Report on Innovation Union and ERA Framework implementation in the Danube Region

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<td>Danube-INCO.NET</td>
<td>Danube Region INCO-NET</td>
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<tr>
<td>DG</td>
<td>Directorate-General of the EC</td>
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<tr>
<td>DoW</td>
<td>Description of Work</td>
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<td>EC</td>
<td>European Commission</td>
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<td>EEN</td>
<td>Enterprise Europe Network</td>
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<tr>
<td>EN(P)I</td>
<td>European Neighbourhood (Policy) Instrument</td>
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<tr>
<td>ERA</td>
<td>European Research Area</td>
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<tr>
<td>ERAC(-GPC)</td>
<td>ERA Committee (“group de la programmation conjointe” - Joint Programming Group)</td>
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<tr>
<td>ESIF / ESI-Funds</td>
<td>European Structural and Investment Funds under the EU’s cohesion policy</td>
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<td>EU</td>
<td>European Union</td>
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<td>EUSDR</td>
<td>EU Strategy for the Danube Region</td>
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<tr>
<td>FP7</td>
<td>Seventh Research Framework Programme</td>
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<tr>
<td>GERD</td>
<td>Gross Expenditure in Research and Development</td>
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<tr>
<td>HEI</td>
<td>Higher Education Institution</td>
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<tr>
<td>H2020</td>
<td>Horizon 2020, the EU Framework Programme for Research and Innovation</td>
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<tr>
<td>IPA</td>
<td>Instrument for Pre-Accession</td>
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<td>IU</td>
<td>Innovation Union</td>
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<td>JPI</td>
<td>Joint Programming Initiative</td>
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<td>JRC</td>
<td>Joint Research Centre, Directory-General of the European Commission</td>
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<td>NCP</td>
<td>National Contact Point for H2020</td>
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<tr>
<td>PA</td>
<td>Priority Area (of the EUSDR)</td>
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<td>PSF</td>
<td>Policy Support Facility under Horizon 2020</td>
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<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
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<td>R&amp;I</td>
<td>Research and Innovation</td>
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<tr>
<td>RIS3</td>
<td>Research and innovation strategies for smart specialisation; ex ante conditionality for thematic objective 1 “research, technological development and innovation” of the ESI-Funds</td>
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<tr>
<td>RPBF</td>
<td>Research-Performance-based funding</td>
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<td>RPO</td>
<td>Research-Performing Organisation</td>
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<td>RTO</td>
<td>Research and Technology Organisation</td>
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<td>S3 (Platform)</td>
<td>Platform of the JRC for smart specialisation (RIS3)</td>
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<td>SEWP</td>
<td>Spreading Excellence and Widening Participation (specific objective of H2020)</td>
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<td>SRA</td>
<td>Strategic Research Agenda (of a JPI)</td>
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<tr>
<td>TAIEX</td>
<td>Technical Assistance and Information Exchange instrument of the European Commission</td>
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2 Executive Summary

The Danube-INCO.NET project supports the implementation of the EU Strategy for the Danube Region (EUSDR), particularly its Priority Areas ‘Knowledge Society’ (PA7) and ‘Competitiveness’ (PA8). The bi-regional policy dialogue is a core activity to transfer of good practice in implementing key EU policy frameworks for research and innovation, namely the Innovation Union (IU) and the European Research Area (ERA). Three workshops were held in the non-EU Member States Serbia, Ukraine and Moldova, each focussing on a set of topics related to the ERA and the IU selected based on priorities in the host countries and the Danube region at large.

The overarching goal of this report is to raise awareness of - and help the region and individual countries to take steps towards - better implementation of the IU and ERA goals and processes. This is done by presenting the results of the above-mentioned policy dialogue workshops carried out between 2014 and 2016. A specific focus of the dialogue lies on addressing the challenges faced by non-EU Member States in living up to the standards and goals of the IU and ERA, hence the majority of the recommendations target those countries.

Key issues and recommendations

1. Joint Programming and cooperation of European research infrastructures (Workshop 1)

The aim of Joint Programming is to pool national public R&D resources in Europe and tackle European challenges in key areas. The 1st ERA Progress Report (September 2013) assessed progress made by stakeholders of the national research systems towards the following objectives:

- Ensure mutual recognition of evaluations meeting international peer-review standards as a basis for national funding decisions;
- Remove legal and other barriers to cross-border interoperability of national programmes to permit joint financing of actions, including with non-EU countries;
- Confirm financial commitments for the construction and operation of research infrastructures (ESFRI, global, national, regional) through national roadmaps and using ESIF;
- Remove legal and other barriers to cross-border access to Research Infrastructures.

The conclusions adopted by the Competitiveness Council on 21 February 2014 considered two issues relevant to the workshop scope as particularly important for the ERA roadmap at European level, namely making progress with the ESFRI roadmap to prioritise projects and, aligning national strategies and research programmes with the Joint Programming Initiatives to cope with major societal challenges and improve the interoperability between national programmes.


Danube countries are involved in all 10 JPI’s run in 2014, with Moldova being the only non-EU Member State participating in JPI’s (research on water and cultural heritage/climate change). The current challenge for the JPIs is the effective implementation of the Strategic Research Agenda’s (SRAs) through joint activities, and the alignment of funding at national and European level.
The communication “Research and innovation as sources of renewed growth” of the European Commission (2013) underlines that research infrastructure investments should form an integral part of an overarching R&I strategy of a country. It should be steered at a high political level, since R&I affect many policy areas and involve a large number of actors. Strategy development and policy making should take account of long-term impacts of R&I, requiring a stable strategic framework and forward-planning of public investment.

### Key recommendations

1. **Enhance the political will for common priority-setting** as a major challenge in times of austerity. While the EUSDR generated many bottom-up projects initiated by the science and innovation community, a more streamlined, strategic approach to common research issues relevant for and specific to the Danube Region is needed.

2. **Identify the added value of cooperation for each national research system** deriving from a joint activity in the Danube Region. Here the approach of variable geometry is a key, since not all countries need to join all activities but should select those with the greatest added value for the individual country or the Danube region as a whole (i.e. the greater common good).

3. **Address problems of technical compatibility of national or regional research and funding systems** often caused by (in-)compatible timelines, budgeting (reserving national funds for joint actions) and different rules governing the funding mechanisms.

4. **Exploit synergies within the policy mix**, including IPA and ENI for capacity-building activities, ESIF for financing (e.g. infrastructure), Horizon 2020 for opening up existing national and regional research infrastructures of European interest to new users while adapting existing models like ScienceLink.

### 2. Participation in Horizon 2020

Horizon 2020 – and previously FP 7 – are essential funding schemes for increased cross-border cooperation in the Danube Region. Although no Danube-specific topics are launched, Danube Region consortia can compete on equal terms with other consortia for project funding. FP7 data suggest that 18% of the project coordinators and 22% of the project participants come from the Danube Region. The funding received makes up around 21% of total funding approved.

The participation and success of the EUSDR countries is, however, quite diverse: Rankings feature Germany, Austria, Hungary and the Czech Republic as the top 4 countries in all three categories, while Bosnia and Herzegovina, Moldavia, Montenegro and the Ukraine are among the bottom 4 countries. While the size of a country does play a role in the ranking, there is also a positive correlation with the country’s respective R&I intensity and performance.

A better integration of the EUSDR countries into Horizon 2020 requires efforts to reforming national R&I systems in line with ERA priorities and targets, including optimizing the national contact point and support system for potential Horizon 2020 applicants. The annual cycle of economic policy coordination called the ‘European Semester’ set up in the EU involves country-specific recommendations on structural reforms in EU Member States, including R&I aspects, for the next 12-18 months. Since only EU Member States are subject to regular and comprehensive recommendations, non-EU Member States possess limited capacity and analytical bases for policy development. Better and systematic integration of all EUSDR countries into those processes (e.g.}
inclusion into ERAC, monitoring the performance in the Innovation Union Scoreboard etc.) could pave the way for a more balanced development of the region.

Key recommendations

1. **Policy level**: non-EU governments should: make determined efforts to getting actively involved in all relevant EU committees (e.g. ERA) and initiatives (e.g. S3 Platform peer reviews) influencing R&I roadmapping and other processes; participate in monitoring exercises, e.g. Innovation Union Indicators, and Mutual Learning Exercises (e.g. PSF); set up an EU-compatible data system; exploit available EU funds (ESIF, IPA, ENI) to assist the reform of R&I systems, including Teaming, Twinning and ERA Chairs under H2020 for building capacity in administration and science management.

2. **Institutional level**: the NCP support structure should be tailored to the national research system, recognising national competences, structures or capacities, ensuring access to H2020 for all types of targeted stakeholders, deploying existing models from other countries; this may involve a concentration of resources (i.e. staffing) on particular national strengths or challenges; ensure interfaces between the strategic policy level (Programme Committee delegates), NCP’s and beneficiaries; provide for NCP’s participation in the European NCP networks, in particular the NCP Academy providing training for NCPs to meet quality standards and access good practice; promote integrated support services through liaison between NCP’s and e.g. the EEN.

3. **Stakeholder level**: establish support services for SME’s that are swift, reliable and to-the-point hence tailored to their competitive environment, communication culture and framework conditions (e.g. state aid and accounting rules); government-to-business relations should be promoted to engage SME’s in the development of R&I strategies (beyond formal consultation) thus making strategic choices considering target markets, sector demands and specific strengths and gaps; business-to-science linkages should be facilitated within R&I and cluster policies, e.g. through H2020 NCP’s and the EEN, supported through technology transfer platforms, centres or spin-offs, potentially part-financed from ESIF in EU countries, or IPA/ENPI in non-EU countries; limited resources in a R&I support system should be concentrated at a few promising areas or “gazelles” as opposed to organising big information events.

