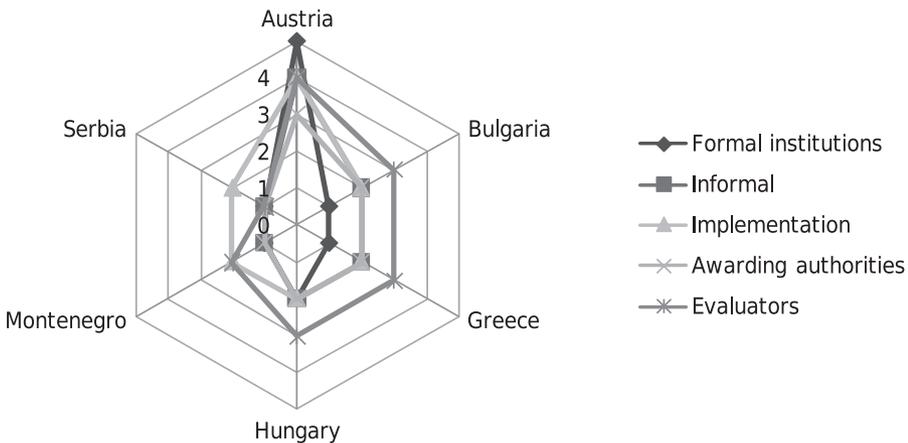
The basic stages of implementation are fairly straight forward and mastered by most administrations. However, effective implementation is more than simple contract management. We focused more on the *Smooth process* (no formal complaints), *time to contract* (which is not formally monitored), *monitoring*, depending on the qualification of individual officers and the culture of the awarding authorities, *the content of the terms of reference*, and last but not least the way awarding authorities react to the *recommendations* they received as a result of their tender. The questions here revolve around whether or not recommendations are adopted, and if not, is there a justification as to why they are not adopted?

All these results were aggregated into a benchmarking tool. Benchmarking is a task of comparing, identifying strengths and weaknesses, and suggesting ways for laggards to catch up with top performers. Benchmarking is an effort to quantify processes and qualitative parameters and is, as such, always subject to criticism. The subjectivity of the indicators here made it clear that a robust, quantitative benchmarking was impossible. However, the synthesis of the

different parts was still made within the context of the idea that intelligent benchmarking³ can help identify important issues, even if their quantification may be subject to objections.

Creating one synthetic indicator is even more problematic than for individual categories, because there is no experience of potential weightings and their relevance for improving RTDI evaluation tenders and countries that see themselves low on the benchmarking scale may feel unfairly treated. The most common approach, in such cases, is to give all categories the same weighting for all categories and this is what has been done in this study. A quantified synthetic indicator was attempted (but not reported because of the methodological drawbacks explained) and resulted in a ranking order of Austria, followed by Hungary, Greece Bulgaria and then the two IPA countries. However, a more systematic exercise of this kind could prove very useful in the future, if data are systematically collected and the indicators become more objective, robust and reliable. In this context we only created a pilot, indicating that the methodology is available and can be the basis for an Open Method of Coordination for RTDI evaluations.

Figure 1: FINDINGS ON A RADAR DIAGRAM TO ILLUMINATE THE MAIN MESSAGES.



Austria is the best and can be used as a model and benchmark for the EVAL INNO countries in all areas. It is well ahead of the other countries. In terms of parameters, the “evaluators” include the better performing actors together with

3 Lundvall Bengt Ake, Mark Tomlinson (2002) Lundvall, B-Å & Tomlinson, M 2002, 'International benchmarking as a policy learning tool'. Rodrigues, M.J. (ed.) (ed.), in: The New Knowledge Economy in Europe. Edward Elgar Publishing, Incorporated, Cheltenham.

the awarding authorities. It is of high interest that the market has started to form and but that it is rules and interaction that are lacking.

Main interventions and action necessary to facilitate RTDI evaluation culture

The benchmarking exercise was attempted, in the context of the EVAL INNO project. It was an interesting pilot, with significant problems in terms of lack of data. It gave the participating countries the possibility to get an idea (not really a measure or benchmark) of their own performance against their peers and see what type of challenges they face if they wish to improve their capabilities and adopt RTDI evaluation as an instrument for policy improvement. In the process of data gathering, certain Good Practices were identified that could be used for training purposes and pioneering actors that can take the lead in a process of change.

The more general interest of this paper lies in its contribution to quantify and compare topics and parameters that are difficult to measure. A methodology was developed, which reflects both the status quo and the willingness to change. Objective indicators and subjective judgements were combined to arrive to partial indicators (for individual categories decomposed into 4-6 parameters each) and a synthetic one. While recognising the limitations of this methodology, it can be considered as a first attempt, which, if further refined and if systematically reported, may evolve into a useful input for monitoring and benchmarking of RTDI evaluations.

The crucial elements for the future can then be summarised in three statements (implying relevant questions on willingness to change):

- Systematic data gathering is a top priority before any discussion of change to RTDI evaluation culture starts;
- For countries wanting to incorporate the benchmarking lessons, explicit policies, priorities and milestones need to be developed. Benchmarking is a useful tool as long as political will, skill development, and the identification and use of national champions to accompany the process of change are available as well;
- In this context, there is an important role that the EU or other international organisations can play in making explicit and supporting an attitude towards this cultural change.

Standards in RTDI evaluation

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Introduction

A model of RTDI EVALUATION STANDARDS was adopted within the context of the EVAL-INNO project with the dual objective:

1. To create awareness and sensitise the evaluation community in the participating countries (and South Eastern Europe in general) to the value of adopting standards;
2. To provide a model for evaluation that is tailored to the needs and competencies of moderate and modest innovators¹.

Evaluation standards are adopted by technologically advanced countries with the aim to contribute to the improved implementation and exploitation of Research, Technological Development and Innovation (RTDI) measures. This is done in order to promote meaningful evaluation procedures that foster strategic intelligence building and evidence-based decision-making in the field of science, technology and innovation (STI) policy. Such standards inform stakeholders about the purposes and characteristics of evaluations in the field of science and technology, provide users with an internationally acknowledged terminology and evaluation theory framework, guide users in practical issues concerning the governance, conduct and use of RTDI evaluations, and offer practical hints on how to plan and implement evaluations.

Conversely, authorities in moderate and modest innovators are, in general, unaware of the value and relevance of evaluation and are occasionally reluctant to embark on a course of action which may reveal weaknesses. They often lack the organisational set up, the formal procedures, and the experience, to launch evaluations and to extract value from them. The adoption of standards is one tool among many that can be used to gradually overcome this reluctance and provide support for useful evaluations. They constitute a reference and an incitement to start building up an evaluation culture.

¹ This terminology comes from the Innovation Union Scoreboard taxonomy which, based on innovation performance characteristics, classifies the member states into Innovation Leaders, Innovation Followers, Moderate Innovators and Modest Innovators http://ec.europa.eu/enterprise/policies/innovation/files/ius/ius-2014_en.pdf

In this spirit, the EVAL-INNO team has prepared RTDI evaluation standards for South Eastern Europe; they are conceived in a way that tries to balance best practices and high ambitions with the limited experiences and the cultural specificities of the region they are addressed to. The standards can be adopted into the national context, or they can be modified to suit each country's needs. Their value lies mostly in triggering the discussion about the need to adopt standards and in offering a basis for doing so. The potential adaptations that may be needed are technicalities: what matters is to start the discussion and to take decisions within a reasonable period of time.

The function and intended users of RTDI evaluation standards

It is important that evaluations are embedded in the policy cycle. They are relevant not only for RTDI, but for all public policies. The timing of an evaluation is relevant within the context of the four important steps of the 'programme cycle', which include:

1. Planning an intervention (e.g. deliberating the objectives of an RTDI programme and its main characteristics in terms of thematic orientation and budget);
2. Design (including decisions about the duration and substructure of a programme, its organizational implementation, flanking measures, assumptions and pre-conditions, evaluation requirements);
3. Implementation (e.g. via a dedicated number of calls for proposals with clear ex ante project evaluation procedures);
4. **Evaluation** of the entire intervention.

The evaluation standards lay the foundations for an effective RTDI policy cycle. In this spirit, they provide information about terminologies, taxonomies and good practices for the purposes and characteristics of evaluations in a specific field. The standards feature instructions on how to write the Terms of References to procure external RTDI evaluations and how to structure meaningful evaluation reports.

Their content is specified by both

- the need to address the lack of methodological and procedural know-how on the side of evaluators and awarding authorities concerning the purpose, design and use of evaluations and;
- recommendations to improve the institutional set-up in each country.

The function of the standards is to sensitise RTDI policy-makers to the value of evaluations and also, especially under tight financial regimes, to justify RTDI spending and to secure the optimum use of taxpayers' money. The evaluation standards guide presented here provides support to conduct proper and meaningful tenders to procure RTDI evaluations, as well as to implement them in a way that secures strategic intelligence building and evidence-based decision-making.

The content of the standards makes explicit reference to notions, functions, purposes, tools etc. An indication of their content is briefly described below.

The standards make an extensive reference to:

- The definition of evaluation (applying international standards);
- The functions it may be called upon to cover (including a legitimizing function, an information provision function, a learning function, a steering function and a controlling function);
- The purposes and expectations of evaluation processes (such as formative evaluations for programme owners to improve and enhance the implementation and management of interventions, and summative evaluation conducted by external actors for determining the essential effectiveness of programmes).

In addition they distinguish between different evaluation levels and indicate ways to address them, including:

- Policy evaluations (e.g. research and/or innovation policy on different spatial levels, such as national, regional or local);
- Systems evaluations (e.g. RTDI funding systems, including direct and indirect funding components);
- Sector evaluations (e.g. main industrial branches or the service sector as a whole);
- Organisational evaluations (research, teaching and intermediaries);
- Portfolio evaluations encompassing a number of programmes, measures, organisations;
- Programme evaluations;
- Project evaluations.

According to the time when evaluations are carried out in the policy cycle, and depending on the evaluation purpose, it is useful to differentiate between:

- Ex ante evaluation – the evaluation is conducted prior to the implementation of a strategy, piece of legislation, programme or project;
- Interim evaluation – the evaluation is conducted during the implementation of a strategy, programme, project or during the operations of an organization;
- Terminal evaluation – the evaluation is conducted immediately at the end of the implementation of a strategy, programme, project or piece of legislation;
- Ex post evaluation – the evaluation is conducted a short time after the end of the implementation of a strategy, programme, project or piece of legislation;
- Periodical evaluation – the evaluation is conducted regularly throughout the implementation of a strategy, programme or organization, for example biannually;
- Ad hoc evaluation – the evaluation was not foreseen during the development or implementation of a strategy, organization, programme, or project but is conducted to meet a need that emerged later.

The standards go on by discussing the content of evaluations (i.e. **Concept evaluations**: reviewing the mission, assumptions, fundamental hypotheses and basic conditions of programmes; **Design evaluations**: deal with the effectiveness of the design of an intervention and its organizational structure; **Process evaluations**: In the early stages of a new programme or new initiatives within a programme, evaluation questions often focus on programme processes, e.g. how well authorised activities are carried out and reach intended recipients; and **Impact evaluation**: seeks to answer cause-and-effect questions, and the changes in outcomes that are directly attributable to a policy, programme or project. Impact analyses assess the extent to which programme objectives have been attained and attempt to identify and to quantify, as far as possible, all of the effects brought about by the programme, directly or indirectly, intentionally or not. In doing so, a differentiation is made between the immediate 'output' of a programme (e.g. the number of projects funded), the result or 'outcome', (e.g. the number of usable patents), and the effect or 'impact' (e.g. the market value or increases in turnover). In view of business RTDI, the effects of programmes are to be found where new inventions and developments interact with the market. They are usually expressed in economic terms. The evaluation criteria are particularly relevant and include:

- **Relevance** – Which refers to the extent to which an activity is suited to the priorities and policies of the target group, recipient and donor;
- **Efficiency** – Which measures outputs – qualitative and quantitative – in relation to inputs;

- **Effectiveness** – Referring to the extent to which an intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance;
- **Impact** – Which can be understood as positive or negative, and primary and secondary long-term effects produced by an intervention, directly or indirectly, and both intended or unintended;
- **Sustainability** – The continuation of benefits from an intervention after major assistance / funding has been completed. This includes assessing the probability of long-term benefits and the resilience to risk of the net benefit flows over time.

Special emphasis is given to the *additionality* effects. Input additionality is the extent to which R&D activity is increased as a result of government intervention. Output additionality is the extent to which additional outputs increase as a result of public intervention, and behavioural additionality is the extent to which beneficiaries and other stakeholders change their behaviour and become more competitive and goal-oriented.

The standards refer also to competences and ethical rules. Their target audience is composed of:

1. authorities commissioning RTDI evaluations (often ministries in charge of research, technological development and innovation and their respective measures, programmes and policies);
2. evaluators carrying out RTDI evaluation studies;
3. organisations and stakeholders subject to evaluations, such as funding agencies, public research organizations, universities or intermediary organizations (e.g. technology transfer offices, technology and science parks, impulse and innovation centres etc.).

Particularities for the Region

An evaluation framework lays out the overall logical structure and requirements of an evaluation process prior to the start of the evaluation itself. An evaluation framework should be fixed in the guidance documents of programmes or projects to ensure its sustainability. When designing evaluation activities, a number of questions should be addressed regarding objectives, tools and expected results.

These questions are context-specific and depend on the history and culture of RTDI policies and of evaluation exercises in each particular country. The South Eastern

European RTDI evaluation standards take into consideration that ERDF² and IPA³ countries need to develop strategic intelligence in order to design, implement and follow-up RTDI measures at different spatial levels (local, national, regional and European) by addressing issues of relevance, efficiency, efficacy, impact and sustainability. These countries have none, or a limited number of the evaluation institutions necessary to implement very ambitious evaluations. Institutions, defined as formal and informal rules and their enforcement characteristics, need to be gradually built up and there are different ways for doing so. Different models which include individuals, champion organisations or collaborative platforms are possible paths to follow.

The legal basis (i.e. formal rules) for evaluation are easy to identify, scrutinise and copy. The difficulty is to adapt them to local cultures and instigate a pace of progress that is accepted by the stakeholders in each country. Copying overly ambitious models will face resistance to change and they are likely to deteriorate as a result. For a reasonable period of time, evaluation will be a learning tool more than a steering instrument, because the challenge will be to build up the informal rules that will ensure that evaluation will become an integral, built-in process of the overall policy cycle.

In that sense, the standards for the region are not to be used as if they are carved in stone, but as an instrument that will accompany a process of cultural change.

Key messages to the users of RTDI evaluation standards

The key messages from the standards are that:

1. Experience has shown that RTDI evaluation standards constitute a useful instrument to help build up an effective evaluation culture, which will help ensure good policies;
2. Creating standards is the easy part of strengthening an evaluation culture. Based on a collaborative exercise, the EVAL INNO project succeeded in suggesting a model that was acceptable in all stakeholder discussions.
3. The more difficult part is the adaptation and adoption of the standards, and their systematic and long-term usage throughout policy cycles.
4. Standards alone are useless. But in combination with other resources and capacity building activities, they will help build up a new culture and a virtuous circle of continuous improvements.

2 EU Member States supported by the European Regional Development Fund in their RTDI policies

3 Accession and cooperating countries supported by the Instrument for Pre-Accession in their RTDI policies

RTDI evaluation practices according to the EVAL-INNO evaluation platform: recent developments in evaluating the Cohesion funds and the way forward

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Evaluation practices and country characteristics according to the experiences gathered in the EVAL-INNO Evaluation Platform¹

During the implementation of the EVAL-INNO project, a joint RTDI database was established that aimed to gather the most important experience in RTDI policy formulation and implementation in SEE countries. According to the information gathered within the platform, in almost all SEE countries RTDI evaluation has only recently started to be recognised as an important area (Austria is an exception). However, the demand for skilled evaluators is increasing, mainly due to the requirements of the European Union for evaluating EU-funded programmes. This appears to result in a gradual increase in national evaluation cultures and competencies. Most evaluations are still performed at the project level, but the systematic evaluation of organisations, programmes and strategies is emerging.² Evaluators are available, although many have limited experience in evaluation, and/or their experience was developed in other contexts (e.g. project preparation). The backgrounds of potential evaluators include researchers, economists, public authorities, and managing authorities. Since most of their training is not formalised, evaluators would likely benefit through targeted trainings in the most relevant evaluation approaches and methodologies. According to the opinions of the experts collected through the RTDI database, trainings should be tailored to current and potential evaluators at all levels and focus on the specific features of RTDI.

In addition to the need for improvement among evaluators in understanding of how RTDI processes work, and how they should be understood in an evaluation context, the inconsistent quality and depth of the evaluations is also an issue.

1 The chapter is based on the templates and information gathered in the EVAL-INNO RTDI database.

2 For details on the project partner countries see also: Research and innovation support mechanisms and related evaluation practices in Austria, Bulgaria, Greece, Hungary, Montenegro and Serbia. Comparative analysis report, v1.0., p.54. edited by Balázs Borsi (external expert, IFKA).

Evaluations are often shaped as simple descriptive reports having a similar format as an audit, without much qualitative text and without establishing linkages between the resources allocated and activities undertaken and the achieved outcomes. Neither is it common that the appropriateness of a programme design is evaluated vis-a-vis the needs of the economy and society.

Within the context of the EVAL-INNO project and in SEE, **Austria** is viewed among many stakeholders as the best practice in the area. Most of the Austrian RTDI programmes are regularly evaluated in conformity with the “Guidelines to support economic-technical research and technology development”³. **Hungary** has also partly adopted some of the Austrian practices; however according to expert opinions and the data gathered in the EVAL-INNO RTDI database, it can be concluded that it still has little experience in designing, implementing and evaluating innovation (or S&T or RTDI) strategies. In the rest of the countries (**Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Kosovo, Former Yugoslav Republic of Macedonia (FYROM), Montenegro, Serbia and Slovenia**) there is a lack of a systemic approach in evaluation and the uptake of recommendations in policy development. In some countries, **such as Bulgaria**, the RTDI policies are mainly examined by NGOs and other external experts, or self-evaluated by the ministry officials that enforce them. In **Bulgaria and Greece** the ex-ante impact assessments and the mid-term reviews of the Operational Programmes in each programming period are the closest exercise to a comprehensive evaluation.

In **Kosovo**⁴ the National Research Council is among the rare institutions that have adopted “Guidelines for Evaluation of Research Institutions in Kosovo”. Taken as a whole, the consulting market for different kinds of evaluation in Kosovo is still emerging. In the **Former Yugoslav Republic of Macedonia (FYROM)**, one of the main barriers that prevents in-depth analysis of the R&D environment, and prevents the high-quality monitoring of R&D policy measures, is the lack of quality R&D statistical data, as noted in the EU Progress Report for 2010⁵. RTDI institutions in the country have yet to define the evaluation approaches that will be most appropriate for improving their operation and which will provide useful information on their RTDI performance to take measures to do this. In **Montenegro**, an RTDI strategy and a respective action plan were launched in 2008 for the very first time. Although strongly recommended in several

3 Austrian Research and Technology Funding Act, incl. Guidelines for the support of economic-technological research and technology development.

4 Kosovo under UN Security Council Resolution 1244/99, according to the official nomenclature.

5 The Former Yugoslav Republic of Macedonia 2010 Progress report, Brussels, 9 November 2010, SEC (2010)1332, p 68.

documents, a system of comprehensive comparative evaluations does not exist in the Montenegrin RTDI system, at least not in a standardised and obligatory form. There is some evaluation experience among the representatives of the academic community, but it is commonly based on personal contacts and expertise gained through personal initiative. In **Serbia**, the ministries in charge of science and research organise ex-ante, interim and ex-post evaluations of projects, but not of programmes nor of the evaluation of researchers. In **Slovenia**, evaluation practices have improved in recent years. According to the EVAL-INNO RTDI database and the expressed opinion of the registered Slovenian evaluators, different governmental agencies have developed databases of evaluators, the majority of whom are Slovenian, although some of which are international. Despite that the monitoring of the R&D system is more focused on the physical performance such as distribution of funds than on the impact and demand fulfilment, relevant to the needs of the economy.

In the EVAL-INNO database, only a few support measures have been reported to use **evaluation practices** in the target countries. These examples include:

1. **Bulgaria:** The programmes of the National Science Fund were evaluated by an international panel in 2006⁶. The report analysed various aspects of the individual programmes, and the summary of its findings focused, mainly, on its overall activity and weaknesses. The evaluation method used was expert interviews. The expert-based method was proposed by the evaluators (bottom-up method). The activity was initiated by the managing authority.
2. **Bulgaria:** All seven Operational Programmes have elaborated, or are in the process of elaborating, mid-term evaluations. The methods usually include document review, interviews with the managing authorities and the beneficiaries, SWOT analyses, the use of questionnaires, and a triangulation approach. Recommendations focus on the progress made, relevance of activities against stated objectives, and the impact of the programmes.
3. **Former Yugoslav Republic of Macedonia (FYROM):** Within the Programme for Innovation Voucher Counselling Scheme⁷, the programme manager at the Agency for Promotion of Entrepreneurship prepares a monthly report that is submitted to the director of the agency⁸. This person also prepares quarterly and annual reports that are submitted to the Programme Development Council, and to potential donors. The Agency for Promotion of Entrepreneurship

6 National Science Fund of Bulgaria Report of an International Review Panel, 2006, http://nsfb.net.server19.host.bg/system/storage/National_Science_Fund_of_Bulgaria.doc

7 More information is available at: <http://www.apprm.gov.mk/voucher.asp>

8 Agency for Promotion of Entrepreneurship of the Republic of Macedonia, http://www.apprm.gov.mk/index_e.asp

occasionally hires external consultants to evaluate the efficiency, effectiveness, sustainability and the impact of the programme. The evaluations follow a methodology proposed by the contracting body (top-down method) and the evaluation is implemented on the basis of a regulatory requirement.

4. **Slovenia:** The Innovation Voucher Scheme⁹ has been self-evaluated by the launching public body – the Ministry of the Economy, Enterprise and Competitiveness Directorate.
5. **Slovenia:** The programmes¹⁰ of the Slovenian Research Agency are monitored through a form of self-assessment (ongoing internal reports and internal mid-term evaluation).
6. **Hungary:** An OECD (2008) country report analysed in-depth the whole innovation system. In 2008 the National Audit Office (ÁSZ) screened the operation of the Research and Technological Innovation Fund (KTIA). The *KPMG* (2009) evaluation report sums up the results of an interim evaluation, which aimed at assessing the extent to which measures of the mid-term STI strategy (2007-2013)¹¹ had been implemented. The *Ernst&Young and GKI* (2010) evaluation report presented an ex-post evaluation of the first 6 years of the Research and Technological Innovation Fund (KTIA)¹².

Most evaluations of RTDI infrastructures in the database are both **external and international** (i.e. performed by international panel of experts). For example in **Bosnia and Herzegovina**, universities have been evaluated by the EUA Institutional Evaluation Programme (IEP), an independent membership service of the European University Association (EUA).

In **Bulgaria**, the Bulgarian Academy of Sciences (BAS) and the National Science Fund were evaluated by international panels, based mainly on interviews and available documentation. In the case of BAS, the evaluation criteria adopted were based on the “Standard Evaluation Protocol” for institutional evaluations¹³. It encourages a descriptive evaluation that focuses on strengths and weaknesses using several evaluation criteria. These include quality and productivity, scientific and societal relevance, and prospects. During both evaluations, recommendations

9 Inovacijski vavčer, <http://www.spiritslovenia.si/?t=razpisi&id=116>

10 Programmes and projects of the Slovenian Research Agency, <http://www.arrs.gov.si/en/progproj/>

11 Hungarian STI strategy (2007-2013), <http://www.nih.gov.hu/english/strategic-documents/the-government-mid-term-090619>

12 EVAL-INNO, Research and innovation support mechanisms and related evaluation practices in Austria, Bulgaria, Greece, Hungary, Montenegro and Serbia. Comparative analysis report, v1.0., p.27. edited by Balázs Borsi (external expert, IFKA), http://www.eval-inno.eu/images/State_of_art_report_EVAL-INNO_WEB.pdf

13 ESF and ALLEA Report by the 2009 Science Review Committee, 2009, http://www.esf.org/fileadmin/Public_documents/Publications/BAS_report.pdf

were presented that aimed to improve the individual activities of BAS institutes, as well as outlining suggestions for a general restructuring of BAS.

In **Croatia**, the University of Zagreb was evaluated by a self-evaluation group (SEG)¹⁴, composed of 10 academic and administrative staff and 3 student representatives, as well as 3 special focus advisers. It was also supported by a technical support group and a monitoring group. The evaluation was guided by four key questions:

1. What is the institution trying to do?
2. How is the institution trying to do it?
3. How does it know it works?
4. How does the institution change in order to improve?

In the **former Yugoslav Republic of Macedonia (FYROM)**, evaluation of the Foundation for Management and Industrial Research (FMIR) included performance assessment, strategy and development evaluation and impact assessment. The following steps/aspects were employed: gathering of quantitative data; cost-efficiency analysis; SWOT analysis combined with factorial analysis of the findings; impact assessment compared to impact indicators, as well as consultations; qualitative analysis of strategic planning and development trends; quality and relevance of services/methodologies.

In **Greece**, a number RTDI institutes, supervised by the General Secretariat for Research and Technology (GSRT), are systematically evaluated every 4 or 5 years. The evaluations are implemented by international thematic expert panels. The evaluations are based on the written material provided to the Committee as well as on site visits to the institutes. During these visits, each of the institute's laboratories are visited, and discussions are held with key scientific personnel.

In **Montenegro**, all higher education institutions (universities) undergo a process of accreditation for teaching purposes. As part of the process, RTDI activities are also evaluated. These evaluations focus on the number of projects (national and international), and sources of funding classified by year. Re-accreditation is, as prescribed by the law and by-laws, carried out every 5 years.

For **Slovenia**, there are no indications in the database of RTDI infrastructure evaluations. The examples provided concern the Jožef Stefan International

14 For more information see: Institutional Evaluation Programme, University of Zagreb, May 2011 and University of Zagreb Self-Evaluation Report, 2000, http://www.unizg.hr/fileadmin/rektorat/O_Sveucilistu/Dokumenti_javnost/Dokumenti/Strateski_dokumenti/iskorak2001/cre_self_evaluation.pdf

Postgraduate School, that underwent a self-evaluation in 2009-2010¹⁵, whose key focus was the study process and programming at the school. As such, it is not concerned so much with institutional performance, as is with the quality of the study programmes and delivery. In a separate case, a team of evaluators also paid two visits to the University of Primorska to conduct on-site observations and to meet university representatives. Prior to that, the team analysed a self-evaluation report prepared by a group of 15 senior faculty and administrative staff. However, the evaluators felt that insufficient data was provided to support the sections of the report on the mission, vision and goals, teaching activities, research activity, human resources and investments. It was mentioned that there was also too little hard evidence about the actual processes of quality assurance and the pertinence and use of the performance indicators.

Recent developments: the experience gathering process of evaluating the Cohesion Fund and ERDF-funded programmes

In the majority of SEE countries, the major impetus for carrying out independent evaluation exercises, and by extension the development of an evaluation culture comes in the form of obligatory evaluations of the Cohesion Fund and ERDF-funded programmes. These programmes invariably also include RTDI schemes and procedures, which is why the evaluation practices and results related to them are suggestive for the state-of-art of the SEE evaluation culture.

A report published in 2014 by the DG Regional Policy Expert Evaluation Network, synthesizes evidence on the trends, characteristics, results and use of evaluations carried out during the programming period 2007-2013¹⁶. Overall, the evaluation strategies adopted in Member States differ largely in relation to the number and types of commissioned evaluations. This leads to programmes being evaluated to very different extents or, in some instances, not being evaluated at all. General tendencies include an increasing focus on specific policy areas instead of evaluations covering entire Operational Programmes; a shift of interest away from evaluating procedures and towards assessing results and effects of interventions, as well as an emerging, if still limited, use of more advanced evaluation methods, such as counterfactual analysis.

15 Jožef Stefan International Postgraduate School self-evaluation, 2009-2010, http://www.mps.si/dokumenti/splet/dokumentiosoli/Samoevalvacijsko_porocilo_2009-2010.pdf

16 DG Regional Policy, Expert evaluation network on the performance of Cohesion policy 2007-2013, Synthesis of National Reports 2013, January 2014, http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eval2007/2013_eeen_task2_synthesis_final.pdf

Up until the latter part of 2013, a total of 830 published evaluations were identified by the international expert network (excluding ex-ante and assessments of communication strategies). The uneven distribution of evaluations across countries is partly due to the policy preference in some countries for carrying out many small evaluations instead of fewer larger ones. A general observation is that in almost all countries there have been, on average, less than one evaluation per priority area. Most evaluations involved qualitative methods such as interviews with, or surveys of, beneficiaries, and analyses of monitoring data or other statistics. The use of quantitative techniques was almost entirely limited to the deployment of macroeconomic models for impact assessment with just a few counterfactual evaluations.

As presented in the tables below, the data shows that evaluations have shifted away from process-oriented evaluations and towards results-oriented evaluations, as well as towards using of a combination of quantitative and qualitative methods.

Table 1: DIVISION OF EVALUATION OF COHESION POLICY PROGRAMMES BY TYPE.

	2013		2007-2013	
	No.	%	No.	%
Process-oriented	48	25.3	352	42.4
Progress-oriented	73	38.4	296	35.7
Result-oriented	69	36.3	182	21.9
Total	190	100	830	100

Source: Expert evaluation network on the performance of Cohesion policy 2007-2013, Synthesis of National Reports 2013, January 2014

Table 2: DIVISION OF EVALUATIONS OF COHESION POLICY PROGRAMMES BY MAIN METHOD USED.