3. **Performance-based research and innovation funding**

A key ambition of promoting effective national research systems (ERA priority 1) is that these systems can cooperate more effectively with one another and establish stronger external networks, so that Europe can become more attractive to excellent international talent as a whole.

The underlying rationale for establishing research performance-based funding (RPBF) systems ranges from improving research cultures and facilitating institutional change to increasing the research performance overall. It involves considerations to maximize the **effectiveness** (relevance, quality etc.) and **efficiency** (cost-benefit-ratio etc.) of public spending on research by

1) providing incentives for improving research performance, e.g. through a suitable share of competitive funding allocated to projects, and

2) concentrating resources in the best performing organisations, which includes a suitable level of organizational funding in order to secure continuity of research efforts in strategic fields.
**RPBF systems vary considerably between countries.** Differences include the share of RPBF-allocated organisational level funding, the speed of introducing such a system, the degree of stakeholder involvement, the impact of different systems on the autonomy of research, the criteria for assessing research outputs and, other missions and behaviours the government wants to promote in research organisations. The latest JRC Science for Policy Report “Research Performance Based Funding Systems: a Comparative Assessment” illustrates the problem of reliable, comprehensive and comparative data even in EU Member States.

**In the Danube Region, RPBF is used to a limited extent in the region.** According to the JRC study,

- Bulgaria, Hungary, Romania and Slovenia feature no significant elements of performance-based funding introduced in their research systems;
- Austria, Germany only use them to a limited extent;
- while the Czech Republic, Croatia and Slovakia partly use a quantitative formula with bibliometric assessment within their research funding system;
- no information is available for the other countries (Bosnia and Herzegovina, Montenegro, Moldavia, Serbia and Ukraine).

### Key recommendations

1. **System-learning through current practice exchange and an evolutionary approach**
   
   - RPBF mechanisms should be considered in a reform agenda; evidence suggests benefits in terms of increased research excellence, better meeting of strategic goals, effective steering of RPO’s behaviour, concentrating resources on the best-performers, creating critical mass for excellent scientific output and societal and economic impact;
   - There is a perceived need in many Danube countries for expanding the evaluation culture in order to challenge the existing resistance to change, based on analytical evidence and merit-based, independent and transparent assessment procedures;
   - There is no “one-size-fits-all” solution; countries should consider current practice elsewhere and tailor reforms to national specificities and levels of ambition, while it is easier to implement RPBF mechanisms in a period of increasing R&I funding levels;
   - A functioning RPBF system would feature different assessment methodologies applicable to different kinds of organisations in a certain sector of the national R&I system (universities, public RTO’s), in order to account for differences in their nature and mission;
   - The introduction of a RPBF system requires a clear strategy backed at a high political level;
   - A gradual introduction of a RPBF system seems the most prudent approach initially involving small shares of funding, in order to avoid negative shocks to the science system, supported by a continuous re-engineering process allowing for a flexible adaptation to changing realities (level of funding, thematic priorities, researchers’ capacity, infrastructure, equipment, or success in attracting competitive funding etc.).

2. **Mix of qualitative and quantitative indicators**
   
   - Indicators chosen should be simple for researchers and research administrators and at the same time relevant for reflecting the quality of scientific performance; although the indicator system should be tested and consulted with the units to be evaluated during its development, it needs flexibility to balance different objectives and allow for system-learning;
   - Metrics-informed (international) peer-review seems to be a favourable methodology on which to base investment decisions, as it human expertise with quantitative (objective) indicators and criteria;
Qualitative and quantitative indicators should be combined to reflect both internationally recognised quality standards and national/regional or local impact; the first allows for international benchmarking and can accelerate the reputation being built-up; for less R&I-competitive countries participating in H2020, participation intensity is a useful indicator of the quality of research to be included.

3. Networking and collaboration
- The large variation of tools and methods for allocating public research funding suggests the need for more intensive exchange of experience in order to build a more robust body of knowledge of current reform practices, thus informing mutual learning;
- Danube countries participating in H2020 should promote a wide use of the funding schemes available to induce structural reforms based on collaboration with experienced partners (i.e. Teaming, Twinning, ERA Chairs) and mutual learning (i.e. PSF);
- The non-EU MS Danube countries may use the European Neighbourhood Policy Twinning and TAIEX technical assistance instruments as well as IPA funds in order to foster their capacities in the area of S&T policies, including RPBF;
- The effects and impact of a RPBF system should be monitored constantly; here the role of regional collaboration, by involving foreign experts from the region, should be foreseen in order to allow for comparative perspectives on the functionality of the R&I system.

Conclusions

The series of policy recommendations for non-EU Member States have been developed to inspire systemic and structural reforms in the R&I policies and systems, particularly in the non-EU Danube countries. In this light, a common feature of the three topic areas covered during the workshop series is that they addressed questions regarding the effective design, influence and implementation of R&I policy around three prevailing aspects regarding research and innovation:

- Strategy-building (longer-term vision considering roles of the quadruple helix of government/administration, research, industry and business, and civil society actors),
- Governance models (interaction of stakeholders with a key role in specific R&I processes), and
- System design (institutional and procedural arrangements and funding systems meeting international (ERA) standards and ensuring compatibility with EU funds and other countries’ R&I systems, respectively).

According to the participants and stakeholders taking note of the results, the following recommendations are particularly relevant in that they are likely to be implemented or at least addressed, depending on the individual country:

- Enhancing the political will for common priority setting between countries;
- launching political initiatives and communication measures or lobbying for non-EU countries to accessing the main concepts of European R&I policy like ERA, the Innovation Union or Smart Specialisation;
- making more and strategic use of existing instruments supporting structural change of R&I systems, first and foremost the H2020 instruments Teaming, Twinning, ERA Chairs and the policy support facility (PSF), but also IPA and EN(P)I or TAIEX;
• encouraging a more intense exchange of current practices, while adapting them effectively to the national specifics;
• developing strategies and systems with a long-term perspective by incremental evolutionary approaches.

The format and methodology of the dialogue proved to be well-suited to yield relevant results worth to be followed-up. The success factors of the policy dialogue can be summarized as follows:

• Authorities of the respective countries are active partners rather than mere recipients of capacity building measures;
• specific topics of relevance for the countries are pre-determined via a survey among stakeholders (decision-makers, sponsors such as agencies, and the R&I community such as RTO’s, HEI’s and business associations);
• events are located in the target countries to reach out to the local R&I communities;
• preparatory discussion papers are key to create a common understanding of the topic areas;
• a balanced mix of experienced and less-experienced countries is a key pre-condition to foster the exchange of expertise involved in the exercises;
• the consultation of the participants and the wider communities ensures the relevance of the outcomes and a sense of ownership and commitment;
• the dissemination of the outcomes is organized through national stakeholders to address policy makers and managers, which increases the likelihood of measures conceived and implemented in the target countries for follow-up, rolling-out, upscaling, or piloting.

Outlook

The recommendations were tailored to inspire further activities beyond the project’s lifetime. As the follow-on activities planned or on their way illustrate, there is scope for the policy dialogue to create real impact.

In addition, the results strongly suggest the need to continue and step-up bi-regional dialogues particularly in light of the persisting innovation divide in Europe. Following the experience and outcomes of the Danube-INCO.NET project at large, a number of project partners argue in a paper to be discussed in the strategic configuration of the Horizon 2020 Programme Committee – and considered for the work programmes covering the period 2018-2020 – that bi-regional or macro-region-focused capacity building activities should be continued under Horizon 2020 and adapted so as to effectively address the current challenges in Europe.
3 Introduction
The Danube-INCO.NET project is a strategic high-level coordination and support action supporting the implementation of the EU Strategy for the Danube Region (EUSDR) and its Priority Areas ‘Knowledge Society’ (PA7) and ‘Competitiveness’ (PA8).

The bi-regional dialogue facilitated by the project is a core activity geared towards the transfer of good practice in the implementation of the key policy frameworks for research and innovation in the European Union, namely the Innovation Union (IU) flagship initiative of the Europe 2020 strategy and the European Research Area (ERA) framework.

This task thus promoted the state-of-the-art ERA principles for excellent research and the delivery of the IU across the whole Danube Region by monitoring progress and results and strengthening the structural aspects related to the IU and ERA, particularly in the enlargement and non-EU MS countries involved. It discussed the connection between ERA and the EU policies specifically targeting the region, including enlargement and neighbourhood policies as well as regional policy, Horizon 2020 and other EU policies and programmes aimed at increasing the R&I capacity in the whole region.

The underlying rationale of this task is that exchanging views between policy-makers and relevant stakeholders from EU Member States and non-EU countries will facilitate the identification of structural deficits in the national research and innovation (R&I) systems. These have been addressed, while unlocking the potential deriving from closer cooperation to create a common ground and a shared vision for research and innovation policy in the Danube region as a whole.

Thus, the activity supports the catching-up processes of less-performing countries in R&I in order to close the research and innovation divide in the Danube region, which is threatening the cohesion of Europe. To achieve these goals, a series of three workshops were held in different non-EU Member States, i.e. Serbia, Ukraine and Moldova, focussing on a coherent set of topics related to ERA priorities and IU commitments of particular relevance to the hosting countries and the Danube region at large.

The topic areas addressed were:

1. Optimal transnational co-operation and competition: Jointly addressing grand challenges (ERA Priority 2), including through joint establishment, operation and use of European Research Infrastructures (IU Commitment 5); workshop held in Belgrade, Serbia, on 10 July 2014;
2. European Research and Innovation Programmes: fostering the participation of Danube region stakeholders in Horizon2020 (IU commitment 6) with a special focus on SMEs (IU commitment 7); workshop held in Kiev, Ukraine, on 23 April 2015;
3. Performance-based research funding – towards more effective national research and innovation systems in the Danube region (ERA Priority 1); workshop held in Chisinau, Republic of Moldova, on 23 June 2016.
This report presents the results of the work undertaken, its methodology and recommendations. It enables the targeted reader groups – decision-makers in governmental administrations, research managers and researchers in research and technology organisations and higher education institutions, and other stakeholders carrying out research and innovation activities – to make use of the policy recommendations towards developing respective policies in the Danube countries. Its goal is to raise awareness of – and help the region and individual countries to take steps towards – better implementation of the IU and ERA processes and objectives.

4 Methodology

For the policy dialogue to be relevant, focussed and specific, a mix of methods was deployed to enable partners and stakeholders to influencing the overall agenda of the task. This included a survey among project partners to identify priority topics, desk research to collate the state-of-play in the three topic areas and create an equal level of information reflected in corresponding discussion papers, interactive working sessions facilitating the sharing of information and experience and promoting creative thinking, ex-post evaluations of the workshop results in order to validate the relevance of the jointly elaborated recommendations and targeted dissemination through country-specific channels as well as to European-level stakeholders. The state-of-play outlined in the chapters 5.1, 6.1 and 7.1 mirrors the situation at the time of drafting of the respective discussion papers.

4.1 Survey: identifying priorities

Both policy frameworks, the European Research Area framework and the Innovation Union flagship initiative are comprehensive in scope, thus spanning virtually all aspects of European research and innovation policy. To serve best the purpose of Danube-INCO.Net, that is, addressing the innovation divide within the Danube region between the partner countries upstream\(^1\) and downstream\(^2\), a survey (survey questionnaire, see annexe I) was launched identifying the most relevant topic areas. Nine out of 13 partner countries responded to the questionnaire (69%), however including all non-EU countries. The survey revealed the issues and priorities of common interest in the Danube region, as mentioned in chapter 3, particularly focussing on the countries representing the non-EU perspective and hosting the three workshops (Serbia, Ukraine and Moldova).

4.2 Discussion papers: setting the scene

The scope of each topic area was elaborated by the task leader in cooperation with the host country of each workshop and other project partners and framed by a discussion paper (cf. sections 5.2, 6.2 and 7.2) prepared prior to each event. The aim of the discussion papers was to establish a common point of departure by setting-the-scene and building a common knowledge base on the topic.

To this end, the papers outline the wide scope of the policy development in the respective topic area and include references to the most recent and relevant policy documents, describing the current state-of-progress in the political and implementation processes, as well as examples of country-specific strategies and implementation frameworks. Their contents are based on desk research and include statistical analysis of data and qualitative appraisal of policy documents such as reports and communications.

\(^1\) mainly southern Germany and Austria

\(^2\) Hungary, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Republic of Moldova, Romania, Serbia, Slovakia, Slovenia and Ukraine
While there is a wealth of knowledge and information on the state of progress towards the specific priorities of the ERA framework and the Innovation Union – from reports to studies to country- or region-specific recommendations – the challenge was to draw relevant conclusions as to what possible remedies to prioritise by the Danube-INCO.Net partners and to consider whether the benefits outweigh the costs of changing long-lived traditions, i.e. in terms of funding research, cooperating across borders, managing research infrastructures etc.

To reach meaningful results in this respect, the discussion papers conclude with a list of key guiding questions, which were expected to be addressed by the participants during the workshops. In this way, the results (i.e. the policy recommendations, see below) reflect the most relevant aspects to be addressed by the stakeholders in the Danube region at different levels.

4.3 Workshops: generating ideas – mobilising stakeholders

The concepts for the workshop have been tailored to the specific nature of the individual topic areas, the mix and level of knowledge of the target groups using state-of-the-art methods promoting active engagement, the transfer of knowledge, the creation of ideas and generating ownership and commitment. The workshop designs thus featured a mix of input and interactive formats, while involving key players already during preparation.

The composition of participants was made in very close cooperation with the organisers of the host country and based on a careful selection of persons considering specific criteria, including the relevance of individual expertise, the capacity to influence the agenda in their home country (i.e. considering the type of stakeholder identified as a target group) and, the balance of representation per country (group), e.g. EU vs. non-EU-country, number of participants per country. Stakeholders and experts were involved using the `snowballing technique`, i.e. by addressing national organisations and associations through project partners.

4.4 Policy recommendations: validating meaningful results

The policy recommendations were drafted based on the outcomes of each workshop. In order for the results to be meaningful and relevant hence maximising the likelihood of their take-up and implementation, the recommendations have been made subject to a consultation among project and task partners (including especially policy-maker representatives) as well as all participants present at the events. When giving comments, the following questions had been put forward to the stakeholders consulted for consideration:

1. Do the recommendations reflect the workshop discussions and outcome?
2. Are the recommendations relevant for the Danube policy dialogue on ERA and IU?
3. If you would want to delete one or several recommendations, which one(s) would this be and for what reason (e.g. unlikely to be followed-up /implemented in your country...)?
4. Please highlight the three recommendations most relevant to your country. Is this your personal opinion or based on a national position?
5. Please highlight the three recommendations most likely to be followed-up or implemented in your country”. (personal opinion)
4.5 Dissemination: maximising impact

The policy recommendations elaborated during the task have been widely disseminated according to the dissemination plans, each of which was tailored to the specific target groups of the respective topic.

Besides publishing the discussion papers and policy recommendations on the project website\(^3\) and other web portals maintained by project partner organisations, national stakeholders in the Danube region and European networks, the outcomes have been communicated on a number of occasions to the target audience: research organisations and higher education institutions, policy makers, public administrations, management agencies and project partners.

The dissemination activities are still ongoing at the time of publishing of this report, in order for the effects to be scaled-up and to create follow-up activities. However, the results of the policy dialogue already unfold their potential to creating tangible impact by informing position papers e.g. in negotiations or giving impetus for action of national governments and administrations as well as European institutions: the work in this task was the main source of inspiration for the input paper „Spreading Excellence and Widening participation – suggested activities for the Work Programme 2018-2020“ as an output of the policy dialogue work package. It was circulated among all H2020 programme committee members (strategic configuration) and a STOA\(^4\) project of the European Parliament was made aware of the proposed options. The Ukrainian partners envisaged feeding the policy recommendations on “promoting the participation of national R&I actors in Horizon 2020, particularly SME’s”, translated into local language, to national decision-makers for consideration during cabinet sessions.

A record of selected dissemination activities is provided in Annexe V.

5 Joint Programming and cooperation of European research infrastructures (Workshop 1)

Based on the outcome of the survey among all Danube-INCO.Net partners on the scope of the dialogue on “Innovation Union and ERA in the Danube Region”, the first dialogue addressed a multifaceted subject area specifically identified as a priority by the project partner countries: **Optimal transnational co-operation and competition: Jointly addressing grand challenges (ERA Priority 2), including through the joint establishment, operation and transnational use of national and European research infrastructures (IU Commitment 5).** The priority involves efforts to implementing joint research agendas addressing grand challenges, sharing information about activities in common priority areas, and ensuring that adequate national funding is committed and mutually interoperable.

The first policy dialogue workshop in Belgrade, Serbia, on 10 July 2014 addressed the potential of ‘transnational cooperation of national programmes and research infrastructures in the Danube region’. The specific objectives were to: analyse the state of progress in both EU countries and in non-EU countries regarding transnational cooperation of national programmes in the Danube region; discuss key issues from the national perspectives, focussing on Serbia as the host country and leading

\(^3\) [https://danube-inco.net/](https://danube-inco.net/)
\(^4\) Science and Technology Options Assessment
on the workshop theme, and; identifying measures to be recommended for enhancing progress in the Danube region, particularly in the non-EU countries.

5.1 Aim and scope
The overall aim of the Joint Programming process as described in priority 2 of the ERA framework is to pool national research efforts in order to make better use of Europe's precious public R&D resources and to tackle common European challenges more effectively in a few key areas.5 These aims are mirrored in the Innovation Union (Commitment 4) by addressing the European Research Area Communication, seeking to improve the cross-border operation of research performing organisations, funding agencies and foundations, including by ensuring simplicity and mutual coherence of funding rules and procedures6. This commitment (commitment 4.2) also embraces the objective of opening Member State operated research infrastructures to the full European user community, while IU commitment 5 construction promotes the construction of the priority European research infrastructures currently identified by the European Strategy Forum for Research Infrastructures (ESFRI); the Member States are invited to review their ESIF Operational Programmes to facilitate the use of cohesion policy money for this purpose.

5.2 State-of-play and key issues relevant for the policy dialogue in the Danube region context
The 1st ERA Progress Report7 published in September 2013 is a comprehensive snapshot of the progress made by stakeholders of the national research systems - thus research performing and research funding organisations, in the five priority areas of ERA. The report provides, for the first time, comparable data, validated by Member States, to substantiate discussions and direct future policy initiatives. It reveals progress made while highlighting areas where further work is needed. For priority 2 “transnational cooperation / joint programming”8, it assesses progress towards the following objectives:

- Ensure mutual recognition of evaluations that conform to international peer-review standards as a basis for national funding decisions;
- Remove legal and other barriers to the cross-border interoperability of national programmes to permit joint financing of actions including cooperation with non-EU countries where relevant;
- Confirm financial commitments for the construction and operation of ESFRI, global, national and regional RIs of pan-European interest, particularly when developing national roadmaps and the next Structural Fund programmes;
- Remove legal and other barriers to cross-border access to Research Infrastructures.

The report is based on and accompanied by national reports and country-specific recommendations9, while the Research and Innovation Observatory – Horizon 2020 Policy Support Facility10 maintains a large repository of information relating to R&I policies. The 2013 report will be updated and further refined by the ERA Progress Report 2014 due to be released in the autumn 2014.