	2013		2007-2013	
	No.	%	No.	%
Counterfactuals	11	5.8	27	3.3
Other quantitative	10	5.3	46	5.5
Quantitative + qualitative	75	39.5	227	27.3
Qualitative	94	49.5	530	63.9
Total	190	100	830	100

Source: Expert evaluation network on the performance of Cohesion policy 2007-2013, Synthesis of National Reports 2013, January 2014

The report concludes that a common feature of the evaluations carried out in the programming period 2007-2013 is the **relatively low quality** of many of them. The reasons for this fall into two broad categories, including:

- *Issues with input factors*: including misleading definitions of the evaluation questions; inadequate preparation of the work and limited involvement of stakeholders; poor design of evaluations due in part to a failure to define the logic of the intervention and the underlying theory of change; lack of suitable data and a failure to process those available satisfactorily; unsatisfactory application of the methodology; failure to test the findings fully, and excessive trust placed on the view of funding-recipients;
- *Issues with process factors*: unclear and incomplete terms of reference (which are important to determine the evaluation questions and the methods to be used); inadequate financing; insufficient independence of the evaluators and a tendency to deliver the results looked for; limited capacity of those commissioning the evaluation to check and interpret the results, to monitor the evaluation process and to give suitable guidance to evaluators; lack of open public debate on the results, and a failure to encourage outside scrutiny.

Across the majority of countries studied, the use of evaluation findings is predominantly informal, while only in some EU-12 countries there are formal procedures in place to ensure that recommendations are discussed and/or implemented. The examination of evaluation activities revealed that due to the fragmentation of the knowledge produced by the various evaluations, the formulation of general conclusions and coherent guidance to policy-makers is impeded. Furthermore, there is often limited diffusion and public discussion of evaluation results and recommendations.

The way forward: assessing local innovation policies in the context of the new structural funds' programming period 2014-2020 and the smart specialisation strategies

In the context of the forthcoming new programming period 2014-2020, and the adoption of Smart Specialisation Strategies (S3), the region is in the process of putting a stronger focus on evaluation. The EVAL-INNO project will also seek its expansion and continuation, as described in its Sustainability Strategy. An example of these developments is the KNOW-HUB project on "Enhancing regional competences in strategic management of innovation policies"¹⁷, which developed and implemented a new peer review methodology to identify and

17 KNOW-HUB project website, <http://know-hub.eu/>

asses any pre-cursor information in support of S3 decision-making processes. The KNOW-HUB Peer Review analyses has supported regions in their discovery process of domains for future smart specialisation, and has facilitated their knowledge exchange on good practices and effective measures. The project partnership also actively collaborates with the Smart Specialisation Platform¹⁸ in their work on reviewing and improving Smart Specialisation Strategies (S3) for Research and Innovation.

The KNOW-HUB practitioners from 10 regions¹⁹ have undertaken exchange visits for peer-reviewing and assessing local innovation policies in order to enhance their future performance in the context of the new Structural Funds' programming period 2014-2020. KNOW-HUB Peer Reviews are exchange visits carried out by the project partners to provide deep insights into the mechanisms on which regional development and innovation policies are based. The visits included face-to-face meetings, interviews or workshops with key regional stakeholders, seminars, and focus group discussions, focusing on exchanging in-depth knowledge on the regions' current and future strategic development. The Peer Review process included the following actions:

- Snap-shot analysis of the current situation of the regional innovation policy – assessment of the regional innovation system (key actors, gaps, synergies and supporting environment) and strategies (implementation, monitoring and efficiency);
- Overview of the modalities for programming the Structural Funds;
- Identification of good practices, weaknesses and opportunities in regional innovation policy and RIS3;
- “Point of departure” for developing an action plan by the visited region to match the RIS3 ex-ante conditionality for the next Structural Funds period 2014-2020.

Similar initiatives are necessary for the development of custom-based approaches to fully transpose EU policy, and succeed in its efficient implementation, monitoring and evaluation for the benefit of all countries and regions.

¹⁸ Smart Specialisation Platform <http://s3platform.jrc.ec.europa.eu/home>

¹⁹ KNOW-HUB participating regions: Wielkopolska (Poland), Eszak-Alföld (Hungary), Gobierno Vasco (Basque country, Spain), Nord-Pas de Calais (France), Provence-Alpes-Côte d'Azur (France), Lower Austria (Austria), Weser-Ems (Germany), Banská Bystrica (Slovakia), Castilla y León (Spain), Gabrovo municipality (Bulgaria).

Experiences from the EVAL-INNO trainings

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At present, the key challenges for improved RTDI evaluations in the SEE region include:

- The lack of qualified evaluators for programme, institutional and policy evaluations in the field of RTDI, as well as methodological deficits and weaknesses;
- The lack of knowledge on professional tendering procedures (incl. public procurement laws) to obtain the best evaluation results;
- Difficulties in accessing RTDI evaluation information and good practices, and a general lack of the usage of good-practices for RTDI programmes, institutions and policy evaluations in the region.

The above mentioned challenges were the driving force in developing training modules tailored to the needs of the SEE region, with an emphasis on methodological and procedural issues both on the side of evaluators, and on the side of awarding authorities.

The Concept

The EVAL-INNO project offered the training opportunity to two different target groups:

- evaluators;
- officers from the RTDI awarding authorities.

The participants attended the training seminars in order to improve their capacities and competencies for conducting comprehensive RTDI evaluations through the provision of procedural and methodological know-how and tool-kits. More specifically, this included:

- A structured 5 day training course (consisting of 3 day module and a 2 day module) was addressed to evaluators;
- A structured 4 day training course (consisting of two 2 day modules) was addressed to officers from RTDI awarding authorities.

The modules were conducted in the following way:

- Day 1 was a joint day for both target groups. The topics that were presented included the RTDI evaluation hermeneutics and terminology and the role, functions, service-delivery processes and ethical issues based on the evaluation standards produced by EVAL-INNO. Six one-hour lectures were given on the following topics: "Introduction to the course and overview of RTDI evaluations", "History of RTDI evaluation, definitions, types, levels, timing of evaluations", "Rules and ethics for evaluators and commissioning institutes", "Competence of evaluators and awarding authorities", "Design of evaluation-logic charts", "Utilisation of evaluation results – Usefulness of evaluation".
- Day 2 and day 3 were once again joint days for both target groups. An overview of evaluation theory was provided, followed by a reflection on general evaluation aspects and basic evaluation tools. A comparison of evaluation methods was presented and different types of evaluations were analysed. Ten one-hour lectures were given on the following topics: "RTDI System Evaluation. A case study", "Structural Funds Operational Programme Evaluation. A case study", "Programme Evaluation. A case study", "Research Institute Evaluation. A case study", "University Evaluation. A case study", "Ministry/Research Agency/ Awarding authority Evaluation. A case study", "Evaluating Economic Impacts", "Evaluation of social impact of research", "Evaluation Platforms. The Austrian example", and "Overview of evaluation basic tools and methodologies"
- On day 3 and the following 4th and 5th days, the two groups were split in the afternoon sessions in the following way:
 - The evaluators attended courses on selected (prior to their arrival at the training) in-depth evaluation methodologies and practices in real-case based group exercises. Eight one-hour lectures were given on the following topics: "Additionality: Control Groups", "RTDI Indicators", "Questionnaires, Interviews, and field/case studies", "Benchmarking Analysis", "Expert panels, focus group, participatory evaluation approaches", "Foresight and technology assessment", " Network Analysis", and "Bibliometrics and patent analysis". Moreover, two hour real-case based group exercises were offered to the trainees for all the above-mentioned topics.
 - The programme officers attended courses on public procurement issues and practice in realcase-based group exercises. The following lectures were provided: "RTDI Public Procurement Legislation in ERDF and IPA countries" (2 hours), "Constructing the Terms of References" (2 hours), "The EVAL-INNO Platform and Databases of Evaluators" (1 hour), "Monitoring of evaluations from the perspective of the awarding authorities" (1 hour). A two hour

group exercise on “From programme goals to evaluation categories and indicators” was also offered to the trainees.

The trainings were carried out by twelve experienced RTDI evaluation trainers from the EVAL-INNO partner institutions, and by external experts. These included Prof. Djuro Kutlaca, Dr. Balázs Borsi, DI Martin Felix Gajdusek, Mag. Dr. Klaus Schuch, Prof. Lena Tsipouri, Dr. Nikos Sidiropoulos, Mag. Peter Kaufmann, Mag. Daniela Salhofer, Prof. Teodora Georgieva, Dr. Todor Galev, Dr Milos Besic, and Mag. Dr. Silvo Korez.

The language of the courses was English.

In the following two tables, the structure of the training modules for the evaluators, and for the officers from the RTDI awarding authorities is shown.

Table 1: TRAINING MODULES FOR EVALUATORS.

	Monday	Tuesday	Wednesday	Thursday	
POLICY-DELIVERY AND PROGRAMME OWNERS	9.00 - 10.00	Introduction to the course and overview of RTDI evaluations (Dr. Nikos Sidiropoulos, Greece)	RTDI System Evaluation. A case study (Prof. Teodora Georgieva, Bulgaria)	Evaluation Platforms. The Austrian example (Mag. Dr. Klaus Schuch, Austria)	Constructing the Terms of References (Mag. Dr. Klaus Schuch, DI Martin Felix Gajdusek, Austria)
	10.00 - 11.00	History of RTDI evaluation, definitions, types, levels, timing of evaluations (Dr. Nikos Sidiropoulos, Greece)	A Structural Funds Operational Programme Evaluation. A case study (Prof. Teodora Georgieva, Dr. Todor Galev, Bulgaria)	Evaluating Economic Impacts (Dr Milos Besic, Montenegro)	Constructing the Terms of References (Mag. Dr. Klaus Schuch, DI Martin Felix Gajdusek, Austria)
	COFFEE BREAK				
	11.15 - 12.15	Design of evaluation-logic charts (Mag. Peter Kaufmann, Austria)	Programme Evaluation. A case study (Prof. Djuro Kutlaca, Serbia)	Evaluation of social impact of research (Dr. Todor Galev, Bulgaria)	The EVAL-INNO Platform and Databases of Evaluators (DI Martin Felix Gajdusek, Austria)
	12.15-13.15	Rules and ethics for evaluators and commissioning institutes, (Mag. Peter Kaufmann, Austria)	Research Institute Evaluation. A case study (Dr. Balázs Borsi, Hungary)	Overview of evaluation basic tools and methodologies (Prof. Lena Tsipouri, Greece)	Monitoring of evaluations from the perspective of the awarding authorities (Mag. Dr. Silvo Korez, Austria)
	LUNCH				
	14.15 - 15.15	Competence of evaluators and awarding authorities (Dr. Nikos Sidiropoulos, Greece)	University Evaluation. A case study (Prof. Teodora Georgieva, Bulgaria)	RTDI Public Procurement Legislation in ERDF and IPA countries (Prof. Lena Tsipouri, Greece)	real-case based group exercises
	15.15-16.15	Utilisation of evaluation results - Usefulness of evaluation, (Mag. Peter Kaufmann, Austria)	Ministry/Research Agency/ Awarding authority Evaluation. A case study (Dr. Balázs Borsi, Hungary)	RTDI Public Procurement Legislation in ERDF and IPA countries (Prof. Lena Tsipouri, Greece)	real-case based group exercises

Table 2: TRAINING MODULES FOR OFFICERS FROM THE RTDI AWARDING AUTHORITIES.

		Monday	Tuesday	Wednesday	Thursday
POLICY-DELIVERY AND PROGRAMME OWNERS	9.00 - 10.00	Introduction to the course and overview of RTDI evaluations (Dr. Nikos Sidiropoulos, Greece)	RTDI System Evaluation. A case study (Prof. Teodora Georgieva, Bulgaria)	Evaluation Platforms. The Austrian example (Mag. Dr. Klaus Schuch, Austria)	Constructing the Terms of References (Mag. Dr. Klaus Schuch, DI Martin Felix Gajdusek, Austria)
	10.00 - 11.00	History of RTDI evaluation, definitions, types, levels, timing of evaluations (Dr. Nikos Sidiropoulos, Greece)	A Structural Funds Operational Programme Evaluation. A case study (Prof. Teodora Georgieva, Dr. Todor Galev, Bulgaria)	Evaluating Economic Impacts (Dr. Milos Besic, Montenegro)	Constructing the Terms of References (Mag. Dr. Klaus Schuch, DI Martin Felix Gajdusek, Austria)
	COFFEE BREAK				
	11.15 - 12.15	Design of evaluation logic charts (Mag. Peter Kaufmann, Austria)	Programme Evaluation. A case study (Prof. Djuro Kutlaca, Serbia)	Evaluation of social impact of research (Dr. Todor Galev, Bulgaria)	The EVAL-INNO Platform and Databases of Evaluators (DI Martin Felix Gajdusek, Austria)
	12.15 - 13.15	Rules and ethics for evaluators and commissioning institutes, (Mag. Peter Kaufmann, Austria)	Research Institute Evaluation. A case study (Dr. Balázs Borsi, Hungary)	Overview of evaluation basic tools and methodologies (Prof. Lena Tsiouri, Greece)	Monitoring of evaluations from the perspective of the awarding authorities (Mag. Dr. Silvo Korez, Austria)
	LUNCH				
	14.15 - 15.15	Competence of evaluators and awarding authorities (Dr. Nikos Sidiropoulos, Greece)	University Evaluation. A case study (Prof. Teodora Georgieva, Bulgaria)	RTDI Public Procurement Legislation in ERDF and IPA countries (Prof. Lena Tsiouri, Greece)	real-case based group exercises
	15.15 - 16.15	Utilisation of evaluation results - Usefulness of evaluation, (Mag. Peter Kaufmann, Austria)	Ministry/Research Agency/ Awarding authority Evaluation. A case study (Dr. Balázs Borsi, Hungary)	RTDI Public Procurement Legislation in ERDF and IPA countries (Prof. Lena Tsiouri, Greece)	real-case based group exercises

The implementation

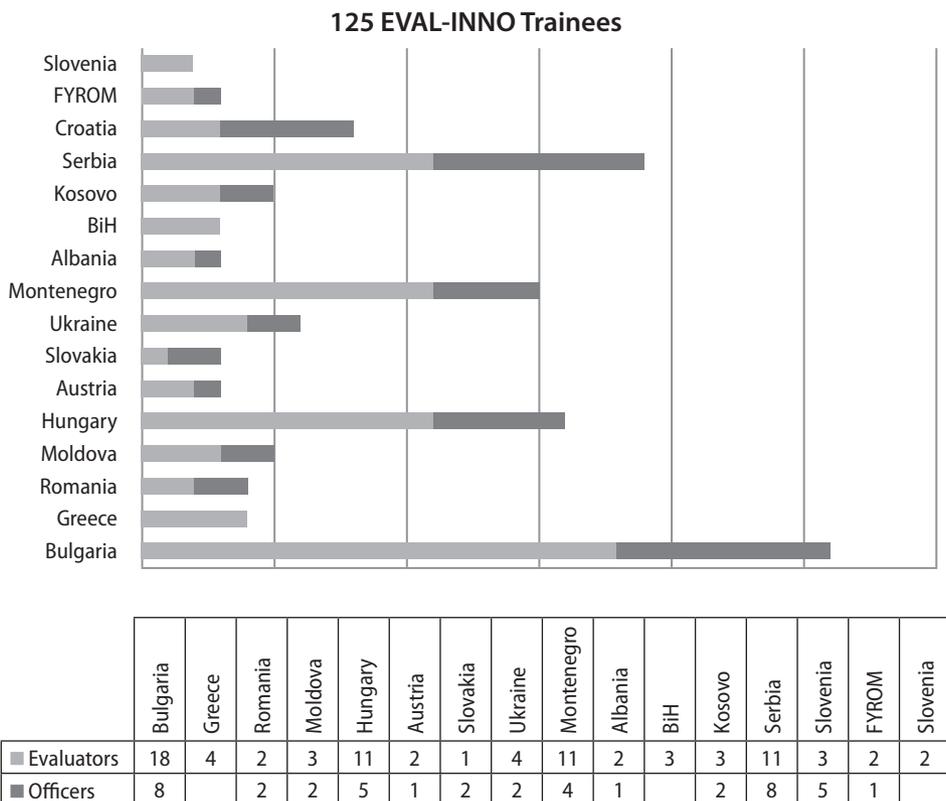
The training modules were carried out four times in the countries of Bulgaria, Hungary, Montenegro and Serbia. Financial resources to facilitate the participation of evaluators and programme officers from the SEE region, and outside the partner countries, were earmarked. The dates of the trainings were:

- In Bulgaria, from 18-22 March 2013;
- In Hungary, from 15-19 April 2013;
- In Montenegro, from 17-21 June 2013;
- In Serbia, from 7-11 October 2013.

The procedure for selecting the trainees was based on a database that was created through a mapping exercise performed within the frame of the project. An invitation was sent to the evaluators and officers of the awarding authorities within the EVAL-INNO database to complete a relevant participation form. Moreover, an open call for participation was launched on the EVAL-INNO RTDI Evaluation platform (<http://eval-inno.eu/>). The final selection was based on the principal first-come, first-served (FCFS).

In the end, 125 trainees (82 evaluators and 43 officers from awarding authorities) were trained. They originated from 16 countries in the SEE region. In every seminar, 24 lectures and 9 group exercises were organized for the evaluators. For the other group of the programme officers, 20 lectures and 1 group exercise were organised. Moreover, the 12 trainers taught and produced educational material for their lectures and group exercises, which are available online at: <http://www.eval-inno.eu/index.php/events/training-events-and-seminars/74-presentations-trainings>.

Figure 1: THE DISTRIBUTION OF THE TRAINEES IS SHOWN IN THE NEXT DIAGRAM.

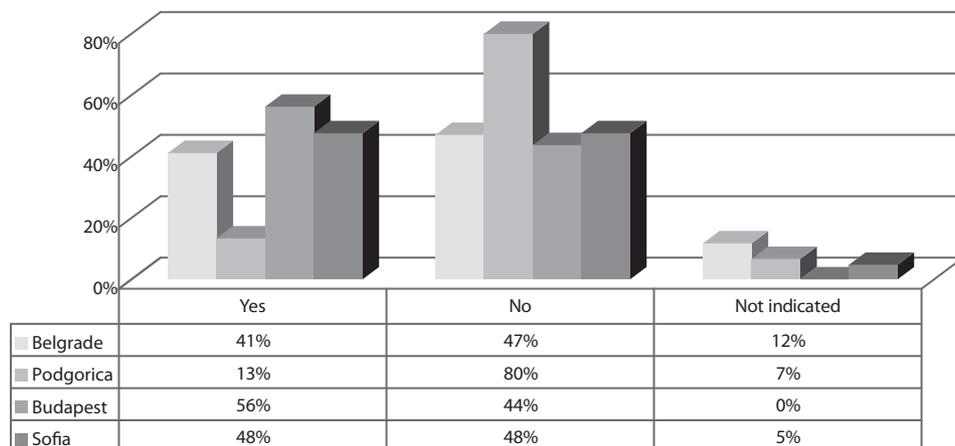


The feedback from the trainees

The trainees at the four training seminars were asked to provide their feedback regarding their experiences through structured questionnaires.

Figure 2 and 3: FOR MOST OF THE TRAINEES (EV-EVALUATORS, PO-PROGRAMME OFFICERS) IT WAS THE FIRST TIME THAT THEY PARTICIPATED IN A SIMILAR TRAINING EVENT.

EV: Have you participated in similar events before?



PO: Have you participated in similar events before?

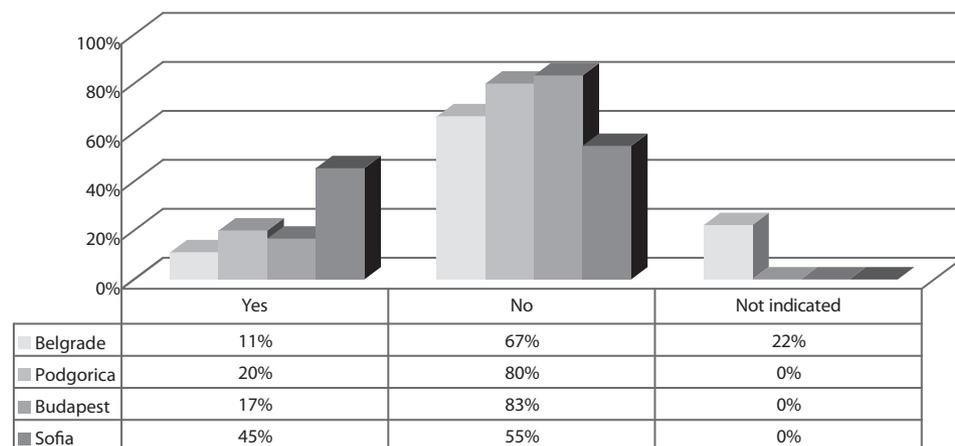
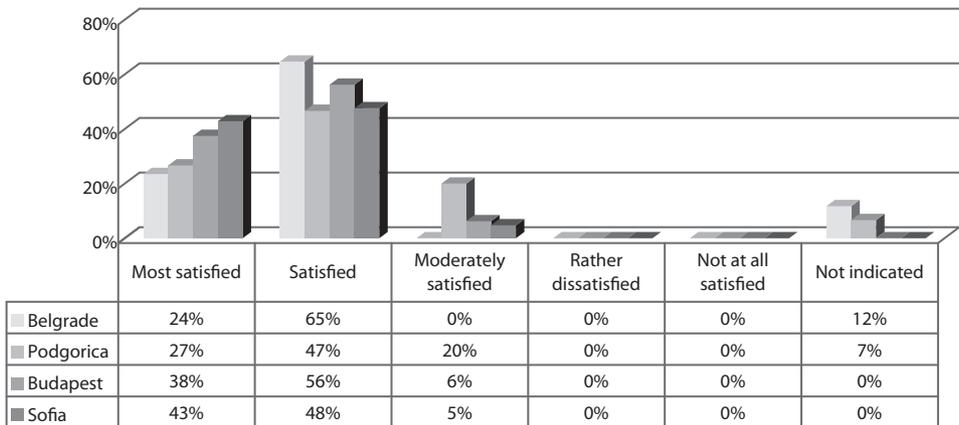
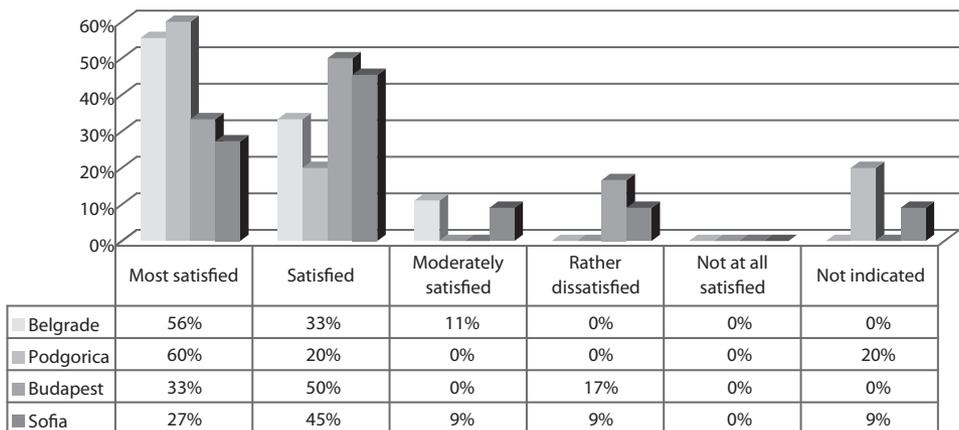


Figure 4, 5, 6 and 7: ALMOST ALL THE ATTENDEES WERE EITHER MOST SATISFIED OR SATISFIED WITH THE CONTENT AND THE ORGANIZATION OF THE SEMINARS.

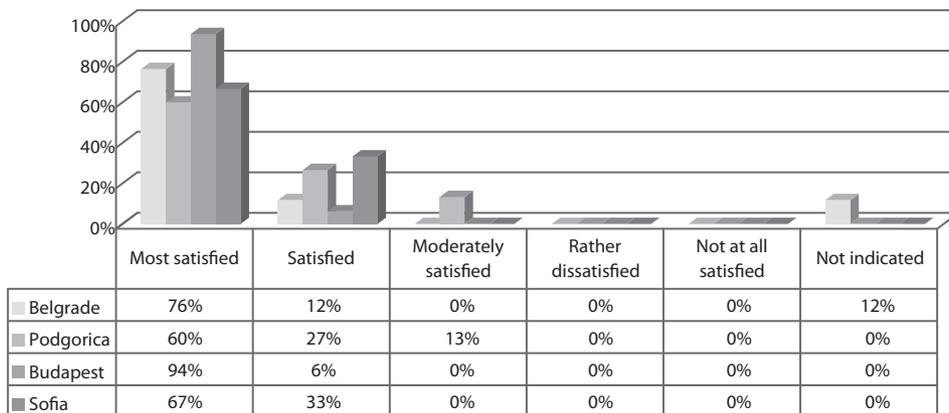
EV: Overall, how satisfied are you with the content of this Workshop?



PO: Overall, how satisfied are you with the content of this Workshop?



EV: Overall, how satisfied are you with the organisation of this Workshop?



PO: Overall, how satisfied are you with the organisation of this Workshop?

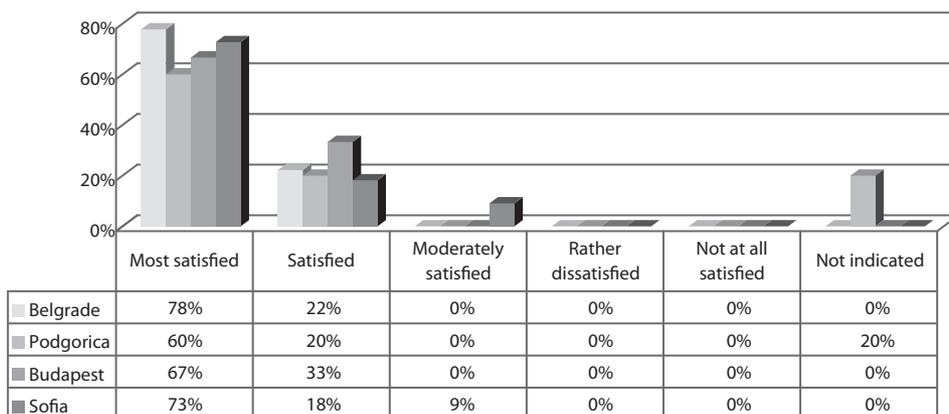
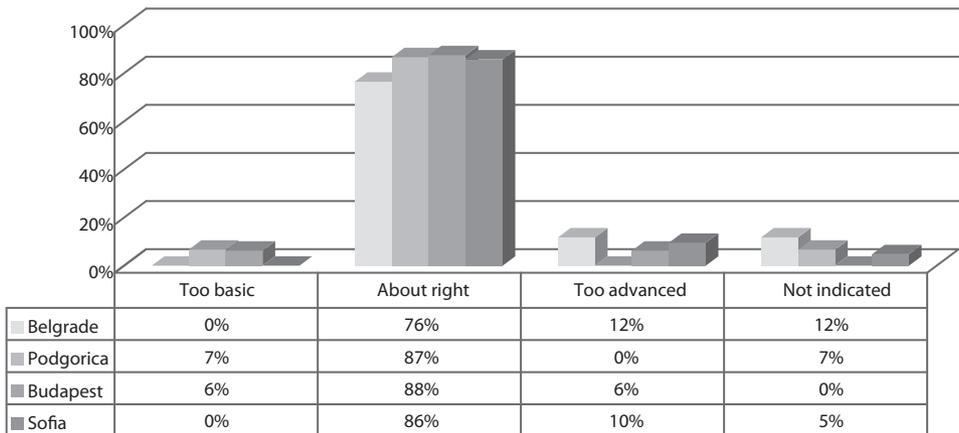


Figure 8 and 9: THE ACADEMIC LEVEL OF THE LECTURES AND EXERCISES WAS ABOUT RIGHT, RELATIVE TO THE EXPERIENCE LEVEL OF THE TRAINEES.

EV: For your experience level, the workshop training was:



PO: For your experience level, the workshop training was:

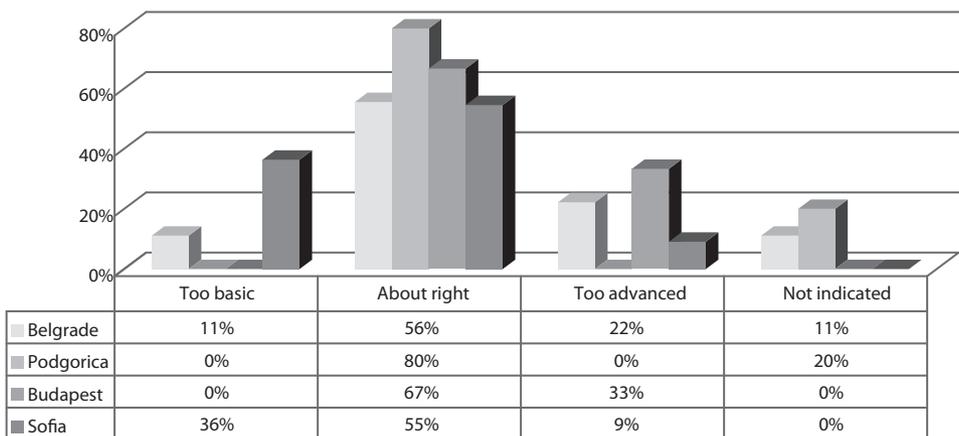
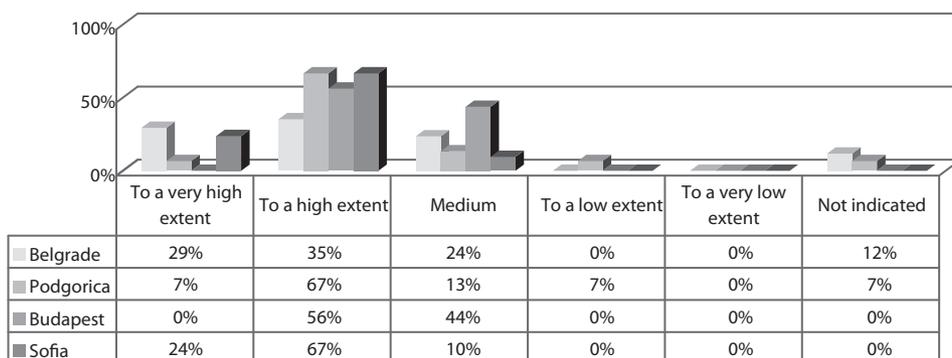


Figure 10 and 11: THE TRAINING SEMINARS COVERED EITHER TO A HIGH OR VERY HIGH EXTENT, THE TOPICS THAT THE TRAINEES EXPECTED.