5 http://ec.europa.eu/research/era/what-joint-programming_en.html
6 http://ec.europa.eu/research/innovation-union/index_en.cfm?page=action-points&view=all
7 http://ec.europa.eu/research/era/eraprogress_en.htm
The advancement of the ERA is meant to be a process that is primarily driven by the Member States themselves. Therefore, ownership for delivering on the aims of the ERA is shared with Member States and the Stakeholder Organisations that have signed up to the ERA Platform. The Stakeholder Organisations\(^{11}\) have compiled their own reports on how their members are working towards realising ERA, providing additional insight from key players that fund and perform research in Europe.

Backed by the Competitiveness Council, there is a firm basis to advance on ERA. In its conclusions adopted on 21 February 2014\(^{12}\), the Council considered two issues that are relevant for the workshop scope as particularly important for the ERA roadmap at European level (to be developed by mid-2015), namely

- taking account of the progress made by ESFRI to fulfil its new mandate and its continuing efforts in order to prioritise the projects of the ESFRI roadmap;
- aligning, where possible, national strategies and research programmes with the strategic research agendas developed within the Joint Programming Initiatives to cope with major societal challenges and improving the interoperability between national programmes to facilitate transnational cooperation and sharing of information about activities in priority areas.

Joint Priority-setting is a key component for undertaking joint research actions. There are a number of initiatives in the Danube region, on the basis of which common topics can be identified, for example in the context of the aims set out in the action plan for Priority Areas 7 (Knowledge Society) and 8 (Competitiveness of Enterprises) of the EU Strategy for the Danube Region (EUSDR), the scientific support activities undertaken by the Joint Research Centre (JRC) of the European Commission (the research nexus or clusters identified), the Ulm process (Ulm Communiqué\(^{13}\)), or the challenges targeted by Danube-INCO.Net itself (for more details on these initiatives, see section below on “Existing building blocks and lessons from previous initiatives for cooperation in the Danube region”). Promoting topics of common interest through joint research actions requires the deployment of joint planning, selection, implementation and reporting mechanisms that allow transnational partnerships to be financed for the benefit of all countries involved. Here, existing models for the lean administration of joint programmes or calls, as discussed, for example by ERAC-GPC (Group de la programmation conjointe – GPC\(^{14}\)) could be used or adapted, based on principles

\(^{11}\) http://ec.europa.eu/research/era/partnership_en.htm
\(^{13}\) Link is no longer accessible.
\(^{14}\) The second Biennial Report of the GPC is currently being prepared and will be published in the autumn. It is based on reports prepared by expert groups on “alignment” and “framework conditions” for Joint Programming that have been established by the GPC. Aspects covered include structural constraints such as incompatibility between national research and innovation systems which may make Member States hesitant about giving firm commitments to team up with other national programmes into “external” schemes, and organisational constraints such as the lack of common principles between MS that are needed to assemble national funding and the design, selection and implementation of cross-border projects and programmes. Section 2.2 of the ERA Framework Communication makes specific recommendations regarding structural and organisational constraints. (http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=2122) The Expert Group agrees with these but considers that the main constraint remains the lack of will at the level of national administrations to re-orientate strategies and research programmes significantly in line with the Strategic Research Agendas (SRA) elaborated for Joint Programming Initiatives (JPI).
such as variable geometry, openness, competition, excellence and transparency. The challenge is to remove barriers for alignment of funds, including, inter alia:

- bottom-up approaches to research funding, making it difficult to identify areas for alignment,
- excellence as THE ultimate priority for funding and other strategic decisions, which does not always lead to alignment,
- lack of coordination at national level on strategic research agenda and funding, and on timing of funding, i.e. if more than one funding agency in one MS is involved,
- incompatible administrative rules, budgeting procedures, eligibility and evaluation criteria, and timing of funding,
- lack of trust and confidence and of building of experience,
- low awareness of the added value of cross-border collaboration.

In 2010, the ERAC-GPC has prepared recommendations in its Voluntary Guidelines on Framework Conditions for Joint Programming in Research\(^\text{15}\), on which current work in the expert groups build.

Key issues to be considered during the development and implementation of joint programming have already been stated by the Council Conclusions “Concerning Joint Programming of Research in Europe in Response to Major Societal Challenges” in 2008\(^\text{16}\):

- a coherent approach on the peer review procedures;
- a coherent approach for foresight activities and for evaluation of joint programmes;
- a coherent approach to funding of cross-border research by national or regional authorities;
- effective measures to ensure the optimum dissemination and use of research findings, inter alia via common practices for the protection, management and sharing of intellectual property rights;
- involvement of the various scientific and, where appropriate, industry communities.

5.2.1 EU opportunities for joint research and innovation activities in the Danube region

Joint Programming Initiatives

The Joint Programming process launched by the Commission in 2008 and adopted by the Competitiveness Council is tailored to pool national research efforts in order to make better use of Europe’s public R&D resources and to tackle common European challenges more effectively in key areas. The High Level Group on Joint Programming (GPC) of the ERAC is mandated to steer the process and identify the themes for possible JPIs.

Danube countries are involved in all 10 currently running JPI’s\(^\text{17}\). Moldova is the only non-EU Member State that participates in JPI’s, namely those supporting research on water and cultural heritage/climate change. Some initiatives have developed their own policy for working with non-EU Member states, i.e. associated countries and third countries.\(^\text{18}\) The Summary Conclusion of the JP Conference Dublin, February/March 2012 highlighted three key words that resulted from the


\(^{16}\) Doc. 16775/08, 3 Dec. 2008

\(^{17}\) [http://ec.europa.eu/research/era/joint-programming-initiatives_en.htm](http://ec.europa.eu/research/era/joint-programming-initiatives_en.htm)

discussions that can enable and support small and less research intensive (LRIs) countries participating in JPIs: Persuasion, positioning of JPIs and organisation. JPIs need to be persuasive through proving the added value of what they do, through being transparent in the process and by considering LRIs concerns. Placing JPIs higher in the priorities of national administrations and national research programming was equally identified as important for motivating LRIs along with the need to offer easy-entry participation mechanisms to the JPIs. For the latter, the concept of the “knowledge hub” was proposed as a cross-cutting platform throughout all JPIs, offering overall information on each JPI’s stage of development, strategic research agendas (SRA) and participation schemes (ongoing joint activities, calls etc.) so as to enable LRIs to quickly and easily have access to information on the basis of which strategic decisions on participation can be taken. Last but not least, smart specialisation strategies allow LRIs to concentrate on their strengths and engage in JPIs based on common features.

The ten JPI’s have established their own governance structures and have developed strategic research agendas (SRA), or are in the final stages. Further initiatives are not planned yet because the establishment of new initiatives needs an evaluation of the existing ones. The overall conclusion reached by the Expert Group is that the Joint Programming process has got off to a good start, although the process can only reach its full potential if commitment and financial support from national level administrations continues. In some cases participating public authorities are already working to orientate and align their programmes and their funding in order to contribute to the overall implementation of JPIs in a coherent manner. Variable geometry, that is, participation on a voluntary basis, has proven to be a contributory success factor for JPIs.

The current challenge for the JPIs is the effective implementation of the SRAs through joint activities, and the alignment of funding at national and European level. Political commitment for Joint Programming was renewed during the JP conference in Dublin 2012 by Member States, stakeholders and the European Commission (see above). In this regard, the contribution of the JPIs to the completion of the ERA has recently been noted by the Council in its conclusions of 20 and 21 February 2014.

ERA-Net

The ERA-NET instrument under Horizon 2020 is designed to support public-public partnerships in their preparation, establishment of networking structures, design, implementation and coordination of joint activities as well as topping up of single joint calls and of actions of a transnational nature. It merges the former ERA-NET and ERA-NET Plus into a single instrument with the central and compulsory element of implementing one substantial call with top-up funding from the Commission. The focus of ERA-NETs is therefore shifting from the funding of networks to the top-up funding of single joint calls for transnational research and innovation in selected areas with high European added value and relevance for Horizon 2020. This aims at increasing substantially the share of funding that Member States dedicate jointly to challenge-driven research and innovation agendas. Financial contributions of Member States can be in cash or in kind in order to broaden the scope of ERA-NETs towards the coordination of institutional funding of governmental research organisations.

19 A respective call under Horizon 2020 was opened under the topic Towards joint programming under Horizon 2020 supporting, i.a. the development of a Programming ‘Knowledge Hub’ (date of closure 29 April 2014). Link is no longer accessible (22/12/2016)
Horizon 2020 plays a key role in facilitating progress towards the aims of the ERA framework and the Innovation Union, boasting a broad range of support measures: In the Work Programme 2014-2015 of Horizon 2020, more than 20 ERA-NET Cofund actions and a number of CSAs (including those in support to JPIs) are planned, such as the currently open ERA-Net Cofund call for Nanotechnologies, Advanced Materials and Production especially enabling low carbon energy technologies (H2020-NMP-ERA-NET-2015). The budget dedicated to ERA-NET Cofund actions amounts to close to 93 M€ in 2014 and more than 163 M€ in 2015.

Teaming and Twinning

Horizon 2020 also features the Teaming and Twinning schemes that offer opportunities for medium- to long-term region-research institution and institution-institution partnerships, respectively, thereby promoting the transfer of know-how on research management and business development, the alignment of research funding systems adhering to the ERA principles of excellence, transparency, openness and competition (incl. e.g. the application of international peer-review in the selection of proposals) and the development of joint research agendas. Such systemic reforms to conform to ERA standards are a key pre-requisite for making national R&I systems more compatible hence for promoting the opening up of national programmes to joint ventures in R&I financing and alignment of funds.