EV: To what extent has the workshop covered the topics you expected?



PO: To what extent has the workshop covered the topics you expected?

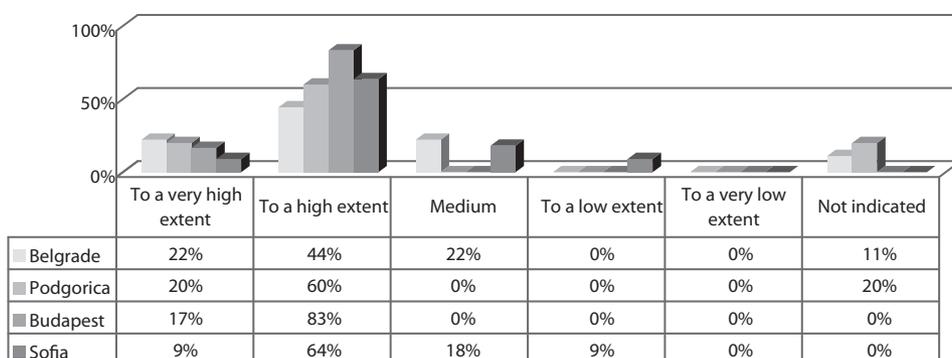
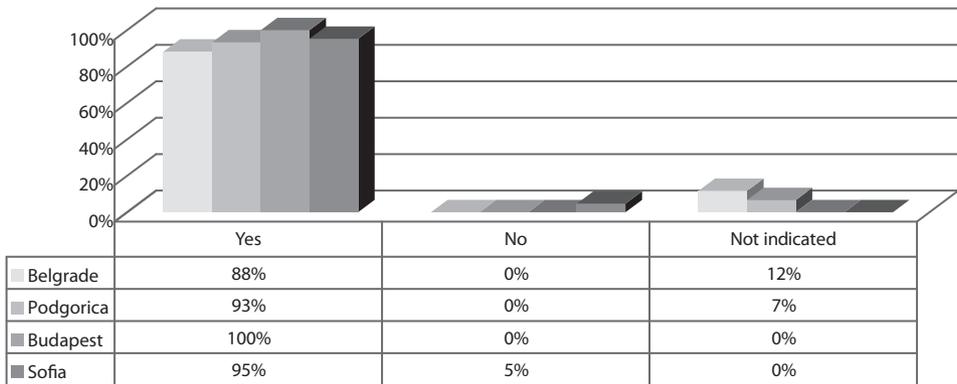
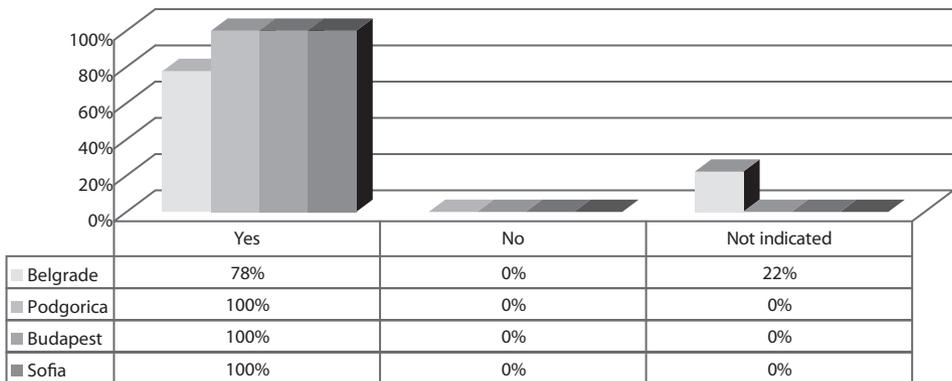


Figure 12 and 13: ESSENTIALLY ALL OF THE ATTENDEES WOULD RECOMMEND THE EVAL-INNO TRAINING WORKSHOPS TO THEIR COLLEAGUES.

EV: Would you recommend this kind of training workshop to a colleague?



PO: Would you recommend this kind of training workshop to a colleague?



The future perspectives

This was the first attempt in the region to set up training seminars on RTDI evaluations and it proved to be successful. This experience gives promising signs that similar training events, or shorter courses on specific topics regarding RTDI evaluations, could be organized as a first step at national level in all SEE countries. The EVAL-INNO partners could contribute with their experiences towards the facilitation of these initiatives. Regional training events in more advanced topics regarding the RTDI evaluations could be organised and hosted within the frame of other projects, conferences or meetings.

The added value from national or regional training events, beyond the concrete aim of developing the needed capacities and competencies for comprehensive RTDI evaluations, could be the bottom-up stimulation of an evaluation culture, especially for the officers at the awarding authorities.

Benchmarking application-oriented public research organisations in South-East Europe: experience of six cases

BALÁZS BORSI

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1. The approach and the benchmarking framework

Since its first description in 1989, benchmarking has become increasingly popular in management, but it has also become increasingly relevant for policy making.¹ Benchmarking is an analytical management technique, which may be used to compare internal performance with the best external performance to identify strengths and weaknesses. It can reveal good practices that can be replicated and implemented to improve performance beyond previous levels, on a continuous basis.² There are many more definitions of benchmarking available, but three components are common:³

1. **Comparison:** there must be some kind of comparison performed, be it objects, skills, processes, technologies, policies, conduct etc.;
2. **Systematic measurement:** there must be predefined processes and techniques of measurement applied; such measurement can be targeted at different measurement levels from soft information to hard data;
3. **Improvement effort:** the overall objective of a benchmarking exercise should be improvement, towards which the organisations concerned make efforts.

Benchmarking can virtually be used in all domains, from industrial processes through product characteristics to behavioural patterns and management behaviour. Wherever used, benchmarking makes an important distinction between performance and practice. Performance refers to the accomplishment of tasks, how successfully they are performed and result over a given period of time. Practices refer to the ways the tasks are accomplished and the conduct that leads to results. If good – or, as in the above definition, “the best external” performance is identified, benchmarking can help in understanding the practices that lead to that high level of performance. These are the good practices a benchmarking exercise searches for.

1 The classical reference is Robert C. Camp's book: “Benchmarking – the search for industry best practices that lead to superior performance” (Camp (1989)). The roots of benchmarking thinking, however, go back to at least the first decades of the 20th Century, when German generals studied circuses in the US for their logistical processes, or when Toyota managers studied mass production technology at Ford.

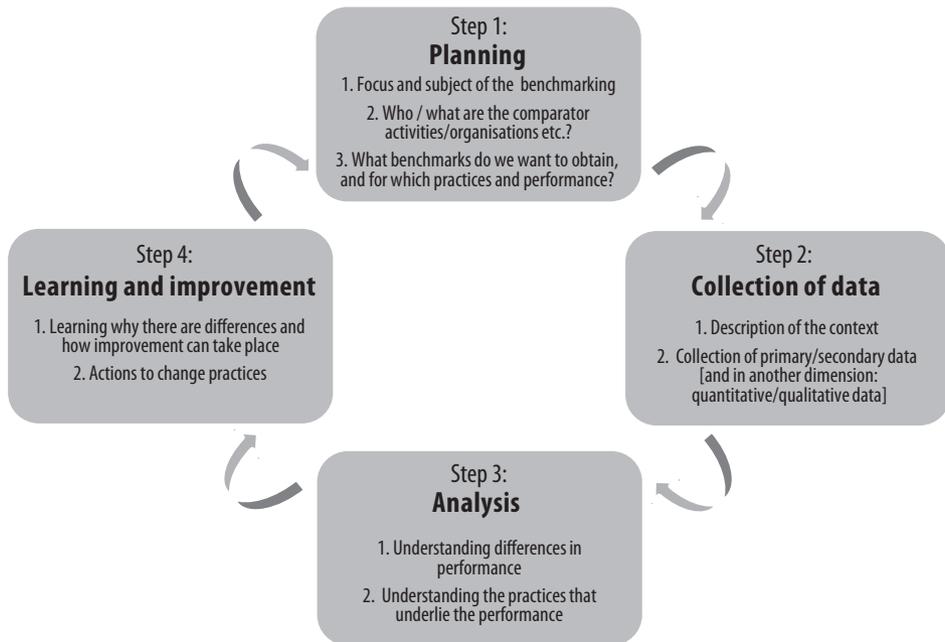
2 This definition was also used in the *RECORD Manual* (2004.)

3 The argument can also be found in *De Spiegeleire* (2012).

There are four general steps to be followed in a benchmarking exercise. These are summarised in Figure 1. In EVAL-INNO, these general steps were used in benchmarking application-oriented public research organisations (PROs). These are research and technology development organisations that aim at the application of new knowledge with substantial impact on the market, on the quality of life and/or in the public sector. Six such organisations were involved from Austria, Bulgaria, Greece, Hungary, Montenegro and Serbia.

In a cross-country exercise, one must be aware of the differences between the countries, because what may be good practice and lead to good performance in one country may not be good practice in another. There are systemic differences between countries, so in a cross-country setting, it is advised to look for the **differences between the practices** with the aim of learning from the comparisons.⁴

Figure 1: A GENERALISED BENCHMARKING CYCLE.



Source: Borsi, B. (2013): Benchmarking Analysis. Evaluator Training material in EVAL-INNO.

4 Lundvall and Tomlinson (2001).

There are different types of benchmarking, which can be used in the case of R&D based innovation organisations, these include:

- **Strategic benchmarking**, which seeks to identify the winning strategies that have enabled high-performing organisations to be successful. Information is collected with the aim to improve one's own strategic planning and positioning;
- **Performance benchmarking**, which refers to the comparison of the organisational key processes, products and services;
- The purpose of **process benchmarking** is to learn to improve one's own selected processes. This type of benchmarking seeks to identify the most effective operating practices from several organisations performing similar operational functions;
- **Competence benchmarking** relies on the idea that the competitiveness rests on the ability to change conduct and behaviour of individuals and teams.

Out of the benchmarking techniques, two were used for the purposes of the EVAL-INNO project:⁵

- Competitor or **external benchmarking** considers how an organisation performs against competitor benchmarks. Ideally, such benchmarking investigation shall show what the comparative advantages and disadvantages are between competing organisations. The term external refers to organisations that may not be direct competitors but still they may be a source of valuable information;
- In **functional benchmarking** investigations, functional experts from one organisation generally focus on their own area of expertise. The key distinction in this type of benchmarking is that it can focus on any organisation – the common element being the analysis of excellent functions and practices.

In EVAL-INNO an external strategic benchmarking exercise was implemented.⁶ When strategies and strategic positions are compared, one cannot neglect the basic approach of strategic management, namely the idea that an organisation shall look carefully at, and take on board, the signals from the external environment and mobilise its own internal resources, competencies and capabilities to create value and sustain funding.⁷ The way the benchmarking framework was designed

5 Benchmarking types and techniques were summarised from the *RECORD Manual* (2004). Strategic, performance and process benchmarking are commonly referred to in the management literature.

6 This article relies on the full EVAL-INNO benchmarking report (*Benchmarking application-oriented PROs* (2014)).

7 Or as put in a simple SWOT analysis, opportunities and threats (for external forces), strengths and weaknesses (for internal resources).

makes the benchmarking suitable for use by the management of research organisations for monitoring progress in the three key dimensions:

1. societal needs;
2. researcher response; and
3. socio-economic impacts.

In the context of research and innovation, **societal needs** involve complex phenomena. For example, the concept of Responsible Research and Innovation (RRI) contains a separate “societal needs” dimension. RRI refers to “the comprehensive approach of proceeding in research and innovation in ways that allow all stakeholders that are involved in the processes of research and innovation at an early stage (A) to obtain relevant knowledge on the consequences of the outcomes of their actions and on the range of options open to them and (B) to effectively evaluate both outcomes and options in terms of societal needs and moral values and (C) to use these considerations (under A and B) as functional requirements for design and development of new research, products and services. The RRI approach has to be a key part of the research and innovation process and should be established as a collective, inclusive and system-wide approach.”⁸

Taking the societal needs approach of the Responsible Research and Innovation (RRI) concept on board, as well as the Europe 2020 strategy considerations, in the EVAL-INNO benchmarking framework there were three components to observe the channelling of societal needs into successful research organisations:

- **Community involvement and interactions:** how deep the community is involved in framing the research directions and to what extent stakeholders become aware of the risks of the research performed in the research organisation;
- **Demand articulation:** how strong are the external forces that affect the research organisation for developing (and, in some cases, utilising) novel knowledge in line with its vision. Funding, and the services expected for the funds, are the constituents of the demand articulation component;
- **Grand challenges:** in the age of accelerating globalisation and mobility of knowledge, there are scientific-technological-social challenges, to which public research organisations need to find some answers. These challenges may determine important territories of the activities. For the sake of simplicity and usability in the European context, the grand challenges of the Europe 2020 strategy were taken as the basis for the measurement.

8 See EC (2013), p.14.

To the societal needs, there is **researcher response**, where the research organisation needs to organise itself so that the needs and the demand are met with 'supplies'. The proposed collection and measurement of such organisational practices is based on the resource-based view of the organisation⁹ and the value chain concept.¹⁰ The three components of researcher response are as follows:

- **Staff and competencies:** This broad category covers the availability of a critical mass of researchers and supplementary personnel, leadership, the ability to learn from external parties and particular core competencies that are needed for good research performance.
- **Main processes:** An innovation-oriented research organisation's main task is the creation and application of knowledge. The main related processes are: the management of incoming knowledge and other influences, knowledge creation and new knowledge development, and management of outgoing knowledge. Attention is paid to user involvement: since the benchmarking method is developed for application-oriented, innovation-focused R&D organisations, the concentration on observing the related practices is justified.
- **Support activities:** research infrastructure and ICT infrastructure, organisational knowledge management practices, human resources management and administration of activities.

As a result of the researcher response, the research organisation will achieve impacts, which shall also indicate the **performance** of the research organisations. These are jointly coined **societal impacts**, and in the benchmarking framework there are three basic types of such impacts:¹¹

- **Socio-economic impacts:** Contribution to new products, technologies, processes and organisational methods, marketing tools, the creation of spin-off firms, licences and commercialisation, contribution to standardisation, metrology services and improvement of legislation, contribution to raising the standards of living and the quality of life.
- **Environmental impacts:** Contribution to decreasing the ecological footprint. A portion of the new products / technologies / processes, to which the research organisation contributes with its knowledge can actually help reducing the ecological burdens. However, the knowledge inputs into environmental

9 See *Barney* (1991).

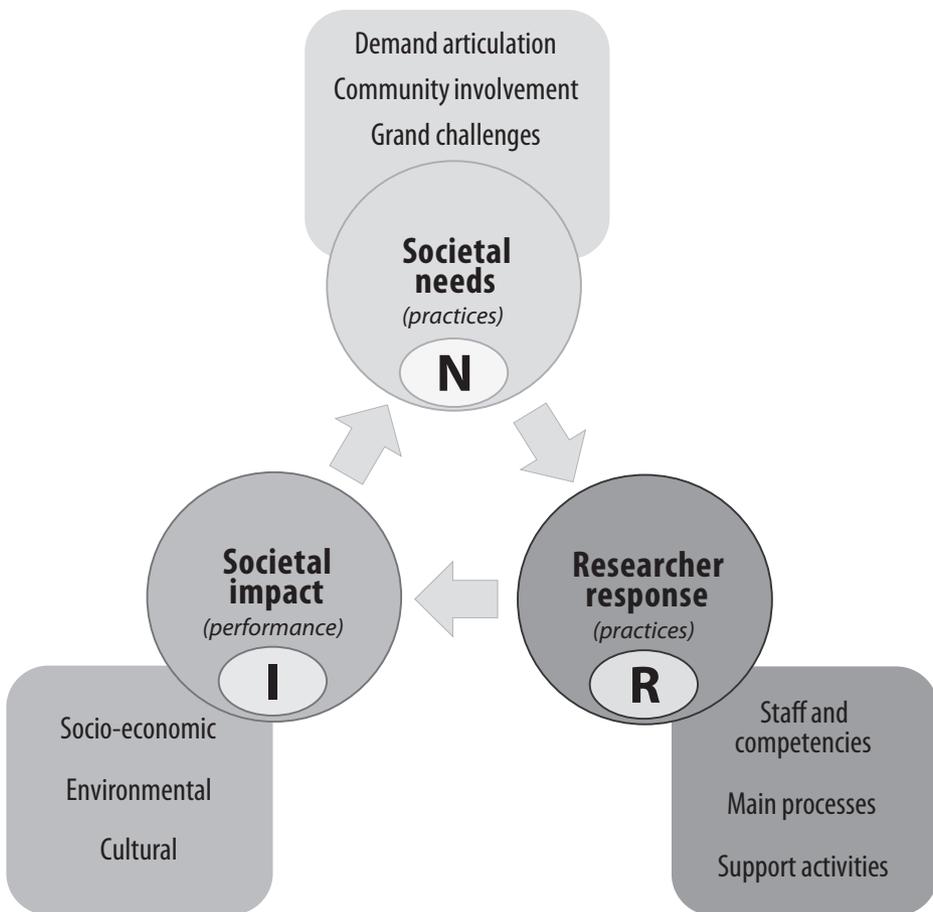
10 See *Porter* (1995).

11 When talking about researcher organisations, societal impacts as a kind of reflection to societal needs appears in the thinking of *Bennett* (2011), who tried to translate the research vision and values of the Bournemouth University to actionable practices (even if the author did not call it that, it was a step or a published thinking to develop a strategic management tool for a research organisation).

innovations, of which the following main types can be identified, are also important to note for: pollution prevention / reduction solutions, waste management and recycling, innovation for environmental monitoring, regulation and institutional change.

- **Cultural impacts:** Contribution to the accumulation of the knowledge-base via publications, the education and training of people, and raising awareness to new knowledge developments in the media.

Figure 2: THE EVAL-INNO BENCHMARKING FRAMEWORK.



The **underlying assumption** of the benchmarking framework is that RTDI organisations, which perform well in a few or many directions of societal impact, will also reveal good practices in the researcher response and societal needs dimensions. However, due to the complexity of knowledge flows and the way research organisations actually operate, in some cases it is not easy to clearly distinguish performance metrics/indicators and metrics/indicators that describe practices. For example, the high number of good quality publications can equally signal good research performance and good knowledge codification and dissemination practices – and there are many other possible examples within the framework. The impacts will greatly differ across research and professional disciplines, therefore, as noted before, the comparison of practices with the aim of learning is the intended potential use of the benchmarking exercise.

The EVAL-INNO way of looking at research entities is a new approach, but taking the complexity of RTDI and organisations jointly is not without antecedents. Although it is not possible to do an entire review in a book chapter, for future reference a few are briefly discussed:

- There have been attempts to look for benchmarks that put the research process at the heart of the measurement concept, evidenced in the Balanced Scorecard framework;¹²
- The already mentioned RECORD framework proposes measurement of knowledge generation, knowledge utilisation and knowledge diffusion across the dimensions of internal, external and negotiated factors of the research organisation;¹³
- A framework for benchmarking contract research organisations proposes to take a look at organisational structure, funding, human resources, management issues, partnerships and networking, impact and learning;¹⁴
- For biology research organisations, a complex benchmarking tool has been developed covering the dimensions of enablers (organisation and facilities, human resources, knowledge management), strategy (vision, tools, principles), and performance (IP, bibliometrics, grants, costs) in light of the external environment (legislation and the national approach to R&D).¹⁵

Beside the above complex benchmarking attempts, there are many other comparative analyses and benchmarking exercises available for research organisations, usually focusing on a few areas of performance metrics.

12 *Kerssens-van Drongelen and Cook (1997).*

13 *RECORD Manual (2004).*

14 *Gijsbers et al. (2005).*

15 *van Hartena et al. (2010).*

2. Cases involved and mode of work applied

In the EVAL-INNO project there has been a determination that there should be an application-oriented public research organization involved in the benchmarking exercise from each participant country. The following organisations were selected for the comparison:

1. **Wasser Cluster Lunz** (WCL, Austria): freshwater ecosystem research (12 researchers-developers in 2012 on a full-time equivalent (FTE) basis);
2. **Institute of Marine Biology** (IMB, Montenegro): complex marine research involving the flora, fauna, fisheries, mariculture, and chemistry of the sea (17 researchers-developers FTE);
3. **Chemical Process & Energy Resources Institute** at the Centre for Research and Technology Hellas (CPERI, Greece): chemical engineering, including energy, environment, materials and process technologies (145 researchers-developers FTE);
4. **Emil Djakov Institute of Electronics** of the Bulgarian Academy of Sciences (EDIEBAS, Bulgaria): basic science and technology of photonics, optoelectronics, environmental monitoring, laser biomedical research and applications (73 researchers-developers FTE);¹⁶
5. **Mihailo Pupin Institute** (MPI, Serbia): computation technologies and ICT research and development (156 researchers-developers FTE);
6. Óbuda University **Neumann Faculty of Informatics** (ÓU-NFI, Hungary): application-oriented software research and development (25 researchers-developers FTE).

In a benchmarking exercise in social science, the description of the contextual factors should be strongly emphasised, a part of which can be implemented using desk research. The three dimensions of the benchmarking framework (societal needs, researcher response and societal impacts) and additional contextual factors were measured with the help of the following tools:¹⁷

- Questionnaire for the whole organisation, with a set of quantified and other metrics, focusing on the three years between 2010 and 2012;
- Questionnaire for the management and principal researchers;
- Interviews with the management and other employees of the research organisation;

16 The benchmarking exercise has been implemented for three Bulgarian Academy of Science institutes, and the EDIEBAS case was used for cross-country comparison.

17 The methodological details are included in the *EVAL-INNO Benchmarking Manual* (2014).

■ Interviews with national and regional stakeholders.

The questionnaires and interview schedules were used to implement the empirical information collection, based on which individual reports of each case were written by the project partners.¹⁸ Using the information in the questionnaires and the individual reports, the comparison of the different performance metrics and practices could take place, **laying a strong emphasis on understanding the differences in practices**. As good practices are context dependent, and the EVAL-INNO benchmarking exercise took place across different cultural and social settings, leaders from the benchmarked PROs were invited to a conference dedicated to discuss the learning potential of the comparisons.¹⁹

3. Excerpts from the findings

It is a challenge to present the findings of an ambitious cross-country benchmarking exercise on a few pages only. The following is a brief discussion of the main findings, with some examples highlighting the practices²⁰ explored. First, the organisational contexts are shown, then, along the three benchmarking dimensions, the most important results are presented. It is emphasised again that the point of this type of benchmarking is not to present the 'best in league' and to shame and blame those coming 'at the wrong end' of the comparisons, but to highlight good and interrelated practices, the understanding of which, in the local context, can be useful for the future.

3.1. Organisational contexts

The WCL, re-born in 2006, was a bottom up initiative of researchers that were committed to work on research fields initially covered already by the predecessor organisation. The renewed organisation took up the initiative by the three universities that expressed the wish to develop research and teaching activities on the site.

The mission of IMB was defined at its establishment in the 1960s and it has not changed substantively since then. It is centred around the maintenance and development of the Adriatic sea.

18 See the list of reports at the end of this article.

19 The conference was organised in Budapest, 15-16 January 2014.

20 The few quantitative comparisons are available in the full benchmarking report. See: *Benchmarking application-oriented PROs* (2014).

CPERI's mission is to conduct high calibre basic and applied research, to develop novel technologies and products and to pursue scientific and technological excellence in selected advanced areas of Chemical Engineering, including Energy, Environment, Materials and Process Technologies.

The Bulgarian Academy of Sciences (BAS) has roots back to the 19th century. EDIEBAS was established in 1962 within the wider context of industrialisation measures undertaken by the Bulgarian government, when developing a home-grown electronics sector was a high priority. Following the collapse of the centrally-planned economy, many application-oriented structures were eliminated in Bulgaria. Currently, the institute aims to "sustain and advance previous pioneering work by promoting the theory, basic science and technology of photonics, optoelectronics, environmental monitoring, laser biomedical research and applications."

Table 1: RESEARCH PROFILE AND OWNERSHIP OF THE SELECTED PROs.

	Austria	Montenegro	Greece	Bulgaria	Serbia	Hungary
<i>Name of institute</i>	Wasser Cluster Lunz	Institute of Marine Biology	Centre for Research and Technology Hellas	Emil Djakov Institute of Electronics of the Bulgarian Academy of Sciences	Mihailo Pupin Institute	Óbuda University - Neumann Faculty of Informatics
<i>Mission (or similar) statement</i>	WCL is an inter-university center for aquatic ecosystem research dedicated to the advancement and teaching of freshwater ecosystem sciences, at fundamental and applied research levels	(1) Further development of research at sea, (2) Application of new methods in monitoring of sea, (3) Conservation of biodiversity, (4) Further development of international cooperation, (5) Use of EU funds for science and mobility of scientists	to carry out fundamental and applied research with emphasis on development of novel products and services of industrial, economic and social importance	To acquire, accumulate and disseminate scientific knowledge and technologies in its research field, thus contributing to Bulgarian people's intellectual and material enrichment and to widening humankind's scientific horizons	Our mission is to provide to our clients rapid, cost-effective and immediately applicable solutions to their technical and organizational problems and enable them to perform efficiently in technologically advanced, profitable and supportive work environment.	(...) the research mission is centred around application-oriented research (...) The up-to-date knowledge is provided by a unique network of competency centres

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<i>Research / technology profile</i>	Freshwater ecosystems: Ranging from microbial ecology to biogeochemistry, from restoration ecology to aquatic ecosystem management, and from ecotoxicology to aquatic food web research	general biology and protection of the sea	Chemical and Biochemical Processes and Advanced Functional Materials; IT and telecom; Transportation; Agrobiotechnology and Food Engineering; Environmental Friendly Technologies; Biomedical Informatics, Biomedical Engineering, Biomolecular Medicine and Pharmacogenetics	photonics, nano-electronics and new materials, optical and microwave technologies	electronics, automation, process control, computers, telecommunications, digital signal processing, information systems, software engineering and robotics	Computer Networks, Systems Engineering, Operating Systems and Software Development, Mobile Informatics, Database Management, Information Security, Application Management, Service Management, and Business Information Systems
<i>Ownership</i>	University of Vienna, the Danube University Krems, the University of Natural Resources and Life Sciences, Vienna (BOKU Vienna)	University of Montenegro	founded in March 2000 as a non-profit organization that directly reports to the General Secretariat for Research and Technology (GSRT), of the Greek Ministry of Development	Bulgarian Academy of Sciences	state-owned company	Óbuda University

The Central Radio Institute was founded by the Yugoslav Government in 1946. In 1959, the Institute's name was changed to Mihailo Pupin Telecommunication and Automation Institute. From 1959 to 2007 MPI underwent several organisational changes. In 1968 the Institute switched from budget financing to become a self-financed organisation, and was simultaneously thoroughly restructured and reorganised. Today MPI is a state-owned company, but entirely market-oriented.

Óbuda University was established as of 1 January 2010, as a legal successor of Budapest Tech. The Budapest Tech was established in 2000, merging three traditional technical colleges, including: the Donát Bánki Technical College, the

Kálmán Kandó Technical College, and the Technical College of Light Industry. Today the Óbuda University has 5 faculties. The university mission is very much application-oriented, both for the teaching, and the research aspects. The Neumann Faculty of Informatics focuses on teaching computer engineering. Although there is no explicit mission statement, the research mission of the ÓU-NFI is to continuously pursue targeted applied informatics research.

With the exception of EDIEBAS, the PROs selected for the benchmarking study clearly have a **service and/or application-oriented mission**. EDIEBAS appear to focus more on fundamental research than the development of commercial or public-sector applications.

Four of **the organisations are strongly linked to universities**, with a demanded research profile, but the university linkages are of a different nature:

- ÓU-NFI, as a university faculty, has the strongest linkage, its main profile is education;
- IMB is a university research institute, with much less teaching obligations than NFI;
- WCL has three university owners, its researchers regularly teach there, but the main profile is research;
- CPERI is part of a non-profit research foundations, and many of its researchers are also faculty members of the University of Thessaloniki;
- EDIEBAS is a traditional academic research institute, which one commonly finds in post-socialist countries (but which also exist in France), the researchers regularly teach in higher education;
- MPI has weaker linkages to university, based on the figures provided, only a few of its researchers teach regularly in higher education. MPI also has the most pronounced market-orientation out of the selected PROs.

Consequently, the country-specific developments in higher education have the greatest direct impact in the case of ÓU-NFI. The frequent changes in higher education and their impact were mentioned only in the Hungarian case.²¹

Out of the other policy contexts, the globalisation of R&D and **the European Union's strengthening integration policies** in the field have influence on the PROs studied:

21 The possible future change of higher education research funding, which is being elaborated in Montenegro at the time of writing the IMB benchmarking report, may also have a great impact in the future.

- For MPI, international R&D cooperation became possible as soon as the sanctions were suspended and Serbia became eligible for funding from EU programs (during the Sixth Framework Programme). IMP became the most successful Serbian institution in terms of number of projects funded by the EU;
- In Bulgaria research and science activities appear to have come up higher on the political agenda, most likely as an influence of the EU. Nevertheless, it had little impact on the funding of the institute, which have remained austere;
- For CPERI, the funds have gone up and down following a Structural Funds' cycle, while criteria and prioritisation for distributing them have not been clear. As all national research centres, CPERI also has to rely heavily on competitive funding;
- Grants co-funded by the Structural Funds have been important for the ÓU-NFI as well;
- Significant EU-funding is available also for the IMB, however, an even broader impact is the harmonisation of the legislation during the negotiation of membership;
- In the case of WCL, the European water framework directive is mentioned as an important driver of the technology development for the public sector.