Exploiting synergies between European, national and regional funds

The existence of a coherent policy mix (i.e. a set of instruments that are complementary) within a strategic framework for R&I in each country is a prerequisite for exploiting all available funding sources for transnational cooperation. Viewing these sources together in the context of a strategy enables policy-makers and R&I actors creating synergies between programmes managed at EU level, namely Horizon 2020, and those implemented at national, regional and transnational level, including European Structural and Investment Funds (ESIF), INTERREG, IPA, ENPI and other regional funds. With the new orientation of ESIF that are to be programmed in the context of smart specialisation strategies (RIS3), the Commission is active in supporting Member States and associated countries, regions and IPA countries in developing their RIS3 and in utilising all available funds most effectively and efficiently for R&I activities in the Danube region. The Guide on Synergies provides a comprehensive overview of the regulatory conditions and conceivable measures at EU, national (e.g. through Horizon 2020 NCP’s) and regional (i.e. ESIF Managing Authorities) level tailored to supporting the coordination of funds across the whole policy mix for R&I. The challenge ahead is to explore these opportunities, adapt them to the individual national and regional contexts and make use of the possibilities of mutual learning and of applying a transnational dimension for the benefit of the whole Danube region. Exploring additional opportunities available to non-EU countries in the Danube region is of particular importance, e.g. as concerns the options to finance R&I activities (possibly also transnationally) from the new generation of IPA II and possibly ENPI sources.

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21 Link is no longer accessible (22/12/2016)
22 http://ec.europa.eu/research/era/era-net_en.htm
23 Link is no longer accessible (22/12/2016)
24 link is no longer accessible (22/12/2016)
25 http://s3platform.jrc.ec.europa.eu/
26 http://s3platform.jrc.ec.europa.eu/s3fordanubemobilisingfininst
Transnational cooperation on research infrastructures (RI)

Building on past experiences in the transnational cooperation on research infrastructures (RI), including examples such as ELI\textsuperscript{28} or Science Link\textsuperscript{29}, efforts should concentrate on considering the most effective ways to further support such cooperation, both in terms of; implementing strategic joint selection processes of research infrastructures in the Danube region that are prioritised for support by the interested countries; joint financing mechanisms using various instruments in the policy mix (from Horizon 2020 via ESI-Funds to IPA and ENPI as well as national and regional sources); launching joint calls for interested users, and; developing schemes to support the attraction of excellent researchers and businesses to research infrastructures (e.g. R&I vouchers).

The European Commission, in its recent communication “Research and innovation as sources of renewed growth”\textsuperscript{30} underlined that research infrastructure investments should make up an integral part of an overarching R&I strategy of a country and be steered at a sufficiently high political level, since R&I affect many policy areas and involve a large number of actors. Improving the quality of strategy development and the policy making process, therefore, involves taking account of the long term impact of R&I by developing a stable multi-annual strategic framework and forward planning of public investment.

5.2.2 Existing building blocks and lessons from previous initiatives: success stories and open issues

One of the main activities of Danube-INCO.Net is the development of the so called DRRIF (Danube Region Research and Innovation Fund), through which a better coordination of funds is to be ensured. In this context, a “DRRIF Working Group” acting under PA7 and led by the Austrian Ministry (BMWFV) was set up in order to monitor the establishment of DRRIF and to harmonise the developments. An accompanying “DRRIF feasibility study” was commissioned to the Slovak contractor Ernst&Young (May 2014- April 2015) in order to elaborate on the possible implementation of a DRRIF. Further steps are necessary in order to reach a common understanding and a possible implementation of a future harmonised Danube funding programme. This concerns the establishment of a Funding Parties’ Platform, the close cooperation with the EUREKA programme as well as the development of a roadmap towards an Art. 185 initiative for the Danube Region. Regarding the Workshop in Belgrade, the respective Danube-INCO.NET Work Package and Task aim at making progress towards better complementarity of national programmes (both in terms of strategic objectives, thematic priorities and of administrative rules and procedures) as a building-block of making the ERA a reality in the Danube region.

The initiative “Scientific Support to the Danube Strategy” of the Joint Research Centre (JRC) of the European Commission\textsuperscript{31} can provide scientific input to the implementation of the EUSDR. The outcomes of a consultation process with many scientists and policy makers from the region were presented, discussed and endorsed at a High Level Meeting in Vienna during a Ministerial Panel (June 25, 2014).

\textsuperscript{28} http://www.eli-beams.eu/
\textsuperscript{29} http://www.science-link.eu/
\textsuperscript{31} https://ec.europa.eu/jrc/en/research/crosscutting-activities/danube-strategy
Another initiative, the “Ulm Follow up Working Group” set up after the Ministerial Conference in July 2012 in Ulm/Germany and led by the German Federal Ministry of Education and Research (BMBF), dedicates its work to the opening up of national programmes to other Danube countries. In concrete terms, a BMBF-call is planned for the end of 2014 to support joint projects and innovative networks in the Danube region. All Danube countries are invited to join and co-finance the researchers from their countries; interest has already been signalled by several Danube states. In the past, two other multilateral calls launched by BMBF have proven very useful to support the transnational cooperation; they targeted Middle and Central East Europe and the Danube region. In addition, a bilateral call financed by BMBF together with the Hungarian Academy of Science (NIH) may provide lessons for future joint initiatives. A Hungarian call for R&I was opened to a co-funding by BMBF; projects are being funded and are ongoing now. The proposals were peer reviewed only by the Hungarian side (scientific board; experts from the Academy of Science according to the national evaluation criteria published in the NIH call). The biggest obstacles on the German side were to renounce from the German evaluation procedure and the timely synchronisation. Each country pays its own researchers.

In all these mentioned initiatives, representatives from the Ministries in charge of Science and Innovation from the Danube countries are involved.

Another initiative relevant to the non-EU countries in the Danube region Serbia and Bosnia and Herzegovina is the completed WBC-INCO.NET (Western Balkan countries-INCO.NET32), committed to the coordination of research policies with the Western Balkan countries. In the frame of this project, meetings were organised to support the regional policy dialogue, among them mainly those of the Steering Platform on research of the Western Balkan countries. They take place biannually and are chaired by the European Commission, the EU Council Presidency and one of the Western Balkan countries. The Platform is an important and very visible high level dialogue group tackling important topics in the field of research policy and cooperation between the EU countries and the Western Balkans. Even after the closure of the project, the meetings are intended to be organised regularly (next meeting in September 2014 in Trieste). One of the important results of WBC-INCO.NET is the identification of regional research priorities for the Western Balkans in the fields of AgroFood, ICT, Health, Environment, Transport, Social Sciences and Humanities and Energy; an exercise that successfully proves the results of harmonisation efforts of several countries in a region. Another important achievement of the WBC-INCO.NET project was the establishment of a database on research infrastructures. The projects webpage is providing information on a number of research infrastructures (RIs), important research facilities and services as well as research equipment used by the scientific community to conduct research in respective scientific fields. This database offers an information to the scientific community looking for cooperation and for services offered by research institutions and private companies.

To mention in this regard is also the SEE-ERA.NET PLUS33 project, an EU funded project with a consortium of 17 institutions from 14 countries. Building on the successful forerunner project SEE-ERA.NET, SEE-ERA.NET PLUS is aiming at the further integration of the Southeast European countries, especially the Western Balkan countries, in the European Research Area (ERA). The main objective of SEE-ERA.NET PLUS is to launch and implement a Joint Call for „Joint European Research

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32 http://wbc-inco.net/ respectively https://wbc-rti.info
33 http://www.see-era.net/
Projects” (JERPS). With a call budget of approximately 3.5 Mio €, 23 JERPS with a duration of up to two years were funded through a real multilateral funding activity, topped up by budget from the European Commission. For the Joint Call, two topics identified as regional research priorities in WBC-INCO.NET (see above) in the fields of AgroFood and ICT were used. The central administration of the call was done by a Joint Call Secretariat responsible for the national funds and the contribution of the European Commission. The lessons of SEE-ERA.NET (best practice but also worst case) should be taken into account when following the vision of a Danube region Programme.

5.3 Case study: Baltic Sea Region

The Baltic Science Link project: connecting research infrastructures in the Baltic Sea Region and facilitating access for businesses and researchers

Baltic Science Link is a flagship project in the policy area Innovation in the EU Strategy for the Baltic Sea Region. The aim of the flagship project is to enhance the usage of existing and upcoming research infrastructures by industry in the Baltic Sea Region. At the moment a new North-European research and innovation cluster with four large-scale research infrastructures - the European Spallation Source, the European XFEL, DESY and Max IV - will be formed. But also smaller research infrastructures at national level should be better used by industry for competitiveness of the region.
Different activities are executed in the flagship project to reach the aim. On one hand side projects are used to find new solutions to improve different aspects of access of industrial users to research infrastructure. The already ended project SCIENCE LINK had developed new marketing tools in attracting commercial users to large-scale research infrastructures and new models accessing large-scale research infrastructure. As the partners has seen that especially SME need more local service and most of the industrial cases can be solved locally; e.g. by universities, the next project, Baltic TRAM, will address local networks of analytical research infrastructures with instruments that are less costly as large-scale research infrastructure. On the other hand under the umbrella of the flagship a network of partners from large-scale research infrastructures, universities and local development agencies, Science Link Network, is formed. This network represents the stakeholders and is the basis of contiguous work.

In a follow-on project called Baltic Tram, running from 2016 to 2019, the partners address the following activities that they consider particularly important for the future:

- Establishment of an internal structure at research infrastructures and universities for appropriate offers to the industry, standard measurements and individual support of companies together with service partners
- Set up an external structure of research infrastructures, universities and private and public service partners as multipliers
- Development of an independent access for industrial users, including economic development aspects and support of SMEs by universities and service partners
- Training for engineers and scientists of the industry on the basis of real examples
- Communication with politicians and funding agencies in the European Commission, with the national ministries and funding agencies about new programs to promote access to the industry - especially small and medium-sized enterprises - to research infrastructures and to promote rapid transfer of knowledge
- Joint development of principles of Open Data Access, development of appropriate structures for compliance with state aid rules.

Baltic Science Link has developed an interesting business model for the creation of critical mass of research facilities, incentivising the circulation of researchers and innovators and promoting their access to major research infrastructures thus shortening the potentially long way from basic research to innovation. It’s adaptation to the specific local and macro-regional contexts in the Danube region could help addressing the key challenges the region is facing with regard to R&I.

The Baltic Science Link project online: www.science-link.eu

5.4 Challenges – opportunities – options for action (policy recommendations)
The outcomes of the workshop are summarized below in a set of recommendations that are deemed pivotal and likely to be implemented in the countries in a medium-term perspective. The

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34 See www.baltic-tram.eu
recommendations are shared among all participants and considered to hold significance across the entire Danube region.

**Joint priority-setting and implementing strategic research agendas**

1. **Enhance political will for common priority-setting**

   The political will to maintain and increase public investments in research and innovation over the decade in a sustainable manner, even in times of austerity, remains a major challenge in the Danube region. Within the field of science and research, the EU Strategy for the Danube Region has so far generated a number of relevant bottom-up projects covering a wide variety of issues (from e.g. water management to dual education). What is, however, missing is a more streamlined, strategic approach to common research issues relevant for and specific to the Danube Region. Such an enhanced strategic approach does not need to start from scratch but can build on work already done in this respect:

   **a)** national/regional strategies that often also include an international dimension for cooperation,

   **b)** many – if not all – countries and regions along the Danube river have also developed smart specialization strategies, which can provide a basis for joint programmes in matching priority areas and building on close ties between countries where collaborative linkages are already strong (e.g. originating from the Seventh Research Framework Programme),

   **c)** currently, a number of projects and initiatives have been – or are in the process of – assessing such options for joint action (Ulm process, Joint Research Center “Nexus-activities”\(^{35}\), Danube-INCO.NET\(^{36}\), specific thematic projects like DANCERS\(^{37}\), DREAM\(^{38}\), DANUBIUS\(^{39}\); the DANUBE Transnational Programme\(^{40}\), Eye@RIS3\(^{41}\) of the Smart Specialisation Platform, Western Balkans Regional R&D Strategy for Innovation\(^{42}\)).

   Beyond funding research co-operation in thematic topics, *national and international programmes should support horizontal and cross-cutting aspects of R&I policy through targeted joint actions*, including, inter alia, science-business cooperation, researcher career development, and mobility of researchers (scholarships, fellowships). When getting engaged in joint actions between countries, particular attention should be given to the varied cultural conditions in which each country operates, taking account of the way decisions are reached (“politics of place”) and funds are administered.

   Within the context of a comprehensive strategy - like the EU Strategy for the Danube Region (EUSDR)\(^{43}\) -, developing specific sub-strategies could be well-suited to meet the specific demands of certain sub-areas of the Danube region and in specific thematic areas, thus

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\(^{36}\) [http://danube-inco.net/](http://danube-inco.net/)


\(^{39}\) [http://www.danubius-ri.eu/](http://www.danubius-ri.eu/)

\(^{40}\) [http://www.southeast-europe.net/en/about_see/danubeprogramme/index](http://www.southeast-europe.net/en/about_see/danubeprogramme/index)

\(^{41}\) [http://s3platform.jrc.ec.europa.eu/eye-ris3](http://s3platform.jrc.ec.europa.eu/eye-ris3)

\(^{42}\) Link no longer accessible (22/12/2016)

providing a sound basis for bottom-up or thematically oriented calls and joint actions. Such a "hierarchy of strategies" would provide a clear vision and avoid activities that are incoherent, overlapping and in a worst case competing for the same financial resources. Therefore, synergy between different funding opportunities is desirable, creating a policy mix characterised by a clear division of tasks and functional complementarity.

2. **Pursue an incremental approach in R&I cooperation in the Danube region**

Transnational funding of research and innovation projects can be a complex issue involving different national funding sources, rules and implementation practices. An incremental approach, by which partners would intensify their cooperation step-by-step, may be the most promising way to overcoming barriers for cooperation. These phases could comprise, for example; mobility schemes and exchange visits for individual domestic researchers (one by one); collaboration between institutions (and national funding bodies) in joint funding activities; opening up national programmes for foreign researchers/institutions. The implementation of pilot calls should be envisaged for specific purposes selected by the (two or more) partners, while making use of experiences gathered in cross-border collaboration projects, such as; SEE-ERA.Net\(^{44}\), Ulm-Follow-up Group\(^{45}\), or the Hungarian-German (NIH-BMBF) call\(^{46}\).

3. **Identify the added value of cooperation for your researchers / research system**

Before engaging in those activities it is important for each region/country to identify the tangible added value deriving from a specific joint activity in the Danube Region in order to get the best results from that co-operation. Here the approach of variable geometry is key – not all countries have to join all activities but should join those that have an added value for them. In such a system, one country may take the initiative by proposing a topic/call, while other interested countries would subscribe to it, as far as it is of relevance.

4. **Harmonisation and synchronisation of funding:**

4. **Address problems of technical compatibility of national or regional research and funding systems**

When preparing for joint initiatives (e.g. a call for research projects), implementation barriers are often caused by (in-)compatible timelines in terms of budgeting (reserving national funds for joint actions), and by the different rules governing the respective funding sources. The development of (longer-term) research agendas (see point 1 priority setting) may in this context be an effective way to facilitate the timely budgeting of national sources! Concerning compatibility, the new legal frameworks for EU policy instruments supporting R&I, i.e. the regulations for Horizon 2020 and those for the EU Structural and Investment Funds (ESIF), have moved towards more interoperability\(^{47}\) and should be observed, both in terms of opening up additional funding opportunities as well as providing a model for coordinating national activities (e.g. using lump sums).

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\(^{44}\) [http://www.see-era.net/](http://www.see-era.net/)


\(^{46}\) Link no longer accessible.

Synergies within the policy mix:

5. **Explore the opportunities of using IPA (Instrument for Pre-Accession Assistance) and ENPI (European Neighbourhood and Partnership Instrument) funds for R&D co-operation**

In analogy to the synergies being promoted between Horizon 2020 and the ESIF for EU member states (see 4.), opportunities of using IPA/ENPI for R&I measures hence creating operational links between funds in non-EU states should as well be exploited. However, since these opportunities are rather new, and knowledge and skills therefore scattered, they should be explored more systematically. To seize such opportunities, the political will is needed by *decision makers and programming bodies to prioritise R&D co-operation in spending these funds*. IPA or ENPI funds could, for example, be used for capacity-building activities, for creating awareness of and increasing participation in Horizon 2020, or to support the set-up of ERA-Net-like administrative structures (call preparation, implementation etc.).

6. **Provide operational support to R&D projects**

Researchers preparing transnational research collaboration projects need support in various forms, most importantly including:

a) transparent information about funding opportunities at national and EU level (“signposting” via e.g. the Danube-INCO.NET Website), and

b) access to proactive support services (e.g. helpdesk, national contact points) providing assistance on the administrative and financial implementation of operations, particularly when funding sources are combined (Horizon 2020, ESIF, IPA/ENPI, national funds...).

**Transnational cooperation of research infrastructures:**

7. **Place research infrastructure development in the Danube region in an appropriate context**

When developing new or upgrading existing research infrastructures at national level, these efforts should be embedded in overarching concepts in order to enhance complementarity between the facilities but avoid their duplication or unproductive competition. Such concepts may be created at different levels, depending on the individual scope and scale of outreach and impact:

a. at national level, e.g. in a national research infrastructure roadmap process,

b. at transnational or international level, e.g. taking into consideration macro-regional strategies or initiatives (i.e. drawing on European Investment Bank studies - recognised by the international community for its contribution to the ERA) or European initiatives (e.g. European Strategy Forum for Research Infrastructures).

8. **Make use of Horizon 2020 for developing and enhancing Danube Region research capacity**

Within the Horizon 2020 work programme for research infrastructures, there are specific opportunities dedicated not only to developing research infrastructures but also – for example – to integrating and opening up existing national and regional research infrastructures of European interest to new users, e-infrastructure for Open Access, new professions and skills for e-infrastructures, and international cooperation for research infrastructures. This broad range of activity should be exploited as much as possible particularly in the non-EU member states.
associated to Horizon 2020, in order to mobilise new (private) actors and unlock a new dynamic of research and innovation. Likewise, the actions funded to spreading excellence and widening participation in European R&I (Teaming, Twinning, ERA Chairs) should be exploited particularly to link actors in the Danube region, access excellent R&I networks and improve research capacities.

9. Explore and support stronger links between science and industry also with a view to research infrastructure

High quality research facilities and infrastructures are attractive not only to researchers in the academic field. In many – even traditional – industries, companies (including SME’s) might have a considerable demand for using and accessing such – often unique – facilities, enabling them to in-source knowledge and sometimes short-cut the innovation process from fundamental research to new marketable solutions. Initiatives and projects to open-up infrastructures like ScienceLink\(^\text{48}\) could serve as (business) models to bring together those different actors and institutions and make best use of the available resources.

6 Participation in international research and innovation programmes (Horizon 2020), particularly of SME’s (Workshop 2)

Based on the outcome of the survey among all Danube-INCO.Net partners on the scope of the dialogue on “Innovation Union and ERA in the Danube Region” (cf. section 4.1), the second ERA and IU dialogue addressed a subject area specifically identified as a priority for the dialogue between project partner countries and of particular relevance for the host country of the respective workshop: “Participation in EU Research and Innovation Programmes (IU commitment 6\(^\text{49}\)) and access of SME’s to R&I Programmes (IU commitment 7\(^\text{50}\)) in particular of the non-EU Member States”. The topic involves efforts to utilising Horizon 2020 and other EU policies and programmes effectively for increasing R&I capacity and cooperation in and across the whole Danube region.

The event was held on 23 April 2015 in Kiev, Ukraine, covering four thematic blocks\(^\text{51}\):

- EU research and innovation programmes: policy context, basic features and state-of-play;
- Development of the institutional base for implementation of Horizon 2020;
- SMEs Involvement in Horizon 2020;
- Role of the Danube-INCO.net and other projects in fostering SME involvement in Horizon 2020.