The **business sector and industry developments** are specifically important for those PROs, which gain substantial funding from companies. The Information and Communication Technology (ICT) industry did not experience a setback, and as a result, ICT-development remains as a high priority on most government agendas, and therefore the sector-specific conditions have remained relatively favourable for both IMP and ÓU-NFI. CPERI has long-term industry supporters and ranks at the top in Greece, if measured by the contribution of foreign industry to its operational cost. It has also been affected by the financial crisis as the state subsidies declined sharply (to a historic low 8.5% in 2012). CPERI's dependence on industrial contracts leads to short-term research agendas to comply with clients' needs. In the case of EDIEBAS, the industry conditions are bleaker: the firms which might be interested in working with the institute in developing products and services often lack the financial resources to fund such activities. In the case of WCL, the European regulations on water safety provides a framework, which, coupled with the local (public) demand, provides a more stable external environment. It is less evident though in the case of IMB.

Overall, and summarising the above-discussed contextual factors, **it would be misleading to make a comparison of the contexts** across the different countries. The following can be stated:

- The university environment is important in each of the cases, but the influence of the university on research differs (the strongest being for ÓU-NFI, the weakest for MPI);
- The European Union has a great impact in each of the 6 cases;
- WCL is operating in a developed national economy and the regulations and local communities provide a general favourable environment for applied water research;
- IMB is a renowned and stable institution in a less developed economy, focusing on applications for the common wellbeing linked to the research of the sea;
- CPERI is strongly influenced by the financial crisis of 2008 and its aftermath, however, its global stance helps in securing the necessary funds for research;
- EDIEBAS is a traditional academy of science institute, with a heritage of being separated from practice and industry in the past;
- In the case of ÓU-NFI and MPI, the relatively favourable ICT-industry environment for research can be mentioned. ÓU-NFI is a renewed and young research organisation, MPI is more traditional, but has become market-oriented in the past decades.

As one of the interviewees said *“the external environment is never easy, one has to fight for everything”* – yet obviously the benchmarks and the related practices presented later in this report are linked to the contextual environment of the PROs studied.

3.2. Practices to take societal needs on board

The vision, and especially the related mission, indicate the general principles and objectives, which guide the activities of an application-oriented Public Research Organisation (PRO). It is considered good practice if the **vision and mission are developed in collaboration** with the stakeholders. The PROs examined have rather different practices, related also to the general contextual factors. In the first phase of its establishment the WCL organised a strategy and vision building workshop, which was then repeated. In the end, the vision and long-term research agenda, in accordance with the stakeholder needs and expectations, was born. Changes are fast in ICT and in terms of mission and orientation, MPI and ÓU-NFI responds differently: MPI makes suggestions to its clients on which way to go, whereas ÓU-NFI has a more adaptive approach.

Globalisation – the process of increasing economic, technological and social integration, world governance and human mobility – requires successful PROs to interact more and more with the local and global communities around the

research organisation. A successful PRO purposefully identifies and **networks with its most influential communities** (which can be both global and local). There is some awareness for these issues in three of the 6 PROs: WCL, CPERI and MPI. Despite global embeddedness, the national and especially the local industrial community of CPERI have only limited interaction with defining the research directions of the institute. Efforts to open the institute to the local industry have taken place in the recent past.

The **risks of research**, seen as the potential harm that can be caused by the research activity, are increasingly important issues for socio-economic development. The PROs do not necessarily discuss the risks of long-term research directions with the stakeholders.

The structure of the economy and the society is changing fast. A research organisation, whose activities were in great demand yesterday, may find itself with much less interest from the potential users of its research. The **strength of the current and the potential future demand** can be crucial for success. WCL and MPI seem to have strongly articulated demand, whereas CPERI and ÓU-NFI meets a favourable external environment, in which the Structural Funds also play an important role.

The table below summarises the practices of taking the societal needs on board.

Table 2: SOCIETAL NEEDS: THE QUALITATIVE FACTORS EXPLORED.

	WCL (Austria)	IMB (Montenegro)	CPERI/CERTH (Greece)	EDIEBAS (Bulgaria)	MPI (Serbia)	ÓU-NFI (Hungary)
N1. Building joint vision/mision, including societally relevant objectives	●	●	●	○	●	○
N2. Embeddedness into global and local communities of stakeholders	⊙	●	⊙	●	⊙	●
N3. Awareness to risks (together with stakeholders)	●	n.a.	n.a.	n.a.	●	○
N4. Services expected / demanding users	●	⊙	●	○	●	●
N5. Funding combined with (appropriate) assessment	n.a.	⊙	●	○	n.a.	○

Legend:

- practice/factor/impact is clearly present
- practice/factor/impact is weakly present and there is no particular tendency to make it stronger
- the evolution of practice/factor is determined by external (often negotiable) or global forces
- ⊙ awareness for the practice/factor/impact is helping its evolution currently
- practice/factor/impact is non-existent
- n.a. benchmark/practice not available from the case study

Source: compilation based on processing the EVAL-INNO individual benchmarking reports

Consistent funding (or the lack of consistent funding) is probably the most important factor that influences the activities of PROs. Without continuous financial support, some PROs would be unable to operate.²² The recent financial crisis does not help in supporting the required stable liquidity positions, which can easily have an impact on (infrastructure) development projects as well. If there are regular and returning clients and the public funding is not withheld (or does not fluctuate), it indicates good practice. Additionally, the benchmark should also indicate if the most important financial supporters have any expectations in terms of research results/impact and if meeting those expectations are appropriately measured. Whereas in EDIEBAS one sees examples of assessment, funding cannot be stated as consistent. Although not in a good financial position either, the need for assessment is acknowledged by the IMB management and the funding authorities.

In addition to the above, the so-called **grand challenges** are specific constituents of societal needs. In European-level discussions, six broad grand challenges have been identified.²³ These grand challenges will be paid increasing attention during European-level policy actions and funding. Hence, a PRO, whose research has direct relevance for the European grand challenges, is likely to be in a better position for both European and national funding. The PROs studied are prepared to orientate towards the grand challenges – naturally, these orientations are focused on 2-3 themes in general.

3.3. Researcher responses

In internationally competitive application-oriented PROs, **researchers** have skills that combine academic and industrial knowledge (technological competence). One should note that in different scientific and technological disciplinary areas the critical mass of researchers will vary and so will their required skills. The share of highly skilled researchers may be approached by using academic attainment levels; however, this benchmark should be treated with care. With the exception of EDIEBAS, the other PROs studied show an increasing trend of researcher employment.

22 The EVAL-INNO project developed measurement of some qualitative benchmarks further using those in the *RECORD Manual* (2004), covering the areas and practices of demanding users, consistent funding, skilled researchers, learning from external parties, human resources management, infrastructure, innovations, patents, publications, spin-offs, researcher mobility, funding structure and consultancy.

23 (i) health, demographic change and wellbeing; (ii) food security, sustainable agriculture, marine and maritime research, and the bio-economy; (iii) secure, clean and efficient energy; (iv) smart, green and integrated transport; (v) inclusive, innovative and secure societies; (vi) climate action, resource efficiency and raw materials.

Charismatic leadership can substantially help the PRO to carry out its mission and research activities effectively. Different organisation size may imply different requirements towards the personality of the leader. In smaller organisations a good leader can substitute for many good practices of progressive management. In large organisations however, the strategic thinking of the leader and formalised strategic management practices are important factors. The PROs benchmarked have, in general, strong and charismatic leaders.

Learning from external parties is a factor that depends also on the interests of the external party. In the case of application-oriented PROs, business relationships are particularly important, but other R&D performing entities can also be the source of relevant external knowledge. MPI and IMB are particularly focused on external learning aspects, making good use of joint opportunities with other parties.

Core competencies are featured in successful organisations, therefore, also in successful PROs. In the context of research, core competence is a factor seen as crucial for making the PRO work: it is hard to imitate, it can be used across different activities and disciplinary areas, and it contributes substantially to the research efficiency experienced by the clients. Core competencies can be found in each of the PROs studied. For example, CPERI's core competence is focused in selected advanced areas of chemical engineering. The methodological know-how, the functional areas, the scientific and technological field competence, and the infrastructure jointly provide for CPERI's core competencies that are hard to imitate. In smaller organisations, as ÓU-NFI, core competencies are rather horizontal, encompassing flexibility, cost advantages and creativity.

The direction and depth of **international researcher mobility**, the way the PRO profits from hosting researchers and sending its own researchers abroad, is a very important constituent of today's research. The PRO can exert substantial research impact by sending researchers abroad. The hosting of foreign researchers helps attracting relevant researcher knowledge from abroad. Compared to the total researcher number, the WCL and IMB are in a better position to attract researchers for longer-term stays.

Collaboration, and the making of strategic alliances, are important activities for any successful organisation in the 21st century and PROs are no exception. Collaboration intensities are generally high, with the exception of EDIEBAS and ÓU-NFI.

Conference presentations can greatly contribute to the research activities of public research organisations. Conferences serve as a point of measurement and

quality assurance for ongoing works, as a mean for disseminating own research results and practices, and as an opportunity to learn and network. WCL and ÓU-NFI researchers are more frequently engaged in conference presentations, and most of such presentations are international.

Research is a systematic activity and as such, PROs may rely on methodologies and methods that were developed by other people, research groups or organisations. However, the development of **distinctive own research methods** can be crucial both for long-term sustainability of the research performance and the attraction of clients. MPI, CPERI and WCL are able to develop substantial own research methods and technologies.

Intellectual property is interwoven with the bulk of the research activities: new knowledge, new methods, new applications, new publications etc. can equally be protected by IP means. The PRO, its client, competitor, partner, and the society can benefit from the appropriate handling of intellectual property. In a similar vein, great damage can be done at organisational and social levels if intellectual property is not appropriately managed. For success the **awareness for IP issues** is a must-have constituent.²⁴ Generally speaking, the awareness to IP and the purposeful development of policies were not found in the PROs studied. CPERI is an exception, as the chairman of the umbrella organisation CERTH announced possible new IP policies, based on the freedom of researchers.

Communities of practice are professional groups that share information, knowledge and certain working methods and practices. In successful PROs internal collaborative communities exist, and their social networks and working methods contribute to the emergence of core competencies. In MPI and CPERI one finds flexible collaborative communities and in CPERI they are supported with horizontal organisational structures.

The table below summarises the practices pertaining to the researcher response dimension.

²⁴ This is also true in an open innovation setting, although formal IP protection (of the technological developments and solutions, for instance) does not take place.

Table 3: RESEARCHER RESPONSE: THE QUALITATIVE FACTORS EXPLORED.

	WCL (Austria)	IMB (Montenegro)	CPERI/CERTH (Greece)	EDIEBAS (Bulgaria)	MPI (Serbia)	ÓU-NFI (Hungary)
R1. Critical mass of researchers	This is a quantitative benchmark, highly dependent on S&T fields, niches and organisational missions. Consequently, it is not presented for comparing "practices".					
R2. Charismatic leadership	●	●	●	⊙	●	●
R3. Learning from external parties	n.a.	●	⊙	●	●	●
R4. Core competencies	●	●	●	n.a.	●	⊙
R5. International researcher mobility	●	●	○	○	○	●
R6. Collaboration with external parties	●	●	●	●	●	⊙
R7. Conference presence	●	●	●	●	●	●
R8. Substantial own research methods used and renewed	●	○	●	n.a.	●	○
R9. Awareness for intellectual property protection	n.a.	○	⊙	○	○	●
R10. Communities of practice	n.a.	n.a.	●	●	●	●
R11. Marketing of knowledge	n.a.	●	●	⊙	⊙	○
R12. Research infrastructure	internationally competitive	good within the country	internationally competitive	good within the country	enables regular international collaboration	good within the country
R13. ICT infrastructure and its relevance	ICT is developed by others	ICT is developed by others	ICT is partly own customised	ICT is developed by others	ICT is partly own customised	own customised ICT is at the core
R14. Organisational knowledge management	○	○	○	○	●	●
R15. Progressive human resources management	●	●	●	○	●	⊙
R16. Quality administration of activities	●	○	●	○	○	●

Legend:

- practice/factor is clearly present
- practice/factor is weakly present and there is no particular tendency to make it stronger
- ⊙ the evolution of practice/factor is determined by external (often negotiable) or global forces
- ⊙ awareness for the practice/factor is helping its evolution currently
- practice/factor is non-existent
- n.a. practice/factor not available from the case study

Source: compilation based on processing the EVAL-INNO individual benchmarking reports

In a broad sense, marketing is a human-driven activity in an exchange process, whereby needs are satisfied. In public research organisations, research needs are satisfied with the help of new knowledge delivered and marketing can greatly contribute to success. However, the **marketing of knowledge** is specific: market segmentation, target groups and positioning have different meanings in different research contexts. Awareness for the marketing agenda is strong in IMB and CPERI, although formal marketing practices were not observed in either of the cases.

Research infrastructure is increasingly key to success as the equipment needed for research gets obsolete in a shorter period of time than a few decades ago, and the critical size of infrastructure is increasing in many disciplines. WCL and CPERI have internationally competitive technology and are able to conduct top research in cutting-edge research topics. MPI has top research infrastructure, the infrastructure enables regular international research co-operation but it is not competitive if compared with the 'best in the research field'. EDIEBAS, ÓU-NFI and IMB have good quality research infrastructure, probably one of the most up-to-date in the country, but it is not good enough to join in international research on a regular basis.

Knowledge management (KM) refers to human resources, processes and technologies allocated for mapping, disseminating and effectively using knowledge. Organisational knowledge is embodied in presentations, studies, reports, brochures, intellectual property, databases, software, archives, policy briefs and manuals, individual capabilities, memories of groups, institutions and individuals, training materials, products, research results and others. The IT-backed solution is called a Knowledge Management System (KMS), which supports the creation, organisation and dissemination of knowledge to employees and managers throughout the research organisation. KMS can support collaborative work as well as access to (structured) information, but formalised controls of processes are also possible. Out of the PROs studied, only MPI has professional KMS, integrated with its quality assurance system.

The elements of **human resource management** such as training and staff development, career development plans and formal employment policies, the age and gender balance, flexible working groups etc. can be important factors of success in PROs. CPERI and MPI have some formalised processes pertaining to admissions, trainings and advancements.

Managers, as well as researchers, sleep well and also perform better if the **administration** of the various activities run in a public research organisation is punctual and up-to-date. The umbrella organisation in a university can facilitate

procedures, which are fully in compliance with the introduced Quality Assurance standards (ISO). As a result, the administration tends to be supportive and reliable. In CPERI there is a separate horizontal unit helping the laboratories in performing the administration functions.

3.4. The impacts observed

Important and influential innovations are key measures of success in application-oriented PROs. Important innovation might be defined as a new product or service that had or contributed to an additional turnover of more than €100,000 or if more than 500 people use a new product/technology, or if it substantially improved the productivity/quality of a public service, or if it saved lives or improved the quality of life substantially. The PRO may contribute not only to new products / services, but also technologies and processes. The PRO's contribution is substantial if at least one third of the new knowledge came from the PRO. In terms of product, service and technological innovations, CPERI, MPI and ÓU-NFI could have such achievements in the 2010-2012 period. The orientation is more for public sector innovations and quality of life improvements in the case of WCL and IMB, whereas EDIEBAS is cultivating fundamental research.

Among others, the existence of **research-based spin-offs** can also indicate the PRO's competitive knowledge spillover. Using the given definition – that if in the past three years an employee of the research organisation (or the organisation itself) has established a technology/knowledge intensive company that has survived competition and employed more than two people in the last year – substantial spin-off activity could be observed in CPERI only.

Table 4: THE IMPACTS.

	WCL (Austria)	IMB (Montenegro)	CPERI/CERTH (Greece)	EDIEBAS (Bulgaria)	MPI (Serbia)	ÓU-NFI (Hungary)
I1. Contribution to important new products / services	○	○	●	○	●	●
I2. Contribution to new technologies and processes	○	○	●	○	●	●
I3. Spin-off firms	○	○	●	●	○	○
I4. Patents and licence fees	○	○	●	●	●	○
I5. Contribution to standardisation	n.a.	●	●	●	●	○
I6. Contribution to legislation and regulation	n.a.	●	○	●	●	○
I7. Contribution to the improvement of the quality of life	●	●	●	●	●	●
I8. Consultancy and metrology services	●	●	●	●	●	○
I9. Contribution to pollution prevention / reduction	●	●	●	○	●	○
I10. Contribution to waste management and recycling	●	n.a.	n.a.	●	●	○
I11. Contribution to environmental monitoring, regulation and inst. change	●	●	n.a.	●	●	○
I12. Publications impact	●	●	●	●	●	●
I13. Outreach	●	●	●	●	●	●
I14. Higher education impact	●	●	●	●	●	●

Legend:

- Impact is clearly present
- Impact is weakly present and there is no particular tendency to make it stronger
- Impact is non-existent
- n.a. Impact not available from the case study

Source: compilation based on processing the EVAL-INNO individual benchmarking reports

Despite its drawbacks, **patenting** remains an important measure of scientific and technological achievements. The fact that a PRO receives revenue from license fees and royalties originating from patents or utility designs is a benchmark of innovative performance. Nevertheless, great care should be taken when using comparisons, because different scientific-technological areas have different patenting propensities and the rise of open innovation strategies also make the picture more complex. Some license fees could be observed in the case of EDIEBAS, while relatively intensive patenting was seen in the case of CPERI.

Scientific, technological or organisational **standardisation** is a development that can greatly help social wellbeing via economic progress. If a PRO can contribute to standardisation, it is a benchmark indicating not only prestigious research and innovation activities, but it may also refer to specific present and future competencies. The most intensive contribution to standardisation could be seen in the IMB case, and EDIEBAS researchers frequently participate in national standardisation committees.

Policymakers may request PROs to provide expertise and **input into legislative language and regulatory texts**, which then can be adopted by the national legislation. If this practice is commonplace, it is an indication that the PRO is influential. Indirectly it follows that the influence has roots in knowledge-intensive organisational activities, notably research and development. Fulfilling its mission, IMB actively cooperates with the government of Montenegro. The institute is represented in the groups in charge of developing many respective national laws and strategic documents.

Beside new products, new technologies and industry processes, there are other ways through which a PRO can serve the wellbeing of the society and **improve the quality of life**. The results of medical or environmental research and development are such examples, but there can be a wide range of public sector innovations, which usually do not have direct profit orientation yet improve overall socio-economic efficiency and social wellbeing. Several such achievements have been attained by the PROs studied. For instance, IMB provides solutions on how to protect endangered species, CPERI and IMP technologies contributed to energy-efficient solutions in the public sector, ÓU-NFI research results in telemedicine and healthcare areas contribute to the improvement of the quality of life.

Consulting projects performed abroad at the request of third parties (international or national organisations) indicates whether the knowledge of the PRO is valuable for certain decision making situations. **Metrology services** provided by the PRO do not only support decision making, but also contribute to the accumulation of the domestic knowledge base. Substantial consultancy and metrology services could be seen in the case of WCL, IMB, CPERI and EDIEBAS.

The technologies developed and/or the research cultivated in the RTDI organisation might have environmental impacts in multiple ways. The development of **pollution prevention and reduction** technologies is one way of contributing to environmental innovations. Environmental load can not only be reduced before, but also after, the waste has been produced. With its knowledge, a PRO can contribute to the technologies and processes of **waste management and recycling**. Last, but not least, similarly to metrology services,

the contribution to **environment-related measurements** helps decision-making and at the same time accumulates knowledge for current and future R&D. An additional feature of these contributions is that they facilitate the social and political embedding of environmental issues, which may lead to **regulatory and institutional change**. With the exception of ÓU-NFI, all the PROs studied have had research and technological development results that contribute to either of these environmental advancements and innovations.

Publication indicators are widely accepted as a measurement for research performance, although the details and reliability of such measurement are debated. Publication propensities may vary considerably by field of science and technology. Publication efforts and publication success rates are institution-specific. Nonetheless, "by aggregating the publication output and citations at institutional level, one can measure and compare the institutional output and scientific reputation attributable to those researchers as a group".²⁵ Due to the application and technology-oriented nature of research as well as the strong presence of the private sector in the funding structure, the publication intensity of MPI and CPERI is somewhat lower than that of the other PROs studied.

In the age of increased knowledge-intensive activities, raising awareness to science, technology and R&D is key in the interactions with the society. The existence and intensity of the so-called **outreach activities** can reduce the social risks of research, make science, technology and R&D more transparent, and increase the knowledge-base of the society, thereby contributing to long-term growth and development. Dissemination initiatives directed at the general public, appearances in mass media (television, radio) and other popularisation activities are rather intensive in the case of WCL, IMB, CPERI and EDIEBAS.

An important function of PROs is the contribution to **education and teaching**. Regularly taught courses in higher education and Ph.D. supervision are not just one-off activities, but ensure that the new knowledge developed and cultivated in PROs is transmitted to potential applications as well as results in future knowledge accumulation via the young workforce. Based on the information collected, ÓU-NFI, EDIEBAS and WCL have marked impact on higher education.

3.5. Summary and conclusions of the benchmarks

Due to the very different missions, contexts and often technological-scientific fields of the PROs that could be approached in the benchmarking exercise, the differences in quantitative metrics can have only little relevance for comparison.

²⁵ See *Third European Report...* (2003) p.439.

However, at lower measurement levels and with a focus on qualitative information, a more general comparative picture can be drawn.

If the *performance benchmarks*, which were collected under the ‘impacts’ dimension of the methodological framework, are looked at it is obvious that market-oriented and public-service oriented **PROs differ in their socio-economic impacts**. The more market-oriented PROs – CPERI, ÓU-NFI, MPI – have influential contributions to new products and technologies. The more public-service oriented PROs – WCL, IMB, and EDIEBAS – contribute to standardisation efforts, metrology and quality of life improvements – mostly environmental. Nevertheless, this division is more blurred in terms of the **environmental impacts**, because CPERI and MPI also have influential contributions to pollution prevention and reduction through their technology developments. As regards the **cultural impacts** dimension, more differences can be observed. The market and public service orientation seems to result in a difference in terms of publications, too. However, ÓU-NFI is an exception, where publication productivity is also substantial. Higher education impact seems to be determined by the institutional set-up. Overall, MPI and ÓU-NFI have fewer areas of their impact (see the figure below). It is not necessarily a problem: MPI is focusing on technology development and ÓU-NFI is a young organisation.

According to the collected information, *the practices* related to the **societal needs** dimension are weaker than those in the researcher response dimension. In the latter, the practices to maintain and develop **the staff and the competencies** are more or less evenly distributed among the six cases, with the exception of EDIEBAS, where the general financial situation and the institutional determinations seem to have influence on the adoption of a number of practices (mobility, IP protection, and communities of practice). The practices related to the **main processes** clearly distinguish the PROs. WCL has all the practices in place.²⁶ CPERI and MPI have very similar profiles: they collaborate with external parties, develop their own methods, and have more or less established communities of practice. IP policies missing at the time of the observation, and researcher mobility is constrained. In terms of the **support activities**, there is obvious room for improvement. For instance, only MPI has purposefully built knowledge management system.

²⁶ Yet the information was not available for three practices.

The predefined questions, which were followed for the individual cases, helped interaction and respect between the parties involved in the interviews and during the information collection phase. While legal impetus is needed to develop a more robust learning ecosystem in the SEE countries, exercises, such as the EVAL-INNO benchmarking, is reportedly helping to bolster the evaluation culture.

There were several experiences gained during the utilisation of the methodology:

- The lack of some data that was compatible with the developed templates required some manipulation and deductive reasoning. To some extent this had been anticipated and, until data collection and presentation is unified, was unavoidable;
- Some interview questions were found somewhat inappropriate in the given context and, in some cases, were not asked or answered;
- Due to its experimental nature and the complexity of the topic, the overall logic of the methodology and the exercise could not fully evolve after the real cases were collected, which posed some challenges during the fieldwork;
- The benchmarking process is not a frequent experience for studying overall organisational performance and practices. This type of exercise contributed to a better understanding of the benchmarking techniques of research institutions;
- The concept of public sector innovations and the contributions to societal developments can be very important in the case of PROs with community missions. Such instances are hard to delineate from the general and somewhat narrow market-oriented view of innovation and compare across organisations with very different missions;
- The methodologies developed helped finding and collecting some previously unknown information. The exercise also shows the importance of proper documentation of outputs and results and the potential use of new indicators;
- The full support of the respective managements was one of the key factors for the successful completion of the benchmarking process.
- The final conference at the end of the exercise proved to be essential for learning. It was a forum where the different cases could interact with one another through the benchmarking experience and the interaction has helped to validate and solidify the findings.

The EVAL-INNO benchmarking was reported by the participants as beneficial for the **future strategic orientation** of the organisations and for international visibility. The identified weaknesses were in general welcomed by the management as the source for future improvement.

The presented emphasis on qualitative factors and the balanced view of needs, researcher responses and impacts enables going beyond regular rankings (of universities or PROs) and reinforces the role of benchmarking as a **learning tool**. Although there are always challenges and great care should be exercised in cross-country benchmarking, the tool can support the cross-country observation of practices and facilitate the learning process. The methodology enables going beyond the SEE region and the approach of peer organisations in more advanced economies (or just simply study their related practices along the benchmarking themes). Knowing better the own strengths, and showing the practice gaps, gives options to the management to explore new ideas and opens options for restructuring and (incremental) improvement of processes. This way the communication with the public funders can also be potentially positively influenced, particularly when the vision and mission of the organisation is not fully understood or inappropriately defined.

5. Suggestions for the Future

The learning impact of the benchmarking exercise can and will be greater if the process and the generic framework is refined and adopted to new cases and new PRO contexts. The robustness and power of the approach will be enhanced if the effort is made to **close the gap** as much as possible **between the comparator organisations**, especially as long as their mission, application-orientation, and science and technology base are concerned.

Involvement of the PRO staff from the start is more than useful. Presentation of the methodology to the leaders is essential to attain commitment, without which the required learning might not take place. Discussions of the benchmarking in internal stakeholder groups of the PRO can facilitate understanding at the beginning. The discussion groups can have a steering function, validate findings or discuss possible steps for adjusting internal processes. Valorisation of the findings at the end of the process is equally important and advocacy rather than assessment is necessary to explore fully the learning potential.

The requirement to **reflect on societal needs** has become more pronounced at European levels and participative approaches to structure future needs are also spreading. PROs should pay special attention to this development as the EVAL-INNO sample demonstrated less explicit practices were used in terms of approaches to take societal needs on board.

The organisational benchmarks developed in EVAL-INNO can be broken down to lower aggregation levels, which can be incorporated into deeper thematic

exercises. If some of the figures and practices suggested to study are better documented, it gives a better evidence base of the work conducted by the organisation and can help to steer the own organisation in the future. As such, the framework has some potential to be used as a **strategic management tool** for PROs.

The EVAL-INNO benchmarking framework can be used in the regions with lower levels of evaluation culture and benchmarking. The community aggregated on the EVAL-INNO platform could reference it in **designing own benchmarking activities**, and institutional authorities could use it in designing Terms of Reference (ToR) for future exercises that they commission. In the European context, the approach can prove to be useful for research capacity-building schemes for instance in the framework of twinning activities.

One should always bear in mind, especially in cross-country settings, that **'copy and paste' will not work**. However, benchmarking as an intelligence tool can be used to view oneself in light of developments in other, but technologically-scientifically related domains, and enables finding and making the qualitative factors behind good performance explicit, which is believed to be more useful than the mere recognising of gaps. In sum, benchmarking should not be considered as a one-off exercise. To be effective, it should become an integral part of ongoing improvement processes with the purpose of keeping abreast of good practices.

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Pilot RTDI programme evaluation experience in the SEE countries

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1. Objectives of the pilot action

Evaluations can greatly help structuring the uncertain and complex information regarding research, technological development and innovation (RTDI) programmes (i.e. defined sets of financial, organisational and human interventions mobilised to achieve a clearly stated RTDI objective or set of objectives within a given period). However, evaluations in the RTDI policy domain entail a number of complex management and methodological questions in a highly interdisciplinary area, which makes the development of competencies in evaluations a daunting task.

To spread the culture of evaluations, and to start the learning process of the practice of evaluations, the EVAL-INNO project first developed RTDI Evaluation Standards to help the development of the evaluation culture in South-East Europe.¹ Complementing the Standards, RTDI Programme Evaluation Guidelines were compiled, focusing on programme evaluations and they were applied to three pilot programme evaluations in Serbia, Montenegro and Hungary.

Before launching the pilot evaluations, **the learning objectives could be summarised as two groups of expectations:**

- Through practical hands-on experiences, the different stakeholders of the pilot evaluations would be in a better position to **understand the perspectives and positions of the other actors**. Although the joint experience of evaluation greatly helps socio-economic development and contributes to the wellbeing of the society, the vested interests of the other parties make evaluation difficult in practice. In particular, the programme owner, the evaluators, the beneficiaries, the rejected proposers, the taxpayers and the public often have contradictory interests in a particular evaluation situation. Understanding these dynamics and the consequences for a given RTDI evaluation can only be understood in a real-life case.
- There are various **trade-offs** during an evaluation. The existence of evaluation plans a-priori, the range of evaluation objectives, the available

¹ *RTDI Evaluation Standards* (2012) developed in the EVAL-INNO project ("Fostering Evaluation Competencies in Research, Technology and Innovation in the SEE Region"). Centre for Social Innovation, Vienna, p.47.

time, human resources and budget, the quality and availability of monitoring and other related datasets **jointly determine methodological as well as other limitations**. These have to be dealt with, while maintaining a certain quality of the evaluation. This experience is invaluable and can only be learnt evaluation piloting.

Consequently, the Standards, the Guidelines and the three pilot exercises were not only interrelated, but the empirical work actually assisted making the concepts in the Standards, and the generalised practical approach of the Guidelines, more alive and useful.

2. Cases involved

Programme owners of three different RTDI programmes were approached in three countries in 2013:

- **“The programme for co-financing of the innovation projects in 2011”** run by the Ministry of Education and Science in Serbia (hereinafter: MESTD Innovation Projects 2011 Programme);
- **“Voucher scheme of innovative SMEs”** run by the Montenegrin Directorate for the Development of Small and Medium-sized Enterprises (hereinafter: DDSME Voucher Scheme);
- **“Knowledge Transfer Programme for Prototype Building”** run by the Széchenyi István University in Hungary (hereinafter: SZE-DUÓ Programme).

The **MESTD Innovation Projects 2011 Programme**² funded innovation projects that would result in a commercially developed product, including software, a process, technology or a service in 6 or 12 months, and were carried out until the end of 2012. The total budget for the programme was €1.79 million. Two types of projects were supported:

- Type 1: when the direct result of the project is a new or significantly changed product, technology, process or service (complying with market needs and demands);
- Type 2: when the project results in the construction of an innovation infrastructure designed for the implementation of innovation projects.

2 The programme information and the findings are based on the report titled *“Evaluation of the innovation projects in 2011 managed by the Ministry of Education, Science and Technological Development”*. The evaluation report was finalised in 2014 in the framework of the EVAL-INNO project.

The innovation projects must have been realised by one or more organizations defined in the law on innovation as being at least one legal entity registered as an “entity of innovative work” in the Register of Innovation Activity of the Ministry of Education and Science (MES). Financing was provided in all fields of science and technology and in all sectors. The objectives of the program were:

- To stimulate commercialisation of R&D;
- To create new or significantly changed products, technologies, processes or services, complying with market needs and demands;
- To construct innovation infrastructures;
- To financially support and encourage cooperation between innovation organisations, particularly from the economically underdeveloped regions of Serbia.

Funding covered up to 50%, or a maximum of 2 million dinars (€17,900), of the total approved project budget for innovation organisations, or up to 50% or a maximum, of 400,000 dinars (€3600), of the total approved project budget for individual innovators. At least 50% of the total approved project budget had to be secured by the applicant from other sources, independently of the MES.

The programme implementation started in 2012. A public call for funding (“Programme for Co-Financing of the Innovation Projects in 2011”) was open between December 2011 and January 2012.

The **DDSME Voucher Scheme**³ focused on increasing business sector competitiveness by developing an enterprise culture that invests in innovation. The programme was aimed at micro, small and medium-sized enterprises (100% privately-owned) that dealt with production of goods or provided services (except for trade). Foreign-owned companies could not take part in the Voucher Scheme. The assistance from DDSME covered 70% of the justified expenses (without VAT), and the remaining 30% was covered by the enterprise from its own sources. After submitting the documentation that proved the expenditure of the contracted activity, financial assistance was approved, as part of the Voucher Scheme. The grant per enterprise was up to €1,500. The table below summarises the supported activities.

3 The programme information and the findings are based on the report titled “*Evaluation report of the programme Voucher Scheme for Innovative SMEs*”. The evaluation report was finalised in 2014 in the framework of the EVAL-INNO project.

Table 1: THE ACTIVITIES SUPPORTED BY THE DDSME VOUCHER SCHEME.

Activity group	Activities
Product / service innovation	development of new products/services improvement of existing products/services
Process innovation	introduction of a new production/service process improvement of the existing process/service
Innovative activities in the enterprise	innovative organisation methods change of management structure and/or management methods of a business subject improvement of operations by introducing ICT software technologies
Marketing innovations	new design of products/services and packaging innovative distribution methods innovative promotional tools innovative pricing and placing products/services

Source: DDSME

The programme started in November 2010 at the General Assembly of OECD, by approving the technical support for Montenegro – DDSME, to create the programme. The programme development started in January 2011. In June 2012, DDSME published the public call for applications to the voucher scheme. The total amount for this pilot programme was €20,000 for 2012.

The **SZE-DUÓ Programme**⁴ funded prototype building in a specific way. Eligible proposers needed to form a team that included a minimum of 2 members (at least 1 student and 1 professor) and prize was given for any novel idea that would result a tangible prototype, invention, simulation, know-how, sketch, or design from the disciplinary areas of the Széchenyi University. The total set of objectives of the programme was the following:

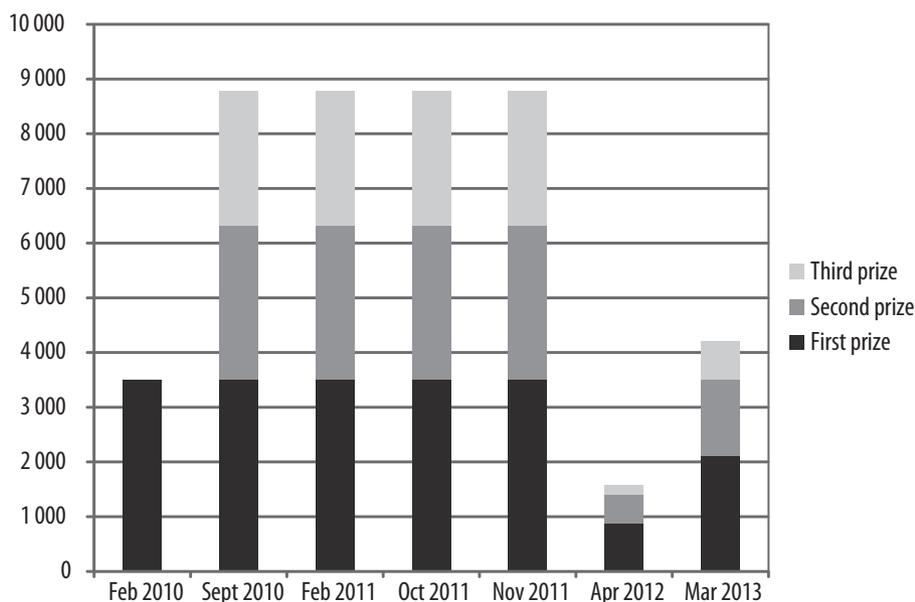
- To stimulate inventor activity and innovation activity;
- To spread the idea of teamwork;
- To stimulate project thinking.
- To get students engaged in development activities;
- To transfer of the knowledge of professors to joint teamwork;
- To build a prototype.

Small amounts of money were given to the student member(s) of the beneficiary teams, which could be flexibly used as long as the prototype was delivered.

4 The programme information and the findings are based on the report titled "*Széchenyi István University Knowledge Transfer Programme for Prototype Building: pilot evaluation in the EVAL-INNO project*". The evaluation report was finalised in 2014.

Administration was kept to a minimum, as only one contract was concluded with the student.

Figure 1: THE VALUE OF PRIZES IN THE SZE-DUÓ PROGRAMME FOR PROTOTYPE BUILDING (IN €).



Note: computation at 285 HUF/EUR exchange rate Source: computations based on data from the Center of Knowledge and International Relations at the Széchenyi István University

SZE-DUÓ was a 5-year long programme (2009-2014), funded by a larger Structural Fund project of the university.

3. Mode of work applied

The three pilot programme evaluations were organised in five stages.

In the **first stage**, the elaborated RTDI Programme Evaluation Guidelines⁵ were used to select the **main evaluation questions**. In agreement with the programme owners, the following areas were selected for evaluation in all 3 cases, for which the basic evaluation questions were defined:

⁵ *RTDI Programme Evaluation Guidelines* (2014) developed in the EVAL-INNO project ("Fostering Evaluation Competencies in Research, Technology and Innovation in the SEE Region"). Iparfejlesztési Közhasznú Nonprofit Kft, Budapest, p.105.

- *Relevance and (policy) consistency*: Was the programme the right thing to do? How well does the RTDI programme fit in the wider (policy) environment?
- *Programme processes*: Should and how should the programme processes be redesigned?
- *Programme impacts*: What has happened as a result of the RTDI programme? How good are the outputs?

In the **second stage**, with the involvement of the respective project partners, **detailed individual programme-specific guidance was compiled**, taking into account the data-poor environments.⁶ The main parts of the guidance included:

- *Description of the programme*: The results of a web-based search, and incorporation of the information received from the programme authorities were used to briefly describe the programme to be evaluated;
- *Evaluation context and focus*: General information about the environment of the programme was provided;
- *Basic evaluation questions and preliminary evaluation hypotheses*: The respective project partners approached the programme owners and they jointly finalised and contextualised the basic evaluation questions. Evaluation hypotheses were formulated, which could be changed, reformulated, or developed further (based on the empirical work, the hypotheses were to be accepted or rejected).
- *Overview of data availability*: In project discussions, it was clarified that the relevant monitoring datasets were largely missing and other complementary and relevant data sources would be inaccessible. Nevertheless, reference was made to what could be compiled and used for the evaluation.
- *Methodology*: Besides a proposition for document review and analysis of secondary statistics, details of questionnaire surveys, interviews and focus groups were defined (including questions and interview/focus group schedules). It was also described how a control group approach would be followed.
- *Proposed contents of the evaluation report*: a detailed table of contents was provided, describing chapters and sub-chapters.

In the **third stage**, to help cross-country learning and making use of distributed resources, **pairs of countries were formed for each programme evaluation case**:

6 In the case of the DDSME Voucher Scheme and the MESTD Innovation Projects 2011 Programme. For the Hungarian case, this detailed guidance was not compiled in one document, as the Hungarian project partner and its external evaluation expert were leading this activity.

- Austrian colleagues (Centre for Social Innovation) assisted Serbian colleagues (Mihailo Pupin Institute) in evaluating the MESTD Innovation Projects 2011 Programme.
- Greek colleagues (National and Kapodistrian University of Athens, Special Account for Research Grants) assisted the Montenegrin colleagues (University of Montenegro) in evaluating the DDSME Voucher Scheme.
- Bulgarian colleagues (ARC-Fund) assisted the Hungarian colleagues (IFKA) in evaluating the SZE-DUÓ Programme.

The pairs studied the programme evaluation guidance and adopted them to their own contexts, before defining the division of labour between them.

In the **fourth stage**, the iteratively finalised set of **evaluation methodologies was implemented**, including the empirical information collection, as follows:

- *MESTD Innovation Projects 2011 Programme* (Serbia): Questionnaires were sent to 97 beneficiaries and 67 rejected proposers (35 and 14 responses respectively) and 3 interviews were conducted.
- *DDSME Voucher Scheme* (Montenegro): Questionnaires were sent to 16 beneficiary firms, and 38 control group firms (5 and 6 responses). Telephone interviews were conducted with all non-respondents. Face-to-face interviews (5) were conducted and a focus group was organised.
- *SZE-DUÓ Programme* (Hungary): Questionnaires were sent to 102 proposer students, 110 control group students, 40 participant professors, 120 non-participant professors (total response rate: 12%). Interviews were conducted (13).

In the last, **fifth stage**, based on the empirical results, the three **evaluation reports were developed**.

4. Findings from the pilot programme evaluations

During the implementation of the evaluation, it became obvious that **monitoring and other data are hard to collect** (or do not exist). However, response rates in questionnaire surveys proved to be generally low – although not outstandingly low in an international comparison – for two reasons. One is the so-called “survey fatigue”, a result of an indifferent attitude in the information age, when questionnaire surveys are frequent. The other is that response was not a contractual obligation, which can be changed in the future. Therefore, all the evaluation exercises relied on more in-depth qualitative methodologies

(interviews and focus groups), aiming at making the findings more robust. The main programme-specific evaluation findings are presented below.

Programme for Co-Financing of the Innovation Projects in 2011 (Serbia):

- The programme is a useful one that responds to the needs of the Serbian innovation system;
- The programme is working well and beneficiaries have got used to the overall framework of the programme, but there are some bottlenecks in terms of some processes (e.g. the programme is instable in terms of consistent funding);
- Direct innovation results are moderate. However, indirect and long-term impacts are useful for the economy of Serbia: generally the beneficiary companies became more competitive and more innovative, but in some cases the support did not help in terms of the greatest innovation challenges of the company;
- The return on investment can only be estimated indirectly and in a less quantified way, because the corresponding evidence-base would require more systematic data collection;
- More transparency and marketing of the programme results are needed.

Voucher Scheme for Innovative SMEs (Montenegro):

- The programme is useful and fits the policy environment;
- The programme is managed in fair and transparent way;
- The programme improves, relative to the size of the voucher, the competitiveness and innovativeness of the companies;
- Scaling up is advised: an increase in grants could help overcome innovation challenges of the companies, thus the programme could better respond to the needs of the companies;
- Better awareness-raising about the programme would improve its overall visibility throughout the country: one of the most important issues is the monitoring and follow up of the potential impacts, which could be an excellent path forward for the future activities of the Voucher Scheme.

Széchenyi István University Knowledge Transfer Programme for Prototype Building (Hungary):

- The programme contributes well to the objectives documented in the programme launch documents;

- Programme funding is adequate and the general administration is well managed;
- Proposal evaluations – namely communication of the proposal evaluation results – shall be strengthened;
- Risk-taking is at low levels in the university community, which may be in correlation with the fact that prototypes were not developed further into businesses;
- Awareness towards intellectual property protection is low both in the programme owner unit and the beneficiaries / proposers;
- Collecting the data about projects ex-post, needs to be thought about;
- The sustainability of the programme is questionable.

From the individual evaluation reports, some general conclusions could also be drawn. First of all, **programme designs usually fit well** the environment. The conceptual work behind the programming and the main points of the programme structure were welcomed by the beneficiaries and other stakeholders (including e.g. the rejected proposers). **Problem areas are associated with execution**, for which partly contextual factors are responsible (such as unpredictable or inadequate financing), and partly the underperformance of some management functions (linked also to the contextual factors, such as the inability to run a proper monitoring system). Monitoring and data concerns proved to be prevalent in all three cases. Improved monitoring, and the accessibility and interim analysis of appropriate data, is a separate function that stands on its own, and is a basic precondition for more sophisticated evaluations and the development of the evaluation culture. The impacts of the programmes, despite the limitations of the available methodologies, were shown as well as some **existing advantageous developments** as a result of the programme. The evaluation findings could directly feed into recommendations for the future of the programmes concerned.

5. Function and structure of the programme evaluation guidelines developed

The general *RTDI Programme Evaluation Guidelines* elaborated in the course of EVAL-INNO could assist in setting the pilot programme evaluations in motion. It is a development that has the potential to increase the likelihood that sound and good quality evaluations are commissioned in the South-East European countries. The Guidelines primarily target evaluation practitioners, namely:

- Organisations thinking about commissioning an evaluation;
- Analysts in the commissioning organisations, who support the decision-making process pertaining to evaluations; and
- Current and future evaluators, who need to conduct their work in a policy- and politics-influenced environment, which impose certain limitations compared to pure research assignments.

In the first chapter, **the concepts used** throughout the Guidelines are presented. These help decision makers to position the intended RTDI programme evaluation and determine which steps, decision making points, challenges and methodologies will be relevant for the given case – and gives hints on how to tackle them. Among others, the basic RTDI programme and evaluation types, for which the evaluation guidelines were developed, are introduced. It defines the evaluation issues which are typically addressed. These are the very starting determinants of any RTDI programme evaluation. In the case of the pilot evaluations implemented, the concepts helped to achieve a common understanding of the language of evaluations as well as the general approach.

The second chapter presents the **ways to enforce the six most important principles** of RTDI programme evaluations. These comprise ethical issues, independence and impartiality, quality assurance, multi-methodology evaluation design, interdisciplinarity, and appropriate commitment. If the principles are enforced, the individual relevance and high value of the evaluation will be hard to question. For the pilot evaluations all these principles had to be requested and the parties, who participated in the exercise, could attribute the practical steps of implementation to the principles.

There are a number of relatively **quick decisions that define evaluation** objectives and shape the evaluation methodologies to be used. Additionally, a past decision – namely the existence of evaluation plans – also has a great impact on viable objectives and methodologies. These and the consequences for the evaluation are discussed in the third chapter. During the pilot evaluations, the evaluation focus, the timeframe and the resources available determined in collaboration between the partners, shaped the specific objectives and the methodologies.

The fourth chapter provides a **start-kit for the basic methodological design** that assists in identifying the appropriate evaluation methodologies (from the evaluators) and posing the right evaluation questions, which the evaluators can use in the evaluation process accordingly. This chapter also builds on preceding chapters and discusses the use of reconstructed theories, the suggested

methodological techniques and guidance to the three basic evaluation types (concept/design evaluations, process evaluations and impact evaluations). While there are many more methodologies applicable in an RTDI evaluation context than what is actually developed and proposed in the Guidelines, those are much less relevant in countries with relatively underdeveloped evaluation cultures – such as the South-East European countries. In the pilot evaluations, a wide range of primary research methods were used, including interviews, focus groups and questionnaire surveys.

Finally, the last chapter provides guidance on how to **manage RTDI programme evaluations as a process**. It connects directly to the preceding chapters and the guidelines provided there. It presents how to focus the evaluation, how to conduct a preliminary study that enhances the robustness of the whole evaluation, how to prepare the Terms of Reference (ToR), what structures are needed for appropriate governance of the evaluation project, how to assist the data collection, what has to be done when the evaluation is ready to provide conclusions, and how to handle feedback loops. With the exception of ToR preparation (which was not needed in this pilot action), all the other steps were managed throughout the three programme evaluation processes.

At the end of the Guidelines, there is a **one page checklist** with questions, the answers to which help facilitate a robust evaluation process. The checklist, with references to the specific parts in the Guidelines, provides assistance for:

- The preparatory phase;
- The steps before the evaluation contract;
- The steps after the launch of the evaluation exercise;
- The implementation phase of the evaluation;
- The steps before the finalisation of the evaluation report; and
- After the conclusion of the evaluation contract.

As the above structure suggests that, with the help of the Guidelines, the organisations responsible for commissioning RTDI programme evaluations can make the most important decisions and take the necessary steps for managing viable, relevant and good quality RTDI programme evaluations. At this point it also needs to be underlined that RTDI programme evaluation is always context specific, a fact which the Guidelines greatly respect. As a consequence, substantial flexibility has to be exercised when adopting the Guidelines and the users are encouraged to build bravely on the text presented and design and manage the evaluation with the necessary amendments and adding the necessary local flavour. As practical evaluation knowledge about the working of programmes is accumulated, the

probability of repeating the useful and reasonable RTDI programmes increases, whereas the less effective ones can be improved at a faster pace.

The Guidelines can be downloaded at www.eval-inno.eu.

6. Experiences and potential use in the SEE countries

Overall, the pilot programme evaluations implemented could contribute to an increased awareness for the perspectives and positions of the other actors in a common evaluation exercise. The experience gained from the evaluation exercise demonstrates that **the collaboration of stakeholders is the key factor** for a successful evaluation. Detailed early-stage preparation and well-designed program evaluation methodology are not a guarantee for successfully developing the evaluative findings, if accompanied with the absence of some of the involved parties and unwillingness for improvement. Participation and inputs of all involved parties in the process give the possibility to understand the real value of the whole initiative.

The general and the specific methodological guidance, provided by the consortium before the beginning of the programme evaluation, were reported to be comprehensive and useful during the whole exercise. The initial stage, that involved collecting data, was facilitated through the existence of the **specific methodology guidance**, so that the choice of the most appropriate methods were used that took into account the national context. The general guidelines, and the specific methodological guidance provided by the EVAL-INNO project, could be used as a starting point and knowledge base for programme evaluations throughout the SEE region.

The cooperation between the evaluator and the programme owner, (but also stakeholders) in order to manage the empirical part of the evaluation requires trust, and **building this trust is time consuming**. In the case of the Serbian, Montenegrin and Hungarian pilot exercise, on average it took at least a year to have everything in place. Mainstreaming this experience is worth attention: even under time pressure to deliver results, adequate time should be allocated for a quality evaluation.

In the Serbian case, the involvement of the relevant ministry was a crucial, including the careful negotiation about the roles and involved parties of the evaluation. It came to the surface quite clearly why ex-post and impact evaluations should be foreseen within the process of the establishment of the specific programme, and integrated into the contracts with the beneficiaries as an obligatory activity for all parties concerned.

In the Montenegrin case, the stakeholders and the actual and potential beneficiaries of the programme were previously involved in a similar exercise performed by the OECD. Since both surveys had the same target groups, a lower willingness to participate and cooperate could be expected due to the duplication of data-collection requests. In the end, a good match between the two evaluations in terms of methodological approach, as well as results, could be achieved.

In the Hungarian case, the programme owner was very receptive to the evaluation from the beginning, and it not only made the process easier, but contributed to the execution of more detailed interviews. The programme was unique in Hungary, therefore, in-depth qualitative information was rather useful for the conclusion of the evaluation exercise.

Last, but not least, the positive experiences of **cross-country cooperation** can be mentioned. Paired evaluations, an exchange of evaluators, and the ability to discuss the experience and results of the evaluation process in an open way, and with reference to international practice, proved to be a factor that greatly assisted in the facilitation of the pilot exercise.

Promoting international exchange and sustainability

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Introduction

The need to think about sustainability in general, and the sustainability of projects financed by the public sector in particular, is becoming more and more important for policy-makers. When looking at the evaluation culture in South East Europe, there is evidence that the further promotion and use of evaluations, as one of the most essential tools for evidence-based decision-making, should be considered as a high priority in the future. For that reason, several activities in the EVAL-INNO project were dedicated to the sustainability and promotion of evaluation in South East Europe as a proper tool for ensuring transparency and accountability. In particular, RTDI evaluation was promoted as a crucial instrument for the creation of effective RTDI policy, and as a promoter of competitiveness, growth and welfare in all European countries¹.

When EVAL-INNO was conceived, it was based inter alia on the finding that evaluation experts in the South-East Europe region are rarely institutionalised into professional evaluation associations or other relevant networking bodies. RTDI evaluation experience was obtained (and is still obtained) predominantly by individual experts during their implementation of evaluations. Moreover, the core group of beneficiaries of RTDI-related evaluations, which are usually considered to be those public authorities who are in charge of planning evaluations and commissioning them internally or externally, are relatively few in number in the region, often lack formal evaluation education, and commonly are only loosely connected to their peers in other units, policy fields, and countries².

The relative isolation of evaluation beneficiaries from each other remains an issue. To address this, the regional platform for research and technology policy evaluation, developed within EVAL-INNO, provides a zone for interaction at the regional level by bringing experts from different national and regional administrations into contact with each other. The EVAL-INNO regional platform

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- 1 See the following chapter in this publication: Lena Tsipouri, Nikos Sidiropoulos *"RTDI Evaluation culture in the EVAL-INNO countries"*
 - 2 See also the following article: Schuch, Klaus and Gajdusek, Martin Felix: "RTDI Evaluation in South East Europe – Reflections based on the experiences of EVAL-INNO". In: Marinkovic, Ines, Dall, Elke (2014): "R&D and Innovation in Western Balkans. Moving towards 2020." p. 320-339.

includes a dedicated website which hosts relevant RTDI evaluation data bases³, a number of relevant guidelines and evaluation standards in several languages, RTDI evaluation training materials etc. Additionally, a large community of (potential) evaluators and representatives of (potential) awarding authorities from the South East Europe and from partner countries has been identified and is easily accessible via an established mailing list.

On the other side, it is important to consider that a problem faced by almost any regional initiative is its institutionalisation and sustainability. Whereas “champions”, owners, and thus ownership can more easily be identified at the national level, it is difficult to identify regional “owners” and to create regional “ownership” when no regional champion currently exists nor is mandated through a diplomatic inter-governmental process. Initiating such a political process was not and could not have been implemented within the scope of the EVAL-INNO project itself.

Nevertheless, several activities have been implemented within EVAL-INNO to address the issue of sustainability:

- Establishment of a Sustainability Business Plan;
- Conducting missions to promote ownership;
- Organisation of an international conference and formulation of a communiqué;
- Publication of results (including this publication).

Towards sustainability of EVAL-INNO results

The term ‘sustainability’ is often used interchangeably with the term ‘sustainable development’. One way to look at the meaning of sustainability versus sustainable development is to define the latter as a process of change towards achieving sustainability goals, whereas sustainability, or the ‘*ability to sustain*’ (Marcuse 1998), refers to an (often ideal) end-state that can be sustained over time⁴. For the sake of clarity, in the case of the sustainability of project results, we use the following definition from the European Commission: “A project is sustainable when it continues to deliver benefits to the project beneficiaries and/or

3 Data bases are established in following categories: Strategic documents, RTDI programmes, RTDI infrastructure, Stakeholders and Actors and Evaluators. See also the following chapter in this publication: “RTDI Evaluation Practices according to the EVAL-INNO Evaluation Platform: Recent Developments in Evaluating the Cohesion Funds and the Way Forward”

4 See: Weingaertner, C. and Moberg, Å. (2014), Exploring Social Sustainability: Learning from Perspectives on Urban Development and Companies and Products. *Sust. Dev.*, 22: 122–133.

other constituencies for an extended period after the (...) financial assistance has been terminated.”⁵

In order to support the continuation of activities beyond the lifetime of the EVAL-INNO project (sustainability); the creation of ownership models (take-over), and the identification of the potential for further usage of results - a business model for the sustainable institutionalisation of the Regional RTDI Evaluation Platform was developed in 2012. The major milestones towards the development of the business model are presented in Table 1, while Table 2 provides more details regarding the promotion of the Regional RTDI Evaluation Platform with the intent of stimulating regional ownership by organisations and individuals.

Table 1: DEVELOPMENT OF SUSTAINABILITY BUSINESS PLAN – MAJOR ASPECTS AND STEPS.

Product description	Presentation of the EVAL-INNO project and possible impacts during the project lifetime. This aims to provide a comprehensive overview of its added value and an outlook on possible complimentary future activities.
Customer description	Identification of concrete target groups by analysing target group needs.
Partnership synergies	Identification of opportunities for strategic partnerships.
Financial description	Proposal of the strategy for a participative approach and strong ownership (e.g. on a fee basis paid by the target groups)
Risk assessment and contingency plan	Identification of critical success factors, including risk management and contingency plans (in case some activities, or financing are not feasible).

Initial discussions during a dedicated sustainability workshop in 2012 in Podgorica, Montenegro revealed that the most challenging part of the sustainability business plan concerned the financial strategy and the identification of regional ownership. As regarding the financial part, the Strategy suggests a membership model under which the presumptive members (i.e. ministries and agencies in charge for RTDI policy making or policy delivery) would pay an annual membership fee of a few thousand Euros to access and use the services provided by the platform. The identification of the regional owners, and the creation of regional ownership when no regional champion exists, or is mandated through a diplomatic inter-governmental process, as already mentioned in the introductory part, is difficult.

⁵ EC (2006): Sustainability of international cooperation projects in the field of higher education and vocational training. Handbook on Sustainability. <http://eacea.ec.europa.eu/tempus/doc/sustainhandbook.pdf>

Nevertheless, the sustainability strategy of EVAL-INNO foresaw the involvement of relevant stakeholders from South East Europe through different activities during the project life time (see below the indirect activities). Furthermore, several targeted stakeholder consultations were organised on development of a future framework for cooperation in RTDI evaluation domain including the promotion of the Regional Evaluation Platform. Generally speaking, we can differentiate between direct and indirect sustainability-related activities implemented within EVAL-INNO:

Direct activities:

- Organisation of internal sustainability workshop in 2012, in Podgorica, Montenegro;
- Organisation of a side event “Supporting RTDI evaluation culture: The way forward in SEE and CE” back to back with the FTEVAL conference “Evaluation of STI policies, instruments and organisations: new horizons and new challenges” in November 2013, in Vienna;
- Organisation of the EVAL-INNO final conference “Developing RTDI evaluation culture in South East Europe” on March 25/26 2014, in Vienna;
- Participation in SEE Thematic Capitalisation Strategy as a thematic pole lead on “Innovation Governance & Policy”;
- Formulation of Communiqué which includes a statement and relevant steps to be realised by the authorities responsible for research, technology and innovation policy in the countries of the South East Europe;
- Conducting country visits to non-partner countries, including: Croatia, Slovenia, FYR of Macedonia, Kosovo*⁶, Bosnia and Herzegovina, and Romania in 2013/2014. This was done in order to propose and discuss concrete future steps towards developing a sustainable regional RTDI evaluation platform with relevant stakeholders;
- Publication and wide dissemination of EVAL-INNO results in a Final Book.

Indirect activities:

- Preparing and disseminating EVAL-INNO newsletters (e-newsletters and printed newsletters) throughout the project’s life time;
- Disseminating EVAL-INNO RTDI Evaluation Standards (available in 6 languages) and Programme Evaluation Guidelines;

6 Kosovo*: This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence.

- Presenting and discussing the issue of evaluation platforms (and Austrian evaluation platform - fteval as an example) during the RTDI evaluation training workshops in Bulgaria, Hungary, Montenegro and Serbia;
- Raising awareness about the EVAL-INNO platform during the RTDI evaluation training workshops by involving participants from 16 different countries: Bulgaria, Romania, Moldova and Greece (at the training in Bulgaria), Ukraine, Slovakia, Austria and Hungary (at the training in Hungary), Montenegro, Albania, Kosovo, Bosnia and Herzegovina (at the training in Montenegro) Serbia, Croatia, the Former Yugoslav Republic of Macedonia and Slovenia (at the training in Serbia);
- Raising awareness of the usefulness of RTDI evaluation in SEE by involving relevant stakeholders during the implementation of pilot activities on programme evaluations (in Serbia, Hungary and Montenegro), and through the benchmarking exercise which was undertaken in all partner countries. A conference related to these activities was organised in Budapest in January, 2014;
- Raising awareness amongst stakeholders about the EVAL-INNO platform, and RDTI evaluation in general, via different external dissemination channels such as through partner organisations' newsletters, WBC-INCO.NET newsletters, through the Steering Platform on Research in WBC etc.;
- Engaging external evaluators in order to assess the project's internal and external communication. The aim of the evaluation was to support the project team with the optimisation of internal and external communication during project duration with a view to ensure a sustainable take-up of project results by the envisaged target groups.

It is relevant to mention that, based on the perception of the role of evaluation in general in SEE, which is perceived often "*as criticism and punishment rather than a way to improve policies*"⁷, the EVAL-INNO partners promoted not only the sustainability of the platform, and other project results dedicated to RTDI evaluation, but also evaluation in general as one of the most essential tools for evidence-based decision-making.

Table 2 summarises the outputs of EVAL-INNO, in the form of the business model template above, and briefly presents possible future activities, as well as identified target groups and possible partnership synergies. Furthermore, this overview also provides a proposal for financial sustainability of the regional platform and assesses the major risks related to its ownership and financial sustainability.

7 See this chapter: Lena Tshipouri, Nikos Sidiropoulos "RTDI Evaluation culture in the EVAL-INNO countries"

Table 2: PROMOTING OWNERSHIP OF THE REGIONAL RTDI EVALUATION PLATFORM.