6.1 Aim and scope

The workshop aimed at assessing the state of play particularly in non-EU countries regarding participation in EU Research and Innovation Programmes; transferring experiences of EU member states to non-EU countries associated to Horizon 2020, as regards

1) the governance processes for influencing the strategic agenda of Horizon 2020,
2) the setting-up and maintenance of effective and efficient programme promotion and advisory support systems (e.g. National Contact Points),

\(^{48}\) http://www.science-link.eu/

\(^{49}\) http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=action-points&view=all

\(^{50}\) Ibid.

\(^{51}\) See Annex III
3) the mechanisms governing the communication between policy-makers and the R&I landscape as potential applicants;
4) generating ideas on potential topics for enhanced cooperation between EU and non-EU partners (with a focus on SMEs) particularly in the framework of Horizon 2020, in fields of particular research competence or areas of critical industrial capacity and existing specialisation, and based on aligned research agendas.

A discussion paper (chapter 6.1) had been prepared prior to the event, establishing a level-playing field of information on the topic area and creating a common point of departure for discussion.

6.2 State-of-play

6.2.1 Danube countries’ progress on promoting Horizon 2020 as the key instrument for implementing ERA and Innovation Union

The EU Strategy for the Danube region (EUSDR) has been adopted by the European Commission in December 2010 and endorsed by the European Council in 2011; although the European Commission coordinates the Strategy at the policy level it has made clear from the beginning that the Strategy would have to respect the “3 NO-Rule - no new funds, no new legislation and no new institutions” in its implementation. This means essentially the responsibility for realizing projects and activities from a content as well as budgetary point of view lies directly with the Danube countries stakeholders (private or public), as for the EUSDR no substantial additional EU budget is provided.

For Research and Innovation issues the EUSDR so far has on the one hand created a significant number of bottom-up cross-border collaboration projects (some are labelled as “Flagship Projects” of PA752) while on the other hand more strategic policy activities are also on the way in order to better coordinate the R&I resources on national, regional and EU level in the region. A specific Working Group of PA7 has been created in this respect53 that currently follows-up the implementation and results of the DRRIF - Danube Region Research and Innovation Fund feasibility study and other PA7 relevant projects; and supports the preparation of concrete steps for further transnational cooperation. At the moment, a first pilot activity for Danube Region has been launched by EUREKA54 with 11 countries joining the Call55.

For increased cross-border cooperation in the Danube Region, FP7 – and now Horizon 2020 – remain essential funding schemes. Although no Danube-specific topics are launched in general, consortia featuring Danube Region cooperation can compete on equal terms with other consortia for the funding of research and innovation projects.

For FP7 data56 it can be observed that around 18% of the project co-ordinators and 22% of the project participants come from the Danube Region. With a view to received funding this volume is around 21% of total funding approved57.

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52 see http://groupspaces.com/KnowledgeSociety/pages/projects
53 See http://groupspaces.com/KnowledgeSociety/pages/workinggroup3drrif
54 EUREKA specifically addresses close-to-market and business R&D, i.e. also SMEs, and as such it is a label of excellence but also a first step for companies to internationalise their activities (smaller consortia possible).
55 Link no longer accessible (22/12/2016)
56 E-Corda Contract data Database FP7, October 2014
57 All three volumes participation, co-ordinators and funding include Germany as a whole
The engagement and success of the different EUSDR countries however is quite diverse: The ranking features Germany, Austria, Hungary and the Czech Republic as the Top 4 countries in all three categories, while Bosnia and Herzegovina, Moldavia, Montenegro and the Ukraine are among the bottom 4 countries.

While the size of a country plays a role in the ranking to a certain degree, there is moreover a pronounced link to the countries respective R&I intensity and performance:

<table>
<thead>
<tr>
<th></th>
<th>Ranking FP7 Funding among the EUSDR countries *1</th>
<th>Overall Ranking Innovation Union Scoreboard *2</th>
<th>Ranking R&amp;D Expenditures among the EUSDR countries *3</th>
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</thead>
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<tr>
<td>DE</td>
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<td>1)</td>
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<tr>
<td>AT</td>
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<td>2)</td>
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<tr>
<td>HU</td>
<td>3</td>
<td>20</td>
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<tr>
<td>CZ</td>
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<tr>
<td>SI</td>
<td>5</td>
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<td>BA</td>
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</table>

*1 Source: E-Corda Contract data Database FP7 / October 2014
This is why a potential better integration into Horizon 2020 requires efforts of the EUSDR countries on different levels

- from reforming national R&I systems in view to the European Research Area priorities and targets
- to advancing the innovation capacities and framework conditions
- and optimizing the national contact point and support system for potential Horizon 2020 applicants.

An additional measure taken by the EU and its Member States in this respect is the European Semester: “All Member States have committed to achieving the Europe 2020 targets and have translated them into national targets. But only if the individual efforts of all countries are coordinated and focused, can they result in the desired impact on growth. Therefore, the European Union has set up a yearly cycle of economic policy coordination called the ‘European Semester’. Each year, the Commission undertakes a detailed analysis of EU Member States’ plans of budgetary, macroeconomic and structural reforms and provides them with recommendations for the next 12-18 months”.

As appropriate these recommendations also include R&I issues. Taking 2015 as an example, the following research and innovation issues were mentioned in the context of the country specific recommendations of the European Semester of the Europe 2020 strategy:

<table>
<thead>
<tr>
<th>Country</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Remove excessive barriers for services providers, including as regards legal form and shareholding requirements and with respect to setting up interdisciplinary services companies. Identify the reasons behind the low value of public contracts open to procurement under EU legislation. Substantially strengthen the resources of the Federal Competition Authority.</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Continue to improve the business environment, in particular for SMEs, by cutting red tape, promoting e-government, streamlining insolvency procedures and implementing the legislation on late payments. Improve the public procurement system by enhancing administrative capacity, strengthening the ex-ante checks performed by the Public Procurement Agency and taking concrete steps for the implementation of e-procurement.</td>
</tr>
<tr>
<td>Croatia</td>
<td>Take further measures to improve the business environment. Notably, by March 2015 set a target for considerably lowering administrative requirements, including para-fiscal charges. Improve administrative capacity and strategic planning of units entrusted with the management of European Structural and Investment Funds and provide them with adequate and stable staffing levels. Strengthen transparency and efficiency of public procurement at both central and local levels, and the capacity to monitor implementation and to detect irregularities.</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Accelerate the development and introduction of a new methodology for evaluating research and allocating funding in view of increasing the share of performance-based funding of research institutions. Further improve the management of EU funds by simplifying implementing structures, improving capacity and tackling conflicts of interest. Increase transparency of public procurement and improve the implementation of public tenders by providing appropriate guidance and supervision.</td>
</tr>
</tbody>
</table>

58 http://ec.europa.eu/research/era/eraprogress_en.htm


60 http://ec.europa.eu/europe2020/making-it-happen/index_en.htm
Hungary | Stabilise the regulatory framework and foster market competition, inter alia by removing barriers in the services sector. Take more ambitious steps to increase competition and transparency in public procurement, including the introduction of e-procurement, and further reduce corruption and the overall administrative burden.

Romania | Accelerate the absorption of EU funds, strengthen management and control systems, and improve capacity for strategic planning, including the multi-annual budgetary element. Tackle persisting shortcomings in public procurement.

Slovakia | Improve the quality and relevance of the science base and implement plans to foster effective knowledge transfer and co-operation between academia, research and business. Introduce measures to improve business environment including for SMEs. Step up efforts to improve the efficiency of public procurement.

Slovenia | Reduce obstacles to doing business in Slovenia in key areas for economic development rendering the country more attractive to foreign direct investment particularly through accelerated liberalisation of regulated professions, reduction of administrative burden including leaner authorisation schemes. Ensure sufficient budgetary autonomy for the Competition Protection Agency and increase its institutional independence. Streamline priorities and ensure consistency between the 2011 Research and Innovation and the 2013 Industrial Policy Strategies with the upcoming strategies on Smart Specialisation and Transport, ensure their prompt implementation and assessment of effectiveness.

Germany | Take more ambitious measures to further stimulate competition in the services sector, including certain professional services, also by reviewing existing regulatory approaches and converging towards best practices across Länder. Identify the reasons behind the low value of public contracts open to procurement under EU legislation.

Table 2: Selected country specific recommendations, 2014


But there is a big challenge in linking efforts like the Innovation Union, the European Research Area and the European semester to the EU Strategy for the Danube Region: The different status of the EUSDR countries implies that only a part of the countries, namely the Member States, are continuously and comprehensively included in the monitoring, analysis and recommendation development, while the EU candidate countries and the non-EU Member States suffer from a partly insufficient or ad-hoc analytical basis for policy development.

It is therefore important to strive towards a better and systematic integration of all EUSDR countries into those processes (like an inclusion into ERAC, monitoring the performance in the Innovation Union Scoreboard etc.) to pave the way for a more balanced development in the region. Engaging more in the ERA policy processes bears the potential to enhance policy and administrative capacity regarding R&I analysis and to promote systemic reforms to increase compatibility with ERA standards, thus ultimately advancing the effectiveness and efficiency of the R&I systems and easing cooperation within the Danube region.

6.2.2 Previous Work to build upon

An initiative to build upon is the high level policy dialogue forum “Steering Platform on Research for the Western Balkan countries”[^61] which was established during the Austrian EU Council Presidency in 2006. It focuses on the Western Balkan countries (WBC) as enlargement and potential candidate countries, some of them being part of the Danube Region. It was following up the initiative “Western Balkan Countries Action Plan in S&T”[^62] which was endorsed during the “EU-Western Balkans Summit”, held in Thessaloniki in June 2003 confirming the EU’s support for the European perspective of the Western Balkan countries. Members of the Steering Platform meet since 2006 once or twice a year under the chairmanship of the EU Commission, one Western Balkan country (rotating) and the

[^61]: [http://wbc-inco.net/usefultool/16](http://wbc-inco.net/usefultool/16)
current EU Council Presidency. Participants represent the EU 28, the European Commission, the WBC and relevant international organizations. Conclusions are endorsed at each meeting.