<p>Product description</p>	<p>Virtual RTDI Evaluation Platform Website: http://www.eval-inno.eu/ RTDI Evaluation Database (a) Strategic documents, (b) RDTI programmes, (c) RTDI infrastructures, (d) Stakeholders and Actors, (e) Evaluators. Evaluation Guidelines and Standards RTDI Evaluation Training materials WIKI Relevant Links</p> <p>Identified future activities⁸:</p> <p>Structural support actions of common importance: Maintaining the Evaluation Platform as a communication tool; Publication/Update of Evaluation Standards in other languages; Twinning activities with experienced countries; Tendering Advisory Group for RTDI evaluation; Certificate for trained evaluators.</p> <p>Regionally focused actions Policy mix peer reviews; Regional benchmarking exercises; Evaluating international funding interventions. Capacity building and networking actions Training weeks; Summer-schools; Annual meetings. Specific events Focused events with national or regional focus (tentative list available);</p> <p>A strong regional partnership can create synergies with existing programmes in order to attract future external funding for further capacity building activities and further develop the above actions.</p>
<p>Customer description</p>	<p>Policy makers in the RTDI field (ministries, research councils, regional governments); Policy delivery system (agencies, organisations with agency function i.e. at universities); Evaluators and potential evaluators involved in future evaluations, mainly addressing regional capacities; International evaluation providers active in the region.</p>

8 See a detailed description of proposed activities in the dedicated book chapter Martin Felix Gajdusek: "Outline of proposed action for future interventions".

<p>!Possible partnership synergies</p>	<p>Steering Platform on Research for the Western Balkan Countries; Coordination actions in the Danube Region; Priority area PA 7 and PA 8; The future Danube Region Research and Innovation Fund-DRRIF; OECD (in particular Investment Compact); Regional Cooperation Council (RCC); World Bank (WB) in particular regards the establishment of the Western Balkans Innovation Strategy Exercise Facility (WISE); Central European initiative – CEI; EC Directorates: DG REGIO, DG Research and Innovation, DG Enlargement, DG External Relations; Coordination units of the Instrument for Pre-accession (IPA) particularly with regard to the multi-beneficiary instrument.</p>
<p>Financial description</p>	<p>Members jointly establish an annual work-plan based on their preferences and mainly based on other funding resources. The host supports the network by maintaining the e-platform and newsletter as central information tools; Emphasis of the host is put on developing structural support actions and in supporting smaller workshops on relevant topics to support community building in the countries (events preferably open also to other countries); Members contribute 1500€ annually; The host proactively addresses external funding opportunities.</p>
<p>Risk assessment and contingency plan</p>	<p>Mobilisation of financial resources; Identification of potential regional owners and readiness to uptake the initiative; Missing (financial) commitment challenges planning efforts; No clear mandate for action in the domain; Limited relevance of evaluation on national level as other policy fields have priority; Sub-critical size of RTDI programmes; Fear of consequences or political usage of evaluations (i.e. in regional benchmarking exercises a danger for involved organisations or for programme evaluations that can substantially influence the future work of an agency).</p>

Organisation of EVAL-INNO final conference “Developing RTDI evaluation culture in South East Europe”

On March 25th and 26th, 2014, the EVAL-INNO partnership successfully organised an international conference, where the results achieved were presented and the potential for their future use was discussed. The event was held in Vienna at the premises of the Austrian Federal Ministry of Science, Research and Economy. The event gathered a number of RTDI evaluation stakeholders from the SEE,

including public authorities from ministries in charge of RTDI measures (being potential awarding authorities of evaluations), existing evaluation societies, evaluators, and scholars skilled in the field. The participants were informed about the current state of the art in RTDI evaluation in SEE and the activities of EVAL-INNO. During the event, a framework for future cooperation in the domain in SEE was proposed and discussed.

One of the main objectives of the conference was to look at what could be achieved in the future, as well as what is needed in order to achieve it. In this sense, a joint session was organised, which was set up as a structured information exchange in a face-to-face setting. More than 25 exchange sessions were developed and the sessions were viewed favourably by participants. It was perceived as a rare chance to address the challenges which are experienced in the RTDI evaluation domain. An additional session was led by a panel that came from a diversity of backgrounds across SEE countries, including a wide range of representatives from ministries, national agencies, and prospective tendering authorities, evaluation societies and other important RTDI stakeholders. The key message expressed was that EVAL-INNO was a highly appreciated first step towards the development of joint RTDI evaluation culture in the SEE region.

Final communiqué

The conference culminated with a joint statement of future actions in the RTDI evaluation field, and was endorsed by the participants. A set of key-challenges were listed as the starting point for future joint activities by the authorities in the region and the professionals in the field. The communiqué (which is one of the chapters of this publication) includes important steps which could be realised by the authorities responsible for research, technology, and innovation policy in the countries of the South East Europe region.

EVAL-INNO as pole leader of the SEE Thematic capitalisation strategy

Another important tool which allowed for better access to relevant stakeholders was offered directly by the programme which funded EVAL-INNO, the South East Europe Transnational Cooperation Programme. Back in 2013, the programme created the Thematic Capitalisation Strategy to streamline the process of creating synergies between funded projects and capitalising on results of previous initiatives. This was done in response to demand from beneficiaries. The SEE Thematic Capitalisation Strategy aimed to strengthen the links between

projects working on similar topics (calling these Thematic Poles), to enable projects to exploit and consolidate one another's achievements, and to create a higher leverage effect. The EVAL-INNO project was thus being asked to lead the Thematic Pole 1 on "Innovation Governance & Policy". In this framework, a series of activities were organised which aimed to directly or indirectly foster the future actions of EVAL-INNO. First of all, a joint mailing list was set up among the pole members. Through this tool, the EVAL-INNO activities were further exchanged and disseminated. Other pole members have taken part into EVAL-INNO activities and events. At the end of the capitalisation period a joint newsletter was foreseen to be produced, aiming to underline the project's main results and future sustainable actions. During the Joint Thematic Event of the Thematic Pole 1, which was organised in Vienna on the 26th of March 2014, the pole members had the chance to discuss the different approaches used in their projects in order to guarantee sustainable and lasting results beyond the end of the project. The meeting was also an occasion of networking which, it is hoped, will lead to future similar initiatives. The main tools for exchange in the thematic pole were a joint mailing list, a joint newsletter and an option to join events organised by other projects involved in the pole.

Country visits – Missions to promote ownership in South East Europe

Given the relatively small size of the partnership of EVAL-INNO, consisting of partners from 6 countries (Austria, Bulgaria, Greece, Hungary, Montenegro, Serbia), a broader outreach to target groups beyond these countries was necessary. Thus, in the final phase of the EVAL-INNO project, a series of country visits were organised in Croatia, Slovenia, FYR of Macedonia, Kosovo, Bosnia and Herzegovina, and Romania. The visits aimed at bringing together relevant stakeholders in each country engaged in RTDI evaluation (with a focus on the programme evaluation level) to discuss the country's needs in RTDI evaluation processes, and possible modes of regional cooperation in the future. During the visits, the EVAL-INNO partners presented, in brief, the achievements of the project, as well as some options towards the sustainability of the regional RTDI evaluation platform. A sustainable regional RTDI evaluation platform, based on small yearly membership fees for example, would enable interaction and cross-fertilisation at the regional level by bringing experts from different national and regional administrations into contact with each other. It would also allow for the centralisation of high-quality trainings on evaluation methods and evaluation processes. The series of visits were very interactive and brought forward also specific country needs and current experiences. A fruitful discussion was

triggered about the next steps which were deemed necessary by the involved stakeholders. Even if the idea of membership fees for a regional platform is widely recognised as useful, it was assessed by the majority of the stakeholders visited as (not yet) feasible due to other priorities on the national level.

Conclusions and outlook

Following the information provided in Table 2, the results of the activities implemented, as well as the feedback by involved regional stakeholders, it became clear that serious sustainability efforts are not easy to achieve. Furthermore, interrelationships between dissemination/communication activities and the sustainability of the project results are ascertainable based on the results of the evaluation of communication activities which was conducted by external experts. In its concern with the impact and sustainability of the external communication activities, the evaluation came to the conclusion that despite the great efforts that have been made by EVAL-INNO partners, further communication efforts on Regional RTDI Evaluation Platform and other project results vis-à-vis the target groups are needed. However, it has to be stated that the results of the missions and promotion of the ownership were not part of the evaluation. In conclusion, we see that the number of coordination actions in the region is currently notable and that the development of an evaluation culture can be basically promoted on two levels. Firstly, the commitment on the national level must be improved. Secondly, the existing and ongoing macro-regional and transnational initiatives which focus on the RTDI domain in the region need to be informed about RTDI evaluation tools and practices, as well as the current challenges and potentials for synergetic action. A sustainable Regional RTDI Evaluation Platform proposed by EVAL-INNO could help to further facilitate the RTDI evaluation culture in the SEE region.

Communiqué endorsed by the participants of the final conference of the EVAL-INNO project held in Vienna on the 25th and 26th of March 2014

With the support of the South East Europe Transnational Cooperation Programme of the European Union, the EVAL-INNO project has, since 2011, promoted the role of evaluation in research, technological development and innovation (RTDI), developed capacities and competencies for comprehensive RTDI evaluations, and provided procedural and methodological know-how and tool-kits for both evaluators and the programme owners.

The participants share the opinion that innovation capacities and results in the South East Europe region are not optimised and that a number of interventions should be implemented in order to stimulate innovation activities. Under tight financial regimes, public expenditures must be optimised. Evaluations can contribute substantially to the identification of the right rationales and mechanisms for innovation funding. EVAL-INNO has addressed and supported the standardisation of organisationally fragmented RTDI evaluation capacities in the South East Europe region. Through a structured approach, the project has contributed to the improvement of the theoretical foundations and practical application of evaluations as a strategic tool to stimulate reflective innovation policy and to help prepare the region for an informed participation in, and contribution to the achievement of, the “Europe 2020” Strategy.

The following key-challenges can be considered as the starting point for future joint activities between the authorities in the region and the professionals contributing to and conducting evaluations, as they form challenging bottlenecks to the region’s innovation systems:

- Weak systematic exchange with evaluators in EU and globally;
- Low numbers of certified evaluators for programme, institutional, and policy evaluations in the field of research and innovation, as well as methodological deficits and weaknesses;
- Low levels of knowledge about professional tendering procedures (incl. public procurement laws) to obtain the best evaluation results;
- Beneficiaries of evaluations at policy-level are dispersed across sectors and governance levels, and exchange among them is limited;
- Difficulties to access RTDI evaluation information and good practices, and a general deficit of completed good-practice evaluations in the region.

To address these challenges, EVAL-INNO has focused on capacity-building and institutional support. Its main target groups and areas of focus included policy-makers, policy-delivery systems, innovation infrastructures, and (potential and current) RTDI evaluators. An easily accessible and systematically structured web-based 'Regional RTDI Evaluation Platform' was developed and was continuously updated to meet the information needs of both evaluators and awarding authorities (agencies, ministries). Specific training modules for evaluators, potential evaluators, and awarding authorities were prepared for both groups and delivered with an emphasis on methodological and procedural issues. Moreover, regional RTDI evaluation standards were published in six languages and pilot programme evaluations, as well as a comparative pilot benchmarking of R&D organisations, were carried out based around expertly developed methodological designs. Dedicated analysis in assessing the state-of-the-art of RTDI evaluation culture in the region was undertaken and its findings were taken into consideration during the set-up of the project's activities.

Despite several improvements stimulated by EVAL-INNO, and other positive developments external to the project, an unsatisfactory level of deployment of evaluation in RTDI policy-making persists. The region faces most of the structural key challenges which were relevant three years ago, when the project started.

Based on the inputs and tools provided by EVAL-INNO, we suggest the following steps be realised by the authorities responsible for research, technology, and innovation policy in the countries of the South East Europe region:

1. Adopt RTDI evaluation standards (those suggested verbatim by EVAL-INNO or an adapted variation) agreed upon by all relevant national stakeholders;
2. Start with a commitment to regularly evaluate larger RTDI programmes and public R&D organisations (incl. universities) by external evaluators. Three to four years might be needed for this first stage, in which programmes will set out clear objectives and secure a budget earmarked for evaluation, ranging from 1–2% of their total funds (depending on the size of the programme).
3. During this process, commissioning organisations will gain experience, evaluators will be trained on the job (learning by doing), and a market for RTDI evaluations will be created.
4. Stimulate stakeholders to pay small yearly membership fees to make a regional RTDI evaluation platform sustainable. This will enable interaction and good practice sharing at the regional level by bringing experts from different national and regional administrations into contact with each other and which can centrally provide high-quality trainings on evaluation methods and evaluation processes.

5. Programme owners will, based on training, learning on the job, and their own experience, increase their ambitions for RTDI policies by tendering more complex evaluations (portfolio and system evaluations), whereas national public, private non-profit, and profit-oriented evaluators (institutions who perform evaluations) will emerge to respond to the increasing market demand for sound RTDI evaluations in South East Europe.

The participants encourage and support the project partners to conduct the planned country missions to non-partner countries in South East Europe and express also their willingness to support them when necessary in their country. Moreover, the existing evaluation societies put an emphasis on avoiding a duplication of efforts and express their wish to look proactively to exploit synergies with planned cross-sector and cross-border activities.

Vienna, 26 March 2014

Towards a sustainable RTDI evaluation platform

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Over the 3 years of the EVAL-INNO project's implementation, a discussion developed on the future of possible joint activities in the target countries. The activities have established a common understanding of the importance and usefulness of evaluation as an important tool for learning with regards to policy development and policy delivery. Following the end of the project in the middle of 2014, the completed activities have the potential to initiate follow-up activities that further its original mission. The idea of sharing ownership for a future RTDI platform was promoted through a series of visits to the South East European countries not represented within the partnership of EVAL-INNO. The ultimate goal of these missions is to find local stakeholders to take ownership of the platform and to tailor the project's results to local needs. This is important because accurately assessing the country's contextual challenges is a crucial factor for future sustainability. When considering the current experience in the target countries, it became clear that a foundation for exchange of practices and experiences already exists. Cross-country exchange of experiences gained in the RTDI field, and learning across thematic policy fields in the countries, must be considered a good starting point for any future action. During the EVAL-INNO trainings for program authorities and potential and existing evaluators held in 2013, and the thematic events organised within the context of the project, a list of future activities for focused action was jointly developed by the project partners and experts in the policy field. The suggestions were grouped in 4 different axes and were presented in several contexts. The ideas were grouped and shared at the final event of EVAL-INNO (Vienna, 25th and 26th March 2014) as well as during the country visits in 2014, when 6 additional SEE countries were visited. These missions addressed potential users and owners of the RTDI evaluation platform in the future.

A future evaluation platform must respect particular country needs, help to share experiences, and help take advantage of the existence of peers in neighbouring countries which aim to improve their own RTDI systems. Moreover, cooperation with countries across Europe, with more developed evaluation cultures and systems, can be facilitated to include the wide spectrum of activities which take place outside of the region itself.

In the following part of the article, four main activity fields are presented. The described actions are considered to be feasible in the future and they outline the

next steps towards an embedded RTDI evaluation culture. These actions are based on the needs which were identified during the implementation of EVAL-INNO.

1st category: **Structural actions**

The first group of activities consists of structural actions that support the three other types of actions proposed.

Maintenance of the evaluation platform

The network established within the EVAL-INNO project makes use of a **joint mailing list**¹, the EVAL-INNO web-portal, and a number of informational databases². These can be maintained in the future and their functionality can be further extended. As a central information hub, the e-platform can support: the **publishing of evaluation tenders**, the use and extension of the **established evaluators list**, the **announcement of relevant events**, and the provision of **relevant contacts** of potential evaluators in the region. Additionally, the **publishing of current evaluation studies** would also be an important step to stimulating evaluation culture as evaluation providers would likely improve the quality of the evaluation reports if they knew that publishing of the report is planned. Publishing also allows evaluators to learn from their peers from other countries in the region and beyond.

A jointly-owned exchange and RTDI evaluation platform can function best if **forward-looking planning of joint activities is undertaken**, for example on annual or biannual basis. **Roadmaps** for dedicated actions can be developed and agreed among the owners of the platform. From the experiences gained in EVAL-INNO and the Austrian fteval³, in order to have a fully operational platform, it is deemed necessary to count on the **support of a person working half-time (20 hours per week)** on the maintenance of the network (1/2 FTE). Other types of resources, such as in-kind contributions from the **hosting** organisation also substantially contribute to the platform's functioning. The operational work of the hosting institution, (providing the working space) and the staff dedicated to the tasks, must be agreed among the owners. A **rotating hosting scheme** between the owners of the platform could also support the understanding and enrichment of its activities. As this is a central point of international co-operation

1 The established mailing list consists of 1400 interested persons in RTDI evaluation from the SEE and beyond.

2 These databases can be found on the EVAL-INNO platform at: <http://www.eval-inno.eu/> and <http://www.eval-inno.eu/index.php/rtdi-evaluation>

3 Platform Research and Technology Evaluation – fteval, at: <http://www.fteval.at>

in the evaluation domain, it could also be a **point for attracting international funding**.

Publication and update of evaluation standards

After the publishing of the EVAL-INNO Evaluation Standards in 2012, and the now available updated version, a common understanding of evaluation practices and concepts was made available. Translation into other languages can further facilitate the broader understanding of the key issues of RTDI evaluation. The standards are not available in some SEE regional languages like the Albanian and Romanian languages, to name but a few. To translate the standards into other languages only requires the commitment of resources for translation and publishing. Also, the translation and availability of an electronic printable version may also be sufficient.

Twinning activities with experienced countries

Existing RTDI evaluations in SEE countries have involved a number of stakeholders including programme owners and public agencies. Evaluation exercises in the future can be set up by undertaking twinning options with more experienced countries. The involvement of more experienced countries can facilitate learning from peers with significant knowledge of the subject. The willingness to support less advanced countries can be facilitated with the coverage of costs of visits to preparatory meetings of evaluations (when evaluation questions are defined), during the set-up of the Terms of Reference for tenders, and to assist in the development of an appropriate methodology listed in tenders or for monitoring evaluations. However, it should be noted that the purpose and status of the twinning partner in such processes needs a careful definition. Within EVAL-INNO, this approach was used, and the feasibility and impact was considered to be high.

Establishment of an advisory group for RTDI evaluation tendering

Professionals involved in evaluations could form an advisory group that supports tendering organisations with their expertise on tender procedures, and the linked selection process. Besides the basic expertise needed to construct tenders, like support during the definition of evaluation questions, the quality of the tendering documentation can also be monitored. Depending on the process and interest, advice can be given to help improve the selection process of the best offers (conflicts of interest must be avoided). The advisory group can thus be a panel of peers from the region and beyond. According to the opinion of stakeholders consulted in EVAL-INNO, the feasibility of establishing this action

was considered to be high, the impact was seen (with variations) as positive, which led to the opinion of the authors that the action needs an exact definition of its purpose, careful planning, and a clear implementation process.

Establishment of a certificate for trained evaluators

Based on the experience of the EVAL-INNO trainings, a possible action could be to establish a certificate for trained experts that participate i.e. in organised trainings or summer-schools. Given the structure of the one-week trainings, and other possible formats, certificates could be established. The certificate, as an embedded action, could establish a pool of informed and trained experts from the region. The act of establishing a real certificate, recognised across the region would need careful planning and would require exchange with international actors in order to assess its feasibility and future functionality.

2nd Category: Regionally focused actions

The second group of activities puts emphasis on the existing peers in the region and beyond.

Policy mix peer reviews⁴ of national RTDI systems or components of the systems, like the funding system, the institutional set up, and the priorities set up, could be subject to a peer-review. Peer reviews provide an outside view of experts from the same policy field. A peer-review team is engaged to assess a country's situation and its set measures, by bringing an outsider's view that could help in identifying pressing issues, which must be considered when taking future action. According to the assessment of EVAL-INNO during consultations, the impact and feasibility of this are seen as mid-range, given the necessary resources and commitment required. Financing could be found from external sources like the European Commission, through the Instrument for Pre-Accession Assistance (IPA).

Regional benchmarking exercise

The EVAL-INNO institutional pilot benchmarking action revealed the real potential of this type of action. Given the complexity and resources which need to be committed to such an action, and the multiple countries which

4 Policy Mix Peer reviews were conducted as a part of the Open Method of Coordination for the implementation of the 3% action plan on EU MS level. Beyond the use on EU MS level, and with support from the CREST, countries outside of the EU have also undergone a similar review under the guidance of the OECD and/or UNECE (e.g. Ukraine) or in the framework of FP7 projects like IncoNet EECA (i.e. for Moldova)

should be involved, the feasibility of it is strongly influenced by the availability of external resources from the EC, through IPA funds, or other sources that promote institutional learning. Besides the latter examples, the benchmarking of intermediary structures (agencies or similar structures) also has the potential to promote the learning that could contribute to better RTDI delivery in the region⁵.

Evaluating international funding interventions

A number of international funding actions include countries from the region. These stem from World Bank loans, Operational Programmes of the Structural Funds and, most prominently, the EU Framework Programmes like FP7 or the newly established HORIZON 2020. Given the fact that participating in these programmes requires some national co-funding, the involvement is not undisputed as the return rates are not fully exploited by some countries. However, such a proposed action could address the monitoring efforts in the region, the information system and data collection in a country, and the promotion of schemes facilitating participation. A point of exchange with experienced EU member countries would be in the monitoring of efforts and of the analytical work⁶. While the impact for the development of evaluation culture in the region was considered rather limited, the interest and feasibility of such actions was identified to be significant.

3rd category: Formalised capacity building and networking activities

Under this category, the following activities were conceived:

RTDI evaluation training week for evaluators and programme owners

The idea to set up training weeks in the region came from the EVAL-INNO experience in organising such trainings, which involved around 125 trainees over the four different training weeks. Given the costs of such action for (i.e. approximately 10 trainers and other costs such as the venue, the travel costs and the dedicated time efforts for participation and organisation of such action)

5 The TAFTIE Task Force on Benchmarking Impact, Effectiveness and Efficiency (TFBIEE) has commissioned a benchmarking activity focusing on the effectiveness of specific types of innovation instruments across different countries. It gives a good overview of the current evaluation practice of measures and shows the complexity of such an endeavour.

6 PROVISO monitored Austria's FP participation in FP7 and provided important analytical reports. These efforts will be continued in HORIZON2020 in a new setting.

it is advisable to attract external funding. In order to facilitate exchange, it is advisable to involve trainees from several countries to allow the leveraging of knowledge and learning from peers.

Summer schools focusing on RTDI evaluations

Beyond the training weeks, the set-up of Summer Schools focusing on RTDI evaluations has also been proposed as a future action. The group that is addressed by such an action needs to be properly defined and, as suggested, such actions must be well balanced to include methodological guidance, practical examples and the sharing of experiences from experts.

Annual “Regional RTDI evaluation conference”

A formalised action for maintaining the established network might be the organisation of annual meetings that could be focused on planning future joint actions (setting up of a roadmap etc.). It could also be focused on the sharing of current experiences in the region and beyond. Annual meetings support community building, and the group that is addressed could consist of approximately 50 experts where current experiences could be shared and international practices could be demonstrated in order to facilitate common understanding and cooperation in the domain.

4th category: Specific events that facilitate exchange on current practice

The last group concerns **specific events that facilitate exchange on current practice**. In this sense, training elements could also be integrated into such one or two-day workshops.

A **number of topics** currently attract the attention of policy makers and of the concerned agencies in the region. The national importance of proposed topics can vary significantly. EVAL-INNO emphasises the fact that the focus of events must reflect directly the country needs. Smaller workshops would support community building and facilitate knowledge provision and should be directed to programme owners, agencies, or to the evaluators’ communities. Thematically focused discussions in the countries will facilitate a common understanding of RTDI evaluation and support community building. A national focus is maintained in such workshops (or other possible formats) but this type of action could also be announced in the neighbouring countries (through the established, and perhaps extended mailing list) and would allow the development of cross-

country networks for future action. The proposed events can be short and aligned with the available budget resources.

Overall, the proposed topics for such events are tentative and were identified during EVAL-INNO:

- Current experiences with the evaluation of intermediaries and agencies (i.e. functions of shared responsibilities in new public management in RTDI systems);
- Expert workshop on the evaluation of national funding portfolios (current examples of evaluations, approach and learning effects);
- Programme logic, indicators of programmes or funding measures (examples from experienced countries and the steps to improve programming processes);
- Monitoring systems for RTDI funding measures (exchange of practice);
- Cost/benefit of funding interventions (methodology focus);
- RTDI evaluation in the S3 (practical examples and learning from the set-up of the Smart Specialization Strategies in EU Member States);
- Methodology lectures (broad variety)⁷.

This list is non-exhaustive. Many more topics could be added, allowing a focused exchange on potential key topics in the future. The EVAL-INNO partnership proposes that events which are organised in one specific country should be open for participants from other countries and should not request a participation fee.

Since focused events would be most relevant for the SEE countries, EVAL-INNO proposes a needs-based definition, and a low-cost principle, to allow flexibility and mitigate risks.

In concluding this chapter of the book, it must be mentioned that the ultimate action to stimulate awareness of the RTDI evaluation topic and establish the network, would be to attract external funding and to encourage further cooperation by proposing the next steps to be taken. Besides the broader integration of programme owners and the policy delivery level, the EVAL-INNO partnership believes that only the concurrent development of evaluators' capacities and the implementation of "real evaluations" will lead to a better RTDI evaluation culture.

⁷ More information about methodologies used in RTDI evaluations can be found on the EVAL-INNO platform at: <http://www.eval-inno.eu/index.php/events/training-events-and-seminars/74-presentations-trainings>

Ex-post evaluation of BICRO programmes: Opportunities for personal and institutional learning

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1. Introduction: Institutional background, motivation, and purpose of the evaluation

Business Innovation Croatian Agency (BICRO) programmes have been established and implemented under the responsibility of the Ministry of Science, Education and Sports, in collaboration with the International Bank for Reconstruction and Development within the Science and Technology Project (STP). Its primary objective was to establish an institutional framework and to intensify activities and development of the Croatian innovation system. The STP started in 2006 and ended in 2011. Based on the results of STP, and considering the postponed accession of Croatia to EU (previously planned for 2012), it was decided to continue with the support of technology transfer and innovation activities within public research and higher education institutions as well as small and medium enterprises through the Second Science and Technology Project (STP II) which started in 2013. The major objective of STP II is to further develop institutional capacities and maintain and improve the pipeline of projects for the application of BICRO programmes to the European Structural and Investment Funds (ESI) in the 2014-2020 financial perspective.

During the preparation and negotiations related to the Loan Agreement, it was discussed whether the BICRO programmes (cf. Exhibit 1) should be continued without any changes. In order to identify programmes to be continued and those to be terminated, but transformed within STP II, it was required by the Ministry of Science, Education and Sports to evaluate the impacts of the respective programmes TEST, RAZUM, IRCRO, and TEHCRO. Moreover, starting from January 1st, 2013, the Business Innovation Center of Croatia and the Croatian Institute of Technology (HIT) merged into Business Innovation Agency (BICRO). This was considered as an additional reason for an ex-post evaluation of the respective programmes.

Considering the specific expertise and high level of proficiency needed for the above task, together with the requirement for objectivity and independence of experts, Technopolis Austria, a branch of the global international consulting company Technopolis Group, was selected for the ex-post evaluation of BICRO programmes, since it has adequate expertise and a relevant track record in the field of science, technology, entrepreneurship, and innovation, particularly through its involvement in the OECD Innovation Policy Review Croatia¹.

Exhibit 1: OVERVIEW OF THE PROGRAMME.

TEST

TEST provides grants for applied research projects put forward by Croatian scientists, which develop new technologies and which, following the completion of their research stage, aspire towards commercialization and new product or service creation. The overall programme objective is to boost research activities towards new technology development and applications, which are significant to businesses and industry.

RAZUM

RAZUM ensures initial seed capital and funding of R&D activities towards development of new products in start-ups and existing SMEs. Funding is available in the form of repayable advances (conditional loans), up to 70% of total project costs. Participation of funding from the private sector is required. The overall programme objective is to establish and initially help the development of knowledge-based technology driven companies, which are expected to have significant and favourable impacts on economic development.

IRCRO

Raising awareness about the importance of R&D in creating innovative globally competitive products creates high demand for research groups that can solve problems for the business sector. Collaborations on joint R&D projects for the benefit of the industry are stimulated through the IRCRO programme, through funding based on 50:50 matching grants. The overall programme objective is to stimulate private-sector investments in R&D through cooperative projects for the benefit of SMEs.

TEHCRO

TEHCRO strengthens research, innovation and business infrastructure through the provision of support to the establishment and post-establishment growth of Science & Technology Parks, Incubators for New Technologies and Competence

1 OECD Innovation Policy Review: Croatia 2013, http://www.oecd-ilibrary.org/science-and-technology/oecd-reviews-of-innovation-policy-croatia-2013_9789264204362-en

Centers affiliated to tertiary education institutions, research organizations and RDI-based industry in Croatia. The overall programme objective is to establish quality infrastructure for supporting the successful development of entrepreneurial companies, which create jobs in the community.

2. The evaluation exercise: set-up, methodology, and information sources

Within a comprehensive list of 48 rather detailed questions that have been specified in the terms of reference, three key aspects of programme interventions have been addressed: (i) programme design, (ii) programme implementation, and (iii) programme achievements.

2.1. Programme design

The evaluation of the programme design covered the following aspects: rationale, objectives, funding levels, and overall framework including participation rules.

Methodology and information sources

- Programme documents, including manuals for applicants, have been provided by BICRO to the evaluators;
- Workshops have been held with the participation of BICRO staff and the evaluation team. The evaluation team itself was composed by an evaluation expert and an expert in the respective fields (venture capital, research funding, management of technology centres, research and innovation management). Programme managers from BICRO presented the respective programmes in the introductory meeting and discussed it with the evaluators. Heads of Evaluation and Monitoring Units also participated to give insight into relevant processes inside BICRO, including both the current state of affairs and the historical context. Key questions regarding the presentation of programmes were provided ahead of the workshop by the evaluators that helped the programme managers to prepare and focus their presentations adequately to ensure good understanding by the evaluators and a constructive discussion.
- The workshop with BICRO staff took place at the respective beginning of a two-day workshop with beneficiaries.

2.2. Programme implementation

To evaluate the implementation of the programmes, the disbursement of funds, the management of the programmes, and additional support by BICRO to beneficiaries, have been assessed.

Methodology and information sources

- Indicator tables provided by BICRO, based on requests from the evaluators;
- Interviews with BICRO staff (management and implementation) discussing the following issues:
 - Understanding the agency: number of staff involved in the implementation of the respective programme, tasks, job descriptions, professional background.
 - Programme related activities supporting the implementation of the respective programmes, such as supporting (potential) beneficiaries with additional assistance during the preparation of applications and the implementation of their projects.
 - Understanding the network of BICRO beneficiaries, BICRO staff, and external evaluators of proposals forming a specific “innovative SME “community.
- Workshops with beneficiaries
 - BICRO was asked by the evaluators to group beneficiaries into smaller groups of 3 to 4 beneficiaries per session. 2-day workshops consisting of 3 sessions per day were held for programmes RAZUM, IRCRO and TEST. For the TEHCRO programme with in total only eight beneficiaries, a 1-day workshop was held;
 - Each workshop started with the introductory meeting of the evaluation team with respective programme managers from BICRO;
 - After that, sessions were held to present and discuss the respective cases. Participants in these workshops where not only the evaluation team and the 3 to 4 beneficiaries, but also respective BICRO staff;
 - After each session ad-hoc feedback was provided by the evaluators to the beneficiaries. At the end of the workshop a final meeting was held with BICRO staff which included: lessons learnt, conclusions, and recommendations by evaluators to the BICRO staff.

2.3. Programme achievements

To evaluate programme achievements, quantitative programme results were assessed, as well as the achievement of objectives, economic impact, impact on knowledge and technology transfer, impact on competitiveness on domestic and international level, networking, and structural / institutional changes of involved beneficiaries.

Methodology and information sources

- Questionnaires for beneficiaries combined with BICRO monitoring data;
- Interviews with stakeholders of the Croatian innovation system: Deputy Minister of the Ministry of Science, Education and Sports; Assistant Minister of the Ministry of Economy; Assistant Minister of the Ministry of Regional Development and EU Funds (also in his role as Chair of the BICRO's Governing Board); Head of University of Zagreb Centre for Research, Development, and Technology Transfer; Head of Sector for Competitiveness at the Ministry of Economy; and of the Ruđer Bošković Institute.

3. The evaluation of the evaluation exercise

The intention of the evaluation was to evaluate the programmes according to their objectives, implementation, and not least, to assess their achievements and impacts. In doing so, it employed a rather conventional set of tools and instruments including: analysing documents, using monitoring data, performing interviews and workshops, and conducting a survey.

At the same time, the practical implementation of these tools and instruments was designed and handled in a way that it allowed learning and thus capacity building for the whole agency, particularly of the staff involved in the implementation of the programmes. These specific, mainly organisational aspects, added value to the 'basic' evaluation and generated additional insights and impacts on the performance of BICRO, which will be described in the remainder of this chapter.

Participation of BICRO staff in the fieldwork as an opportunity and a source of personal and institutional learning

BICRO staff has been involved in more or less all stages of the evaluation exercise. In particular, this included: the provision of documents and monitoring data, the design of the survey and data collection from beneficiaries, the selection of beneficiaries to be invited for workshops, the participation in workshops, and in interviews with stakeholders.

This rather tight involvement has allowed additional learning both for the evaluators as well as for BICRO staff. The evaluators benefitted from the opportunity to familiarise with informal, non-codified factors relevant to the understanding of the origin, context, and implementation of the programmes, whereas BICRO staff obtained a better understanding of the relevance of their data, a broader view on innovation, and the role of research and technological development, not least of the need to broaden the scope of funding rationales and funding decisions.

Personal learning

As outlined above, BICRO staff has been involved in all stages of the evaluation process. According to a post-completion review, BICRO staff considered their participation in the interviews, and in particular in the workshops, as the strongest learning opportunity. It has been perceived as an intense and comprehensive learning exercise within a rather short period of time in terms of understanding the rationale of the programmes, their beneficiaries, their needs and challenges, the ways the programmes helped them to support their companies or institutes, and the ways the agency can improve their support. Another important lesson – according to BICRO staff – was the ‘experience of simplicity’ of the questionnaire collected from beneficiaries and the ease with which the evaluators came from general questions to the point in each project interview.

The most relevant single lesson to be implemented in future funding rationales is a deliberate shift of attention from funding projects to support the institution (company, institute, team) by the means of projects.

Institutional learning and networking

While the interviews provided direct information to the evaluators and simultaneously represented an opportunity for discussion and learning by the interviewed staff, workshops with beneficiaries were particularly valuable for mutual exchange of experience, learning and importantly, networking among beneficiaries.

The beneficiaries not only told their story but also heard from their colleagues about relevant issues related to the programmes, and more generally to the national context. They exchanged views and information, learned from the interviewers (the evaluators) and came closer also to their programme managers.

The workshop conversations offered to BICRO staff provided insights into the everyday life of beneficiaries’ companies, the motivation and role of the implemented projects for the companies, and current issues companies were

facing. This direct involvement was perceived an opportunity for BICRO staff to build upon its experience and obtain information for further redesign and development of programmes. Importantly, the workshops also contributed both to strengthen the professional network between BICRO and its beneficiaries and to better understand the need of involving other relevant actors into the process of making funding decisions and the implementation of the funded projects.

Programme learning: funding of organisations by projects

The final report of the BICRO ex-post evaluation contains conclusions and recommendations for the four evaluated programmes (the “basic” evaluation) and for BICRO as an institution (referred to in the report as BICRO+ model).

The major recommendation for all programmes – except for TEHCRO, which is different and specific, as it directly supports the establishment of institutions – is to introduce a significant shift in the assessment of projects and the justification of funding decisions. The new concept proposes to select projects for funding only if they are well integrated into strategies and business models of the larger organisation (firms, institutes, teams). In practical terms this means that funding decisions have to be based upon (i) future development and respective strategies and models of the larger organisation, (ii) the (technical) feasibility of the project, (iii) the soundness of the project to contribute to the overall development of the organisation – and of course (iv) the presence of specific market failures.

Such a shift in the justification of funding projects would result in various benefits. First of all, technologically attractive, but poorly connected projects would not receive funding. Applicants are thus forced to explain and specify the intended impacts from the projects considered for funding to the overall development of their organisation. On the other side, this shift of attention would necessarily create a stronger emphasis on the support from, and integration of, the respective projects into the overall organisation. In doing so, both, applicants and funders would be forced to address key bottlenecks different from the usual risks resulting from research and technological development. At the same time the selection of the ‘embedded’ projects would provide assurance that the projects will enjoy a better organisational support – a key success factor during the implementation phase.

Not least it would make the lives of funding organisations and evaluators better, as understanding the impacts from funding would no more be a ‘groping in the dark’ but a check between plan and reality, and thus between intended and realised impacts.

'Innovation system' learning

The evaluation of the four BICRO programmes also provided learning opportunities for the larger 'Croatian innovation system'. BICRO, as one of the oldest and most stable institutions of its kind in Croatia (nevertheless young in years) has successively established a large network comprising: (i) beneficiaries (people and their organisations), (ii) experts for the evaluation of proposals (both domestic and abroad), but also (iii) experts to support beneficiaries in the course of the implementation of their projects, not least (iv) other institutions at national and international level.

Given the generally high standards and experience of BICRO – one of the main outcomes of the evaluation exercise – it is considered a preferred candidate for managing larger funding programmes, particularly in the context of European Structural and Investment Funds (ESI Funds).

Summary: hands-off and hands-on experiences during the evaluation

The collaboration between evaluators and BICRO staff was dynamic, consisting of an exchange of data, interviews, workshops and, most importantly, final meetings for each programme with concluding remarks and recommendations. In addition, it is worth mentioning that, at the margins of the formal evaluation workshops, less formal conversations took place where all presentations, discussions and conclusions were additionally analysed and interpreted, which significantly contributed to the understanding and learning aspects of the BICRO team. The final workshop of the *ex-post* evaluation was held in two parts. The first part was the presentation of the main findings of the final report. The second part of the workshop was comprised of a discussion on key issues and future directions for the redesign of programmes in the context of 2014-2020 ESI Funds.

The EVOLUNIMONT experiences – the perspective of the University of Montenegro

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Project background and objectives:

The University of Montenegro, as the oldest and largest research performer in the country, is naturally seen as one of the main drivers of the social and economic development in the country. On the other hand, a more and more competitive national research environment is emerging with the establishment of new higher education and research institutions.

In order to respond to the developmental needs of the country within a new social and economic reality, as well as to exploit the opportunities which have opened to it nationally and internationally and collaborate on equal footing with more developed European universities, the need to strengthen its research function is seen as urgent.

As the university's management is aware of the situation, it decided that it is necessary to strengthen the research component of the institution, and in doing so, saw that it was crucial to set strategic goals to enabling its further development. It was evident that a comprehensive evaluation of the existing capacities should be used as starting point in the strategic planning process. The FP7 REGPOT II call, published in 2008, was perceived as an ideal instrument that would enable an international and objective peer review evaluation process of the institution.

Through the project *Evaluation of Research Activities and Strategic Planning of Research at the University of Montenegro* (EVOLUNIMONT), a strategic planning process was carried out. It was preceded by the development of a report on the research profile of the University, based on an external evaluation of the existing research quality and capabilities. A panel of experienced experts, appointed by the European Commission, was in charge of leading the process, together with the Vice-Rector for Research, and assisted by the local project team. In addition, activities were conducted which were aimed at acquiring knowledge on decision-making within the process of evaluation and strategic planning, as well as awareness raising on the importance of the process among the research community and the wider public. All university units, together with the university management and representatives of professors' associations, were also involved in the development of the Strategic Research Plan, led by the appointed strategic expert. The strategic plan was the final result of the project.

The main idea behind the EVOLUNIMONT project was to give the university the chance to evolve, through the provision of a framework for stimulating its research, which included:

- Identifying obstacles (i.e. institutional, policy, materials and human resources) for research, that need to be removed;
- Learning about good practices in research management of universities that have achieved intensive development in research;
- Defining the University Research Strategy that will facilitate research and research management within the university;
- Providing a standard for following its progress and comparing its research quality with European counterparts.

This was a pioneer activity in Montenegro, carried out in the period between June and December 2009. The only other institutional evaluation that tackled, to a certain extent, research activities, is the regular re-accreditation of higher education institutions in the country. However, strategic planning of research on an institutional level had not been carried out previously.

Thus, the project provided two main results, including:

- **A report on External Evaluation of Research** with joint SWOT analysis, based on the self-evaluation reports of the university units, and external evaluators' on-site visits, interviews and workshops;
- **A Strategic Research Plan**, developed by the strategic planning expert, based on the exchange of knowledge and good practices, an external evaluation report, and strategic planning workshop that facilitated the contributions of all university units, the university management and individual researchers to the process.

Evaluation process:

The evaluation process consisted of *self-evaluation* and *external evaluation*, based on which the Evaluation Report was developed. A committee of 4 international members was appointed by the European Commission to conduct the external evaluation, including: Prof. Baruch Raz (Israel), Chair of the Evaluation Committee, Prof. Vito Sardo (Italy), Prof. Nikos Kyristis (Greece) and Prof. Irina Ribarova (Bulgaria), whereas the internal evaluation process was conducted and coordinated by the project team.

As there was an awareness of the links between the processes of evaluation and strategic planning, it was decided to involve the appointed strategic planning expert as an observer in the evaluation process. It enabled direct communication between the experts, and help facilitate the strategic planning process.

The following **stages of the evaluation** were defined:

- The development and approval of the self-evaluation questionnaire;
- The self-evaluation of all the university departments;
- A review of the answers by the project team;
- An analysis of the self-evaluation questionnaires by external evaluators,
- An on-site external evaluation of the University of Montenegro I;
- An on-site external evaluation of the University of Montenegro II;
- The preparation of the Report on External Evaluation;
- A presentation of the Report on External Evaluation to the University Senate, and its adoption by the Senate.

The internal evaluation (June-September 2009) was based on a tailor-made questionnaire, developed by the project team and strategic planning expert.

The following data were collected:

- General data;
- The organisation of the departments;
- Available resources (i.e. human, material, RTD budget);
- Scientific outputs (i.e. achievements, projects, plans, articles, papers, conferences, awards and merits, IPR, international cooperation);
- A SWOT analysis.

All University units took part in the internal evaluation process, with the assistance of the project team, if needed. Each unit appointed a person to be in charge of the preparation of the questionnaires. The reports were adopted by their respective faculty/institute councils. The process was overseen by the Vice-Rector for Research, as the Project Coordinator, members of the project team, and University management.

The external evaluation (September-December 2009) was conducted by the previously mentioned panel of experts, in coordination with the Project Coordinator, and assisted by the project team.

The Terms of Reference (ToR) for the engagement of the experts was previously set in the Project Description of Work. Detailed terms and conditions were

discussed and provisionally agreed upon between the Project Coordinator and the Committee Chair.

The Evaluation Committee prepared a proposal of the evaluation process in consultations with Project Coordinator, and in accordance with the ToR. Next, they proposed the evaluation methodology.

The methodology consisted of following three stages:

- *Stage 1. Collection of information:* several types of activities were carried out at this stage. It started with the **collection** of the existing institutional and national **legislation** and related documents. Another source of input was the **self-evaluation documents** collected during the internal evaluation stage. Following this, **on-site visits** were organised, and the evaluators conducted **interviews** with the Rector and his team, deans of the faculties and directors of research institutes, academic/research staff, and students. Also, the panel visited **research laboratories** at different university units. Next, a **DPSIR analysis** was carried out and a **workshop** was organised with representatives of different units, on the level of decision-making teams, about suggestions for possible actions to be implemented.
- *Stage 2. Analysis of the information:* this stage consisted of an **individual assessment** by each evaluator and **round table discussions** among evaluators (SWOT and DPSIR analyses and ranking games);
- *Stage 3. Preparation of the individual draft reports of each evaluator:* preparation of evaluation reports, the merging the observations and comments of evaluators, and the elaboration of a consensus report.

Level 1. Collection of information

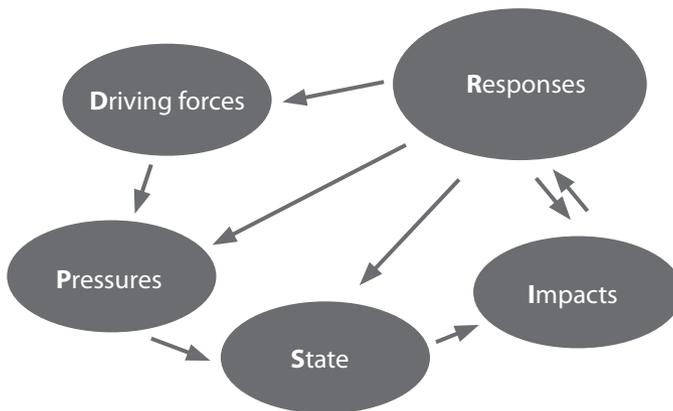
The task of **collecting the available documents** was under the responsibility of project assistants. It should be noted that, at the time, the existing legislation on the national level was more or less limited to the Law on Scientific-Research Activities (2005) and the Strategy for Scientific-Research Activities (2008), with parts of the Law on Higher Education (2003) also relevant. The institutional framework was also not developed, with the Quality Assurance system in its infancy, there were no specific rules for research activities. As a result of this, the reliance on **self-evaluation documents** was increased.

On-site visits were conducted in two phases, including meetings and interviews with the university management, then visits to all the units and interviews with their management, individual researchers, as well as PhD students and

young researchers. The visits also allowed for insights into the current level of **infrastructure, facilities and laboratories** within each of the units.

DPSIR analysis was another tool used by the evaluators. It is a planning approach, initially proposed by the National Institute of Public Health and Environment, Bilthoven, Netherlands (EEA, 1998). Kristensen (2004) explains it as a “chain of causal links starting with ‘driving forces’ (economic sectors, human activities) through ‘pressures’ (emissions, waste) to ‘states’ (physical, chemical and biological) and ‘impacts’ on ecosystems, human health and functions, eventually leading to political ‘responses’ (prioritization, target setting, indicators)”. In the case of EVOLUNIMONT evaluation, due to time limitations, the elements of the DPSIR approach were reduced to include three – DSR (drivers, state, and response).

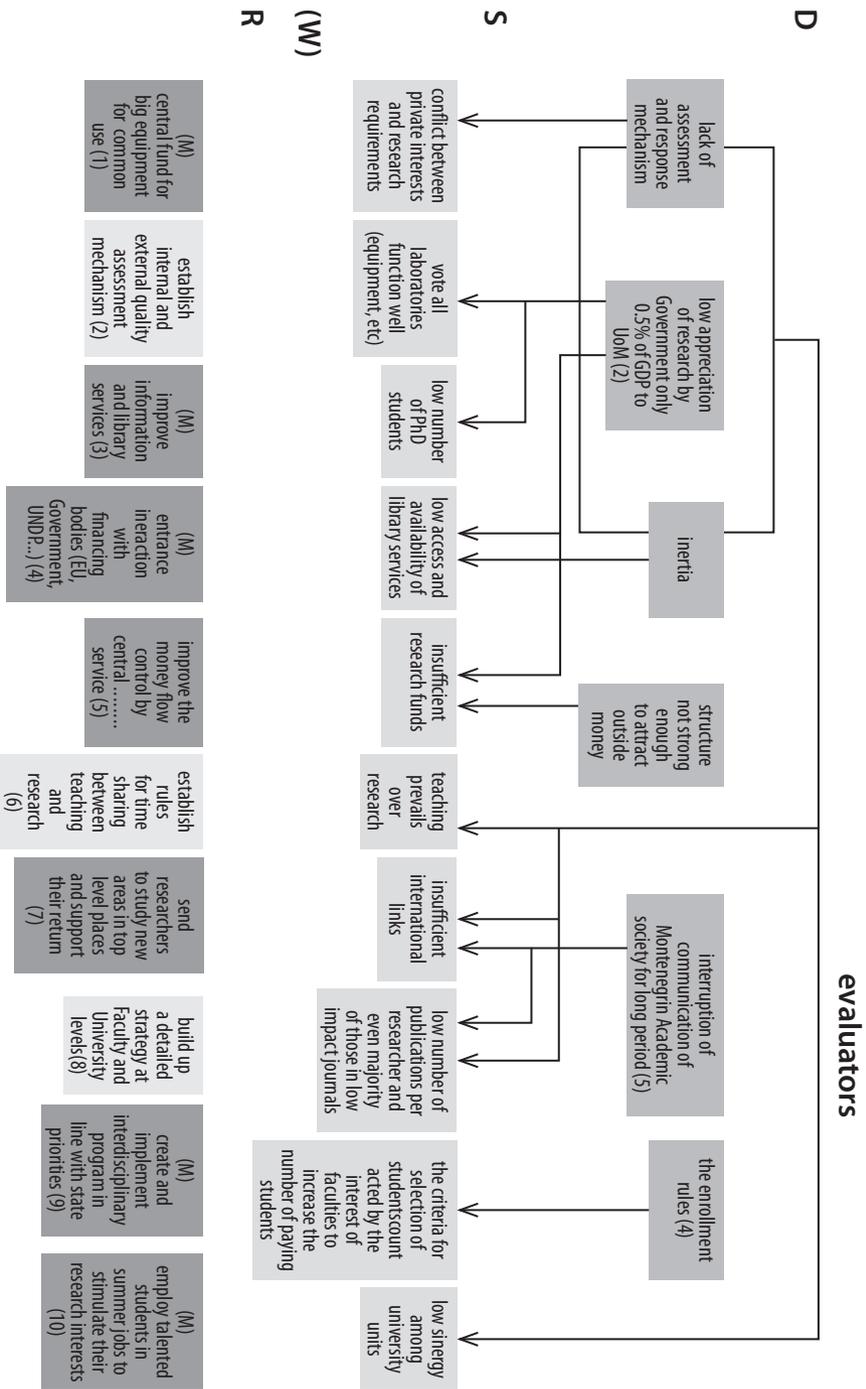
Figure 1: GENERAL FIGURE FOR THE DPSIR APPROACH.



The analysis was performed first by the evaluators, and then by the academic staff with managing functions (Rector, Deans, Directors, etc.) at a **workshop** which was organised at the Rectorate.

During the workshop, the participants were divided into groups (five to seven persons in each group). Each group was first asked to describe the state (S) of the UoM with respect to research, identifying only the weaknesses. Then, the group had to discuss and list the driving forces (D), which led to this situation. Finally, a list of possible actions ('responses' (R)) was identified by each group. In addition to this, as the next outcome of the workshop, the participants classified potential future activities in two groups, in accordance with the financial means needed for their implementation. The first group were those options requiring no or limited investment, and the second were those requiring significant funds. The list provided was one of the inputs to the strategic planning.

Figure 2: DSR RESULTS.



Based on the inputs, the Evaluation team developed the overall SWOT analysis for the university:

Figure 3: SWOT ANALYSIS.

S	W	O	T
A few excellent researchers (groups)	Teaching prevails over research	Becoming strong research unit, which supports the national development requirements	Young graduates can not be absorbed by the local society
	Conflict between private interests and research requirements	Opening up to national non-academic community	Unfair competition from private Universities
	The criteria for selection of students counteracted by the financial interest to increase the number of students	Acquisition of knowledge and skills by long-term training in international centres of excellence	Resistance to innovation due to mental inertia
A comprehensive University covering wide range of subjects	Disparity of the quality of the equipment among Faculties	Increased availability of international funds	Research on non-national priorities due to dependence on international grants
	Low synergy among University Units	Interdisciplinary cooperation among the Units	Brain drain
	Low availability and limited access to library services	Transition from dispersed control to centralised control at University level	Worsening the level if no appropriate measures are taken
Involvement in regional cooperation	Insufficient international links	Better quality control through external evaluation	Lack of sustainability after the projects' end
In spite of the very difficult situation still some publications in high impact journals	Low number of publications per researcher and even the majority of those in low impact journals		
Some capable leaders	Insufficient research funds		
	Inadequate organisation to enact University directives		
Presence of Impressive PhD students	Small number of PhD students		

The report ended with a set of recommendations, which were taken up by the strategic planning expert.

Experience of the university in the evaluation process

Even though the EVOLUNIMONT project was initiated by the university management, it could be noted that there had been certain resistance from some of the university units to participate in the process. There was lack of trust in the usefulness and use of the action, and the use of the final results. This was most visible during the self-evaluation process, and during the external evaluation on-site visits and interviews. It can be explained by the fact that this was the first activity of its type carried out by the university, and was initiated by the university itself. The only, somewhat similar, previous experience was one from the re-accreditation process of higher education institutions, carried out in 2007.

Another obstacle could be seen in the fact that, at the time of the evaluation, the internal Quality Assurance system was in its early stages of development, which ran in parallel with the evaluation process.

The overall evaluation culture was at the time underdeveloped, and without existing institutional and national practices to carry out either regular periodic, or even *ad hoc*, institutional evaluations. There had been no mechanisms for linking the funding of research by the state/institution with research performance.

However, during the process, and leading up towards the final evaluation workshop, the increase of acceptance and awareness of the importance of the process was evident, which resulted in good responses to the workshop and active participation.

On the other hand, regardless of the mentioned reasons, what should be underlined is the objective approach of the participants from the beginning, which resulted in outputs from the university units (self-evaluation forms, inputs from the workshop, etc.) that were in great agreement with the findings of the Evaluation Committee.

The commitment that developed continued during the strategic planning process, which resulted in active participation of all the units in the strategic planning workshop, which provided excellent input to the strategic planning expert.

Take-up of the evaluation results: strategic planning process

Strategic planning started in parallel with the start of evaluation, through the selection of the expert. First it was based on an internal call for proposals, and the intention was to involve somebody from the university staff. However, there were no applicants from the institution, and it was outsourced to Ms. Luisa MILIC, an expert from Montenegro living in the UK.

Since the expert was not from the university, and also in order to enable as high a quality product as possible, Ms. Milic was involved in the evaluation process (as an observer) and had met the evaluators during their work. Also, she was a member of the project delegation that visited Brno University of Technology in August 2009, where she gained new experience and acquired specific knowledge related to management in the sector of research.

It was the responsibility of the expert to prepare the process of strategic planning that took place after the reception of Report on External Evaluation. She worked closely with the project coordinator and her team on the task.

Also, she took part in the Evaluation Workshop in November, when she met the evaluators and they jointly discussed the strategic planning process.

As to the background material, together with the project coordinator and members of the team, she developed an *Intermediate Delivery Planning Work Plan* for two periods: one from May to end of December 2009, and second from the period of January – March 2010.

The next activity related to strategic planning was a 2-day workshop on formulating the strategy that took place on January 2010.

Goals of the Workshop were:

- To provide a common purpose, values, vision and common data for decision-makers;
- to ensure that the best research ideas are incorporated into the plan;
- to ensure that the needs of the university's research community are addressed;
- to utilise brainstorming and analytical process to establish long-range research goals, in setting priorities about research directions, and in building research commitments through action plans;
- inform everyone about general ideas for the future development of research.

Each of the university units appointed a person to be member of the Working Group for strategy development, and they took part in the workshop. The persons appointed were at the same time researchers and representatives of the unit management, including deans, directors of the institutes, and vice-deans for research or international cooperation. Also, a representative of the university professors and researchers forum took part, as well as representatives of the Montenegrin Academy of Sciences and Arts. Top university management also took active part.

In order to provide good preparation grounds and make the workshop as productive as possible, the *Strategic Research Planning Workbook* was developed

and sent in advance to the participants. The workbook was in line with the activities planned and carried out at the workshop. The following aspects of the strategic planning were included:

- Planning audit;
- value audit brainstorming session;
- mission statement brainstorming session;
- strategic planning activity mind map exercise;
- vision statement brainstorming session;
- selection of research program priorities;
- goals, objectives, strategy formulation.

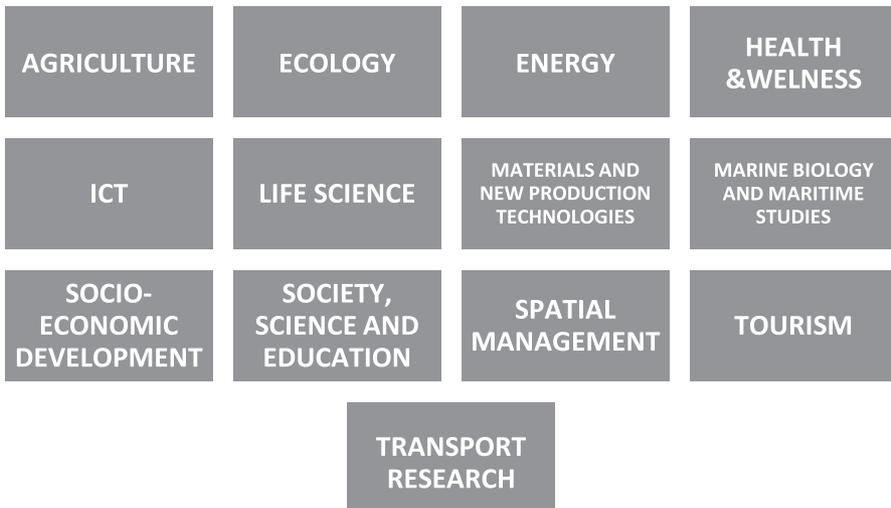
What was notable about the workshop was the high-level of commitment to the participants as well as quality input to the strategic document.

In the end, the process resulted with the strategic plan that encompassed both the results of the evaluation, and the inputs from the research community.

It provided two sets of priorities:

- Priority research fields: since this was the first research plan in the university's history, and given the fact that the research component in general needs to be strengthened in the institution, the research priority fields were widely set, in order to provide equal opportunities to all university units to further develop their capacities in the first period

Figure 4: PRIORITY RESEARCH FIELDS.



- Strategic goals (with accompanying strategic objectives):
 - To improve research capacity and capabilities, facilities, infrastructure and administrative support for research;
 - to build nationally and internationally recognised research programs and enhance the universities research visibility and reputation;
 - to be more creative and innovative in pursuing external research funding objectives;
 - to strengthen and increase collaboration and research partnerships with other national or international institutions, industries, and government agencies;
 - to improve performance, assessment and accountability of research activities and sponsored projects.

The strategic document is accompanied by the Action Plan and a timeline for implementation.

The draft document was put through a two-step adoption procedure:

- The first step included a round table debate involving the research community, which was organised on March 19th, 2010. It was open to a broader research public. Also, representatives of the media had a chance to talk to the Rector, Project Coordinator and Strategic Expert at a press conference held shortly before the beginning of the debate.

The draft document was posted to the project web-site and the research community and other stakeholders were notified of that in advance, so that they were able to read it and give informed comments and suggestions.

The impressions and comments were positive in general, and came from both researchers that have not participated in the process, and members of the Working Group, since their opinion and inputs were appropriately incorporated into the draft.

- The document and the round table conclusions and recommendations were adopted by the University Senate and confirmed by the University Governing Board (as the highest decision-making bodies of the institution).

Follow-up on the evaluation/research plan

Given the fact that funding of the university has decreased, the implementation of the activities from the evaluation and research plan could not be completely fulfilled within the timeline for implementation. However, significant efforts were

made, such as the better centralisation of research services (RD Service Centre), the development of internal quality control mechanisms, then working with alumni, and other proposed activities. The number of applications for external funds has increased. University teams have applied as both coordinators and project partners and have increased the number of successful applications. The diversification of external funds is evident. Services dedicated to the development of the 'soft skills' of young researchers have been initialised through series of trainings with internationally renowned trainers.

The experiences gained in the EVOLUNIMONT project has helped stimulate other evaluation related activities by the university, with the universities participation in the EVAL-INNO project being one of them.

Evaluation and benchmarking of the Institute of Chemistry of the Ss. Cyril and Methodius University in Skopje

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Introduction

The Institute of Chemistry (IoC) at the Faculty of Sciences and Mathematics (FSM), within the University Ss. Cyril and Methodius, in Skopje, has gained international recognition due to its scientific results and collaboration with distinguished research groups from European universities and research centres. It was nominated as a potential Centre of Excellence due to its competences, which are evidenced by the fact that about one third of all scientific papers from the country published in international journals cited in the Science Citation Index (SCI) come from this Institute.

The association of the country to the Seventh Framework Programmes for Research and Technological Development (FP7) has brought opportunities for researchers to take part in European research activities. From the viewpoint of the Institute of Chemistry, performing an international independent expert evaluation, with the aim of assessing research quality and capability of the Institute of Chemistry, FSM, was considered as a very important step for its positioning in the country and beyond, as an established research entity and a potential Centre of Excellence. This assessment was also seen as a useful tool for the strategic orientation of the Institute and to maintain the competencies and competitiveness of existing research groups within the context of the European Research Area (ERA).

The objective of the 2008 Research Potential call entitled *“Stimulating the realisation of the full research potential of the enlarged Union by unlocking and developing existing or emerging research potential in the European Union’s convergence regions and outermost regions, and helping to strengthen the capacities of their researchers to successfully participate in research activities at EU level”*¹, was recognised as an opportunity for the Institute of Chemistry to implement an international independent expert evaluation process with the following purposes:

1 European Commission C(2007)5759 of 29 November 2007) of 29 November 2007; Work Programme 2008 Capacities, Part 4, Research Potential

- Measurement of its research performance;
- planning further development;
- positioning the institute in the country and beyond as a well functioning research entity and a potential Centre of Excellence.

The evaluation was performed within the awarded FP7 project (support action): *Evaluation of the Research Capacity and Development of a Strategy for Further Growth in Chemistry in General and in Food Science in Particular* (SWOT-CHEMISTRY-FOOD, executed in 18 months starting in February 2009). Details about the project are available at the project website at: <http://chemistryfood.pmf.ukim.edu.mk/>

Levels of evaluation and approach of the evaluation team

The evaluation of the research quality of the Institute of Chemistry was carried out through the participation of:

- All researchers from the institution – The involvement was coordinated by Prof. Marina Stefova (who was also the coordinator of the SWOT-CHEMISTRY-FOOD project), Prof. Trajče Stafilov (coordinated the previous self-evaluation of the Institute) and Prof. Viktor Stefov (involved in the evaluation and set-up of science policy in the country as a President of the Council for Scientific Research at the Ministry of Education and Science from 2005-2007).
- International experts – Dr. Klaus Schuch from the Zentrum für Soziale Innovation, ZSI from Austria (extensively involved in evaluation of research institutions, projects and programmes) and Prof. Stane Pejovnik, who at that time was Dean of the Faculty of Chemistry and Chemical Technology, University of Ljubljana, Slovenia (and has been a member of the Scientific Council of UNESCO, an expert at UNIDO, was previously member of Technology and Development Council at Ministry for Science and Technology of Slovenia, as well as the President of Science and Technology Council of Republic of Slovenia in 1999).

The activity foreseen in the *FP7 Capacities Work Programme* for research potential was: to *provide evaluation facilities for research entities in the EU's convergence regions and outermost regions*. The national and international evaluators were suggested in the submitted proposal due to their previous experience. They were subcontracted by the EC after a positive evaluation and signature of the grant agreement. The two experts appointed by the EC, Dr. Klaus Schuch and Prof. Stane Pejovnik, performed the evaluation of the performance of the Institute of Chemistry based on international standards.

Data collection and analysis

As a basis for this evaluation, a SWOT based methodology concept was established by the authors and was tailored towards the requirements of the Institute of Chemistry and the objectives of the EC funded FP7 project (Pejovnik and Schuch, 2009)². It was the guiding concept for this evaluation and its main elements were derived from the RECORD Manual on “Benchmarking Innovative Research Organisations in European Accession Countries” (Borsi et al, 2004)³.

In order to collect the necessary data and information, a quantitative and a qualitative questionnaire were used and were filled in by the employees. Interviews were also performed with selected members of the Institute (with criteria used to select a sample, including age, position, and department). This data was collected within a month, and two months later a report was delivered. All collected data was classified in order to investigate:

- Internal factors which were under direct control of the Institute;
- external factors which were outside the control of the Institute;
- negotiated factors for which the Institute has just limited “control” (factors to be negotiated with at least one external party to become effective).

Three potential benchmarks for comparison were encountered:

1. Internal benchmarking (across time);
2. external benchmarking (ideally a comparative benchmarking with other institutes of chemistry);
3. functional benchmarking (analysis of functions and practices vis-a-vis some accepted standards).

For the benchmarking exercise, all three dimensions were partially taken into account. Firstly, time series data was collected, and the history of the IoC was investigated in order to make statements about its development and progress. Secondly, functional benchmarking was implemented, based upon the experiences of the external evaluators. Both of the evaluators had previously been engaged in evaluations of research institutions and were in the top management of internationally successful research organisations.

2 Pejovnik, S. and Schuch, K. (2009): SWOT Concept for the Evaluation and Benchmarking of the Institute of Chemistry of the SS Cyril and Methodius University Skopje, Deliverable of the FP7-Project “SWOT-CHEMISTRY-FOOD”, Institute of Chemistry, Ss. Cyril and Methodius University: Skopje

3 Borsi, B., Dévai, K., Papenek, G. and Rush, H. (2004): The RECORD Manual. Benchmarking Innovative Research Organisations in European Accession Countries. European Commission: Brussels

During the exercise, all members of the Institute of Chemistry were involved in collecting the data and actively participated in all phases of the activity to some degree. Some difficulties were encountered due to the fact that the Institute of Chemistry was an organisational unit of the Faculty of Natural Sciences and Mathematics, which is a unit of the Ss. Cyril and Methodius University, so it is not financially autonomous, but part of the university's (and partly the faculty's) financial regime. Therefore, no professional financial management structures existed at the institutional level and some data were difficult to obtain. Thus, some estimates had to be made.

The report from the SWOT analysis of the Institute of Chemistry was prepared by the external experts and finalised for publication by the project team at the institute. The whole report, including the objectives, methodology, the overall results and detailed analysis of the internal strengths and weaknesses, and the negotiated and external factors accompanied by recommendations, was printed as a booklet by the Faculty of Natural Sciences and Mathematics. It is also available for download at the project website as a project deliverable.⁴

Summary and conclusions

This exercise was both the first of this kind carried out at this institute as well as in the country. It showed that the Institute of Chemistry had the capacity to follow and absorb new knowledge developed abroad, and is the country's most prominent link to world-class scientific progress in many fields of chemistry. The Institute of Chemistry largely meets the very high standards set, and requirements laid down, in the law on "Scientific Center of Excellence". There is, naturally, also room for improvement. From its own resources, it has initiated a professional process to identify its strengths and weaknesses and to refocus on the exploitation of opportunities and the reduction of threats. The evaluation has shown that the institute:

- Has strong linkages between learning and research, but has difficulties in contributing to industrial innovations;
- progresses from a rather segmented disciplinary tradition split across a few units, towards interdisciplinary cooperation and a focus on topics with both applied and fundamental components;
- has very high ethical research standards, both on paper and in practice, which surpass the regular standards at the Ss. Cyril and Methodius University and other national research organisations;

4 D2.2: <http://chemistryfood.pmf.ukim.edu.mk/wp2.html>

- has a dynamic and flexible working culture and provides an attractive work environment at the individual and team levels;
- is highly aware about its responsibility to educate new generations of scientific and technological talents and runs procedures to accomplish this responsibility;
- has, doubtlessly, the intellectual and operational capacity as well as the proven readiness, to work in dynamic partnerships with the organs of the central administration and the units of local government in a respectful shared way.

Evidently, no research institute has only strengths. Thus, the identified weaknesses were treated as reasons and starting points for continuous improvements. This exercise was very useful from several viewpoints, including: individual (for everyone to analyse her/his own position with regards to the individual contribution to the overall performance of the institute), institutional (for analysis of the overall performance of the institute and comparison to other institutions), and national (for analysis of the performance and contribution at the national level).

It revealed weaknesses that were evident, but difficult to be accepted as such, and others that were not identified previously, but were pointed out by the external evaluators and then seen and accepted by the members of the institute.

The whole process of collecting data, interviews, data analysis and finally the preparation of the report were seen as a simultaneous internal (self-evaluation) and external evaluation carried out by experienced evaluators, who made us think about our individual and institutional position, contributions, future prospects, and how to improve them.

The experience with the evaluation of the Institute of Chemistry should be warmly recommended as a good practice for any research and/or higher education institution for achieving and maintaining high standards in its work. It is always beneficial to identify and collect relevant data which provides information about performance, allows for an analysis to see where one stands, and provides an information base to develop a strategy on how to improve.

Evaluation in the context of the Greek smart specialisation strategies

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1. Introduction

The European Commission, in its Communication *Regional Policy Contributing to Smart Growth in Europe 2020*¹ introduces the concept of smart specialisation and encourages regions and Member States to design smart specialisation strategies as a means to deliver more targeted Structural Fund support and to harness the potential for smart growth in all regions.

In the regulations of the new Cohesion Policy, smart specialisation has been introduced as an 'ex-ante conditionality', meaning that Member States and regions should have such a strategy in place in order to be able to receive financial support for their R&D and innovation measures through European Structural and Investment Funds (ESIF).

The new policy concept relies on entrepreneurial experimentation and trial and error (Foray and Goenega, 2013) and therefore clear criteria for success and failure are necessary, together with an effective monitoring and evaluation system. Within this context, evaluation is not only a good practice for policy learning, but an integral element of the programming cycle aiming at reducing the cost of experimentation and of adverse decisions regarding specialisation.

Following the European Commission's recommendations, the Greek government decided that a national smart specialisation strategy would be prepared by the General Secretariat for Research and Technology (GSRT), while each one of the 13 regions will present its own strategy. At the national level, a smart specialisation strategy refers to the horizontal Operational Programme "Competitiveness, Entrepreneurship and Innovation" (EPANEK), while at the regions each strategy is related to the respective regional operational programme.

In the following sections, the role of monitoring and evaluation within the new policy context is discussed, as well as how these elements have been incorporated into the programming cycle at the regional and national level in Greece.

1 http://ec.europa.eu/regional_policy/sources/docoffic/official/communic/comm_en.htm

2. Evaluation in the context of the RIS3 concept and ESIF regulations

2.1. Monitoring and evaluation in the context of smart specialisation strategy

Evaluation and monitoring are central elements of smart specialisation, aiming not only at policy learning but also at mitigating the cost of policy experimentation. The underlying concept of smart specialisation is that public investments should be directed towards a small number of activities that could leverage private investments in R&D and innovation, and generate the most attractive structural changes given particular strengths and weaknesses in regions and countries (Foray et al, 2012). The selection of priorities and decisions pertaining to the specialisation of a region, involves significant risk, as unsuccessful investment commitments or changes in international competition could lock the economy in an inefficient evolution path. However, the point is not to eliminate the risk of making wrong choices, but rather to minimise the cost of wrong choices. Thus, a reliable and evidence-based monitoring and evaluation system is necessary that allows decisions to be taken regarding the selection of priorities, the discontinuation of non-viable activities and the reallocation of public funding towards the most successful and promising R&D and innovation activities (Foray and Rainoldi, 2013).

Ex-ante evaluation procedures should be established at a very early stage for assessing regions' potential and priority options. In their recent work, Foray and Rainoldi (2013) provide a set of criteria for the ex-ante evaluation of priorities that combine a policy vision regarding the desirable structural evolution with entrepreneurial knowledge and discoveries, which will materialise and validate the policy vision. In order to address the criteria, the use of diagnostic tools and indicators for monitoring entrepreneurial discovery is necessary as are methods for encouraging entrepreneurial actors, including firms, universities and research centres to elicit information and be engaged in the evaluation process.

In order for the trial-and-error approach of Smart Specialisation to be effective, the results of the priority setting and the policy mix should be monitored annually and evaluated ex post every few years, to identify success and failures, and accordingly to feed-back into policy design (Foray and Rainoldi, 2013). Therefore, the choice of a coherent set of output and result indicators is important. The output indicators measure the outputs of policy interventions at the level of projects or of specific activities, while the result indicators measure change and evolution of the regional productive structure in the short or long run, depending on the time horizon of the supported activities. The indicators should be linked to the supported activities.

However, in order to measure structural changes, they should measure the effects on all possible beneficiaries, not only on those participate in the activities. Unlike horizontal R&D and innovation policies, smart specialisation focuses on specific activities that do not correspond to statistical sectors. Activities could either represent a fraction of a sector or they could cross-cut the boundaries of several sectors. Therefore, data provided by regional and national official statistics are not suitable for measuring the effects of smart specialisation on the local economy. Ad-hoc surveys designed for the supported population are more suitable (Foray et al, 2012), although such an approach could increase management complexity, as well as cost, resources, expertise and time requirements.

The above rationale regarding the priority setting and the assessment of the appropriateness and effectiveness of policy interventions is accommodated in a broader, formal monitoring and evaluation framework, foreseen in the ESIF regulations, applying to whole Operational Programmes, without a specific focus on R&D and Innovation.

2.2. Monitoring and evaluation in EISF regulations

Until now, evaluations of Structural Fund interventions focused on the design (ex ante evaluations) and the implementation (ongoing evaluations) of Operational Programmes, while the evaluation of impacts had been left to the discretion of Member States. In the new programming period 2014-2020, regulations require Member States to evaluate effectiveness, efficiency and impact of their Operational Programmes (art. 56 CPR)², in addition to the standard annual monitoring that focuses on financial data and output indicators. The level of focus (the whole Operational Programme, specific measures, and group of measures or themes) and the frequency of evaluations is decided by the Member State according to the needs. The evaluation activities, the methods to be used for each evaluation, data requirements, a timetable, a communication strategy, human resources involved and the budget for the implementation of the evaluations should be described in an evaluation plan which is submitted to the Commission within one year of the adoption of the programme (114 CPR). It is recommended by the regulations that the monitoring reports of 2017, 2019 and the final report to include an assessment of the contribution of the programme(s) towards the change of results indicators, providing that evidence from evaluations is available. In addition, the monitoring report of 2019 and the final report should include the assessment of the contribution of the programme(s) to achieve the European Union strategy for smart, sustainable and inclusive growth.

2 The Common Provisions Regulation 1303/2013

The ex-ante evaluation is also performed at the level of the Operational Programme (art. 55, CPR) without any particular focus on R&D and innovation. The main elements of the evaluation include an assessment of the contribution of the programme to the Union strategy and of the quality of the design, by addressing issues such as the coherence of the programme, the consistency of the selected thematic objectives, the relevance of indicators, the rationale, and the form of support proposed. The evaluation report is submitted to the Commission together with the Operational Programmes.

All evaluations (ex-ante, ongoing, ex-post) should be procured by the Managing Authorities of each Operational Programme and implemented by independent experts.

3. Experience on designing and evaluating R&D and innovation policy in Greek regions

The adoption of the smart specialisation approach by the Cohesion Policy has introduced new requirements for the design, monitoring and evaluation of programmes that go far beyond the existing experience and practices of the Greek regions and the central government.

During the four preceding programming periods, the Managing Authorities at regional and national level, as well as the local consulting community, have developed skills and accumulated experience around ex-ante evaluation and monitoring of Operational Programmes. Monitoring has focused on the absorption of funding and on verifying the production of expected outputs. Limited attention has been given to specific policy domains, such as R&D and innovation, while the assessment of results and impacts has been neglected overall.

The GSRT, the public body responsible for the design and implementation of R&D and innovation policy, has made some efforts to evaluate the results and the impact of specific measures. However, the efforts were fragmented. Currently GSRT has initiated the evaluation of five flagship interventions implemented during the 3rd programming period (2000-2006).

In terms of policy making and designing of interventions, regions have very limited experience. Until 2011 regional administrations were part of the national administration and without competencies on designing policy. Their main mandate was the implementation of national policy. Thus, past and current regional Operational Programmes focused on the development of infrastructures, while the meagre budgets that have been allocated to support SMEs, R&D and

innovation, contributed to the implementation of national programmes managed by the relevant national agencies. In the case of R&D and innovation, most of regions' budgets are managed by GSRT. With the reform of the regional governance system in 2011, regions gained significant prerogatives, including the design of their own development policy and their Operational Programmes. However, so far their participation in the design of the new Operational Programmes is limited. The responsibility for the design of the programmes has been laid on the Managing Authorities which have significant administrative experience and capacity on designing and procuring infrastructure projects and social support measures, but limited competencies in cohesion, R&D and innovation policy.

Smart specialisation elevates policy making to a new level of complexity as it articulates top-down (policy vision) and bottom-up (entrepreneurial discovery) priorities into a coherent strategy which is materialised by integrated and sophisticated policy instruments. Thus, as it has been stressed by Foray and Rainoldi (2013) the success of smart serialisation strategies requires the regions' policy making capabilities to reach high levels of competence and commitment. Therefore, the design of smart specialisation strategies and of the new Operational Programmes is a major challenge, not only for the Greek regions but for the central administration and GSRT as well.

4. Monitoring and evaluation in Greece

The efforts of the regions and of GSRT to ex-ante assess the discoveries and innovation potential, and the sufficiency of the monitoring and evaluation system they envisage, should be understood within the broader context of their experiences and past achievements which has been briefly presented in the previous section.

Regional and national smart specialisation strategies are still under preparation and therefore not all of their elements have been adequately developed. At the present state of development, all regions and GSRT have already shaped their approaches for the ex-ante assessment of priorities. On the contrary, the monitoring and evaluation system including the organisation, the set of indicators, the evaluation scope and objectives are still only broadly defined.

In order to facilitate the entrepreneurial discovery, GSRT and the European Commission have agreed that the selected priorities will be first tested with pilot calls before the full scale implementation of the R&D and innovation measures. The pilot measures could be launched after September 2014 and it is expected that they be evaluated by March 2015. The aspects which are going to be evaluated

include the impact of the selected priorities and policy mix on stimulating private R&D and innovation investments, as well as the effectiveness of the implementation processes, especially the consultation with business community and other stakeholders. The results of the evaluation will validate the priorities and allow for a better focus of the public support if necessary. By June 2016 efficient processes of entrepreneurial discovery should be in place.

In the following section the main elements of the monitoring and evaluation system, which is under development in Greek regions and at national level, is described.

4.1. The governance and monitoring system

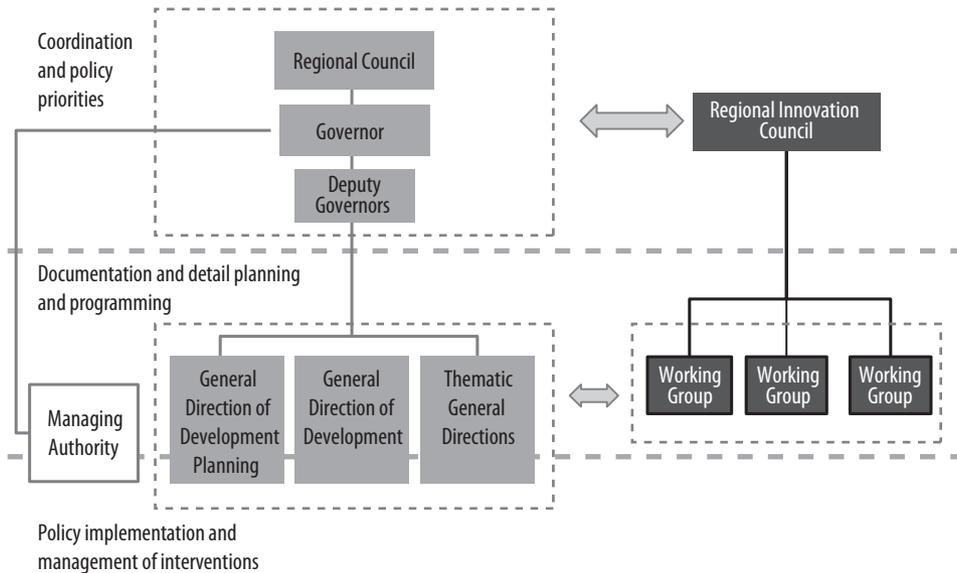
In order to establish an effective monitoring and evaluation system, the design of an adequate governance system is necessary. According to the ESIF regulations, the implementation of an operational programme is monitored by its Managing Authority (MA). In the Greek regions, the MA will report directly to the governor of the region, while the MA of the horizontal operational programme supporting R&D and innovation at the national level (EPANEK) will be established as an independent unit within the Ministry of Development. At the policy level, decisions will be taken by the Monitoring Committee consisting of the main stakeholders. While this governance structure could be sufficient for the monitoring and administration of an operational programme, it is inadequate for a smart specialisation strategy. For the latter, flexibility in policy making, continuous engagement of entrepreneurs, evidence-based monitoring and evaluation, and timely-feed back into policy design is necessary. In order for Greek regions to meet these requirements, DG Reggio and a team of experts (Reid et al, 2013) have suggested the creation of an Innovation Council, which would be an advisory body to the Regional Council and to the Governor, in each region. They also recommended that policy design and revision could be supported by working groups that will remain active during the entire programming period. This governance structure is also relevant for the national level as well.

Due to the lack of experience of regions in policy making, especially for issues related to R&D and innovation, the building of a governance system with the above characteristics remains a major challenge. As has already been mentioned, until today the design of the regional operational programmes and of the specific measures was undertaken by the Managing Authority of the programme, a unit which was and continues to be independent from regions' administration. However, this could be no viable option any more as the active participation of region's administration in the design and review of smart specialisation strategy and of the regional operational programme is becoming increasingly important.

At the current level of development of the smart specialisation strategies and of the operational programmes, governance issues have been only roughly addressed. A model of three layers (see Figure 1), namely: policy making and coordination, detailed design and documentation, and implementation and administration, is being considered by some regions (e.g. Notio Aigeo, Sterea Ellada, Ionia, Epirus). The main elements of the system are:

- A region's administrative units are actively engaged in both layers of detailed design and implementation of the policy, in line with their competencies and mandates.
- An advisory structure is established, consisting of the Innovation Council at the layer of policy making and coordination, and by permanent working groups, in correspondence with the priorities of the strategy, at the layer of the detailed design and documentation.
- The Managing Authority is in charge of the implementation of the strategy and of the regional operational programme and retains a significant role in the documentation of policy, as according to the EISF regulations monitoring and evaluation activities are among its competencies.

Figure 1: GOVERNANCE OF SMART SPECIALISATION STRATEGY IN GREEK REGIONS.



Today, almost all regions have informally established Innovation Councils, although not all of them have systematically engaged the Councils in the design of the smart specialisation strategy. The remainder of the structure is still under consideration and final decisions will be made as soon as the new governors, which have been elected on the 25th of May, take office.

Before the end of the year, it is expected that there will be the development of a more formal system, following the anticipated approval by the Parliament of the new law for Research and Technology. In the new system, the informal Innovation Councils will be replaced by the formal Regional Scientific Councils (RSCs), which will act as advisory bodies not only to the regions' governors, but to the General Secretary of GSRT as well as facilitating the coordination between the regional and the national levels. At the national level, GSRT's Innovation Platforms will be the think tanks for the documentation and detailed design of the policy, which is responsibility of GSRT. Within the same governance layer, an "Innovation Network" comprised by representatives of GSRT, the regions and the Ministry of Development, will support GSRT and regions to coordinate the design of the policy mix and to monitor the implementation.

4.2. Ex-ante evaluation of priorities

The responsibility for the implementation of the ex-ante assessment in the regions is laid on the Intermediate Managing Authorities of the relevant Regional Operational Programmes. At the national level, GSRT undertook this task.

The approaches for ex-ante assessment of the priorities used by the regions and GSRT, although varying in their details, share some common core elements. All regions started their investigation from major sectors or broad economic areas, and through an elimination process, arrived at more narrowly defined economic activities where existing competitive advantages could be further strengthened or new ones could be built. A similar approach was followed by GSRT at the national level. The recommendations of an expert group assigned by DG Region in 2012 (Reid et al, 2012) for assisting the regions to prepare their smart specialisation strategies contributed significantly in the shaping of this common approach.

4.2.1. The identification of priorities in the regions

Identification of innovation potential was based, on the one hand, on the analysis of the economic characteristics of the regions and the identification of areas with a critical mass of business activity. On the other hand the research capacity of the regions was analysed and technological areas with economic

potential and accumulated local capabilities, mainly in the local public research organisations, were identified.

The significant limitations in the regional and national statistics did not allow a thorough analysis of regions' capabilities and capacity. Thus, the emphasis was given more on qualitative approaches using expert judgment and stakeholders opinion. The main challenge, especially for the regions, was the involvement of the business community, which faced the whole process with some hesitation or even indifference. The methods used for engaging stakeholders included surveys, workshops, working groups, round tables and collective bodies.

The first step in selecting the broad economic areas has been based on a combination of data analysis, bibliographic analysis and qualitative assessment. In the regions of Sterea Ellada and Notio Aigeo, the initial selection was validated in an open workshop followed by a targeted survey addressing the main stakeholders, with particular emphasis given on the business community. In the regions of Thessalia, Criti, Epiros, Ditiki Ellada and Ionion, the preliminary selection decision was validated by Innovation Councils or similar collective bodies established especially for their contribution to the design and implementation of the smart specialisation strategy.

The approaches used for the elimination process varied. Thessaly and Crete utilised the most structured approach by creating working groups under the direction of the Innovation Council. Sterea Ellada and Notio Aigeo used thematic round tables followed by focused interviews with specific stakeholders. The region of Ionion organised thematic workshops on each one of the seven islands. Regions such as Ditiki Ellada, and Anatoliki Makedonia were based mainly on interviews and bilateral meetings.

In all regions, selected priorities were finally validated through an open consultation, followed by the approval of the Innovation Council and of the Regional Council, which is the higher governance body in a region.

4.2.2. Priority setting in the national smart specialisation strategy

GSRT has articulated a well structured approach for selecting priorities, by combining a solid analytical base supported by studies performed during the period 2010-2013, and supplemented through the use of a systematic consultation with stakeholders and companies.

Although the studies were not commissioned by GSRT, all of them were aiming at identifying economic activities and technological areas where Greece could build a competitive advantage.

On that basis, and through the implementation of the recommendations of DG Regio's expert group whose studies offer a suitable base for starting the elimination process (Reid, 2013), GSRT selected eight priority sectors and economic areas. For each priority, an "Innovation Platform" has been created aiming at mobilising entrepreneurs, research organisations and other stockholders in order to identify activities with innovation potential. Members of the platforms are entrepreneurs, representatives of business associations, researchers, academics, and other stakeholders. Within platforms covering broad areas (e.g. Agri-food) working groups focusing on narrower areas have been set up. Each platform produced a list of specific priority activities:

- Where Greek companies could be globally competitive; and
- have a greater potential to contribute to value-added.

The national priorities are then aligned with the regional ones in order to avoid duplication and better coordinate the interventions.

4.3. Monitoring and evaluation

The monitoring system aims at verifying that the funding is allocated correctly and used for delivering the planned outputs, and that the result indicators move in the desired direction. As the regional and national strategies are in the process of development, only the main elements of the system can be described at the present stage.

The information for the measurement of the output indicators will be collected at the level of projects and it will feed a central Management Information System which can produce indicators at any desired level (specific regions, investment priorities or specific objectives).

The result indicators include two sub-sets:

- **Core indicators:** A rather small set of indicators measuring basic aspects of the innovation system at the regional and national level e.g. GERD, BERD, business financing BERD, and human resources related indicators. The indicators measure long-term changes, and can be utilised for benchmarking with European countries and regions. The use of these indicators should be accompanied by an impact evaluation in order to assess the actual contribution of the supported activities to the changes in the value of the indicators.
- **Indicators of specialisation:** They measure the changes in the priority areas by focusing exclusively on the potential beneficiaries in those areas. Their

measurement is rather complex, as the target population of the official statistics do not coincide with those of the priority areas. Therefore the implementation of ad-hoc surveys is necessary.

The evaluation of the national or a regional strategy aims at investigating:

- The strategy's contribution in achieving the immediate and long term results measured by the two sets of result indicators (attribution);
- Whether the objectives of the strategy have been met;
- The opponents of the supported activities;
- The behavioural additionally, and
- The effectiveness of the entrepreneurial discovery processes, as well as the simplicity and efficiency of the management system.

Both monitoring and evaluation results will be used for taking decisions regarding the continuation of the support to the selected priority areas, or the redirection to new priorities and policy mixes.

The collection of information for the calculation of output indicators is expected to be done by the managing authorities of the operational programs, while the measurement of the result indicators are going to be subcontracted. Following past practices, both monitoring reports and evaluation studies are expected to be subcontracted to external independent experts.

5. Conclusions

Despite the fact that the Greek regions and GSRT started rather late in their preparation of the smart specialisation strategy, they have made significant progress. The monitoring and evaluation system is among the least developed elements of their strategy, a fact that it is not surprising given the lack of experience in this domain.

GSRT retains a co-ordinating role in the articulation of the strategy, and given its responsibilities regarding policy making on R&D and innovation, it could also take the initiative in further elaborating the evaluation framework for both the regional and national level and set common standards and quality criteria.

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This book outlines the efforts that have been made to strengthen the RTDI evaluation culture in South East Europe, and discusses possible future options to continue this mission. It presents the tangible evidence of the progress made by the EVAL-INNO project, and also provides insight into the trends of current RTDI evaluation.

In the first part of the publication, the reader will be introduced to the topic with an exhaustive comparative study on the contemporary evaluation culture in the 6 project countries. The second part of the publication presents the achievements of the EVAL-INNO project, including: the RTDI Evaluation Standards; the EVAL-INNO Evaluation Platform; the capacity-building trainings; the pilot benchmarking of RTDI public research organisations, and the pilot programme evaluations. This part concludes with a discussion on the sustainability of the projects results. The third part presents some concrete evaluation examples from the SEE region, prepared by international experts, and which highlight practices that can be referenced in the design and implementation of future evaluations.

We hope that readers interested in RTDI evaluation and in its future impact on the region, including (potential) evaluators, programme owners tendering evaluations and decision-makers involved in programming of RTDI measures, will benefit from the information provided, moreover it should inspire them to establish similar initiatives in future.

EVAL-INNO Lead partner (ZSI)



Fostering Evaluation Competencies
EVAL-INNO
in Research, Technology and
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