Another important initiative is the South East Europe 2020 Strategy “Jobs and Prosperity in a European Perspective”\(^{63}\). It demonstrates recognition on the part of governments in the region that close cooperation in selected areas can overcome some of these challenges and accelerate the attainment of goals in key sectors. SEE 2020 builds upon the efforts already invested by SEE countries in developing a joint R&D Strategy for innovation. The instruments noted here have been extracted from this joint R&D Strategy and are being put in a wider SEE 2020 context. The Regional R&D Strategy for Innovation in the Western Balkans includes the establishment of a regional platform on research and innovation called **WISE (Western Balkans Research and Innovation Strategy Exercise)**\(^{64}\). This platform will promote regional collaboration, and will be tasked to implement the Regional R&D Strategy for Innovation, being at the same time coordinator of the R&D and Innovation dimension of the SEE 2020.

Furthermore, the Joint Research Centre (JRC) provides **scientific support to the European Union Strategy for the Danube Region (EUSDR)**\(^{65}\) in two ways. Firstly, it addresses the scientific needs related to the implementation of the EUSDR and thereby helps decision-makers and other stakeholders to identify the policy needs and actions needed for the implementation of the Strategy. Secondly, it contributes to the reinforcement of ties and cooperation amongst the scientific community of the Danube Region. The Scientific Support to the Danube Strategy initiative is subdivided into different flagship clusters and activities. They aim to address the scientific challenges faced by the Danube Region from an integrated and cross-cutting perspective, taking into account the interdependencies between various policy priorities.

The Project **BILAT-UKR*AINA**\(^{66}\) aims to provide a framework to foster cooperation in Research, Technological Development and Innovation (RTDI) between the European Union (EU) and Ukraine and is thus closely linked to the aim of engaging Ukrainian partners in Horizon 2020. It is firmly based on existing cooperation of the main stakeholders and builds up on the results of previous projects funded under FP7, including **IncrEAST, IncoNetEaP and IncoNet CA**\(^{67}\).

**At policy level, the EU-UKR policy dialogue**\(^{68}\) is an important reference activity with a view to implementing Horizon 2020\(^{69}\), on which to build long-term measures tailored to enhancing and integrating national research and innovation systems in Europe. At national level in Ukraine, the activities of the **State Agency on Electronic Governance of Ukraine**\(^{70}\) (e.g. Analyses of the Ukrainian (regional) innovation clusters) and of the **Parliament Committee on Science and Technology of**

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\(^{64}\) Link no longer accessible (22/12/2016)

\(^{65}\) Link no longer accessible (22/12/2016)


\(^{67}\) IncrEAST was initiated by the EU FP7 funded project IncoNet EECA (International Cooperation Network for Eastern Europe/Central Asia) and is currently run by its successor projects IncoNetEaP and IncoNet CA (STI International Cooperation Networks for Eastern Partnership Countries/Central Asian Countries).

\(^{68}\) [http://ec.europa.eu/research/iscp/index.cfm?g=en&pg=ukraine](http://ec.europa.eu/research/iscp/index.cfm?g=en&pg=ukraine)


Ukraine\(^{71}\) (Strategy of innovational development of Ukraine\(2010-2020\)) play a central role in advancing the R&I system.

6.2.3 Opportunities in building capacity for participation in Horizon 2020

In the various contexts of EU policy, there is a wealth of opportunities to build-up own capacity hence to engage in joint ventures of cooperation in and beyond Europe. Horizon 2020 features a set of funding schemes specifically relevant for less-experienced or less-performing countries, regions and research institutions, combined in the programme “Spreading Excellence and Widening Participation”.\(^{72}\) This includes the new Teaming and Twinning schemes to build long-term partnerships between excellent and experienced partners with less-developed institutions and regions in Europe, ERA Chairs to attract excellent and widely recognised researchers and their teams to such regions, and the new Policy Support Facility, which is designed to help governments reform their research and innovation policies. These instruments aim at promoting the transfer of know-how on research management and business development, the alignment of research funding systems adhering to the ERA principles of excellence, transparency, openness and competition (incl. e.g. the application of international peer-review in the selection of proposals) and the development of joint research agendas. Such systemic reforms to conform with ERA standards are a key prerequisite for making national R&I systems more compatible and competitive.

The NCP Academy project is an important element of delivering benefits to national stakeholders competing for Horizon 2020 funding, as it responds directly to the needs of Horizon 2020 National Contact Points (NCPs) to be proficient in the processes involved in running an NCP service itself by being fully cognisant with the rules and procedures of Horizon 2020 in order to provide high quality services to potential applicants. The project aims to enhance the performance of NCPs by providing training through a new NCP Academy targeting all NCPs, independent of specific Horizon 2020 programme orientation. A key objective is to provide harmonized and quality training in the areas of Legal and financial issues; Synergies between Horizon 2020, European Structural and Investment Funds and other measures; Cross-cutting issues such as ethics, gender and others; and SME and innovation issues. Participation in these trainings and benefitting from other services might be a major driver for the full exploitation of all opportunities deriving from Horizon 2020.

Examples of national programmes supporting the networking and preparation of Horizon 2020 projects are three current initiatives launched be the German Federal Ministry of Education and Research (BMBF), including a first call supporting bilateral consortia in Europe to enhance “research structures”\(^{73}\), a new call addressing the Danube region in particular\(^{74}\), and a call promoting partnerships in Central and Eastern Europe as well as South-Eastern Europe\(^{75}\). The first results of these calls in terms of participation impressively demonstrate the demand for such national initiatives, some of which have been joined by other countries (i.e. Hungary, Serbia and Moldova in the case of the Danube call) with own financial resources.

Exploiting synergies between European, national and regional funds

\(^{71}\) Link no longer accessible (22/12/2016)
\(^{73}\) Link no longer accessible (22/12/2016)
\(^{74}\) Link no longer accessible (22/12/2016)
\(^{75}\) Link no longer accessible (22/12/2016)
Creating a coherent policy mix within a strategic framework for R&I in each country, that is, a set of instruments that are complementary in achieving the strategic policy aims of, e.g. the Europe 2020 strategy, not only opens up opportunities for mobilising R&I actors (part. SME’s) to participate in competitive programmes such as Horizon 2020. Programmes aligned to strategic policy goals also have the potential to improving the quality of Horizon 2020 proposals, e.g. in terms impact of the research activities, by ensuring the transfer of results to be taken-up by regional actors (part. Businesses) and implemented on the ground (locally, regionally, nationally or transnationally).

Viewing all available sources together in the context of a strategy thus enables policy-makers and R&I actors creating synergies between programmes managed at EU level, namely Horizon 2020, and those implemented at national, regional and transnational level, including European Structural and Investment Funds (ESIF), INTERREG (for those programmes relevant for the Danube region see http://www.danube-capacitycooperation.eu/item/957520), IPA, ENPI and other regional funds. With the new orientation of ESIF that are to be programmed in the context of smart specialisation strategies (RIS3), the Commission is active in supporting Member States and associated countries, regions and IPA countries in developing their RIS3 and in utilising all available funds more effectively and efficiently for R&I activities in the Danube region. The Guide on Synergies provides a comprehensive overview of the regulatory conditions and conceivable measures at EU, national (e.g. through Horizon 2020 NCP’s) and regional (i.e. ESIF Managing Authorities) level tailored to supporting the coordination of funds across the whole policy mix for R&I. The challenge ahead is to explore these opportunities, adapt them to the individual national and regional contexts and make use of the possibilities of mutual learning (i.e. through the S3 platform, see footnote 21) and of applying a transnational dimension for the benefit of the whole Danube region. Exploring additional opportunities available to non-EU countries in the Danube region is of particular importance, e.g. as concerns the options to finance R&I activities (possibly also transnationally) from the new generation of IPA II and possibly ENPI sources.

Other activities at European level to support SME’s in their aspiration to internationalise, build capacity, engage in strategic networks hence creating a competitive edge enabling them to access i.a. Horizon 2020 include mutual learning seminars / exercises (MLS / MLE) conducted in the frame of the European Research Area Committee (ERAC) and the Policy Support Facility (PSF), respectively. One such MLS was specifically dedicated to promoting so-called “high-growth innovative SMES” (HGIE), the results of which may provide clues as to what measures at national or regional levels might promise an advancement of the structural capabilities of SME’s in a global competitive environment.

### 6.3 Case study: Slovakia

**Setting up a functioning NCP system and other support mechanisms in Slovakia for research institutions, higher education institutions and SME’s**

In the middle of FP7, in 2010, in spite of the fact that Slovakia was facing one of the lowest investments in R&D in the EU and one of the lowest participation and success rate in FP7, the national FP7 system collapsed due to internal competence arrangements of the research support...
agency. New temporary national support structure was created in frame of outsourcing contract of the Ministry of Education and professionals from universities, academia and business were hired for the NCPs. During the transition period the ministry has prepared a concept of centralized support structure based in the Slovak Centre of Scientific and Technical Information (SCSTI).

Nowadays the system consists of NCPs (most of them is working on full-time basis), national programme committee delegates (18 experts under direct control of the ministry) and newly established liaison office in Brussels (SLORD) with 3 permanent and 3 temporary positions. Having base funding from the agency the system generated additional income from the Horizon 2020 support actions focused on NCP cooperation and Slovak EU presidency.

![Diagram of national infrastructure for Horizon 2020 in Slovakia.](image)

**Figure 3: National infrastructure for Horizon 2020 in Slovakia.**

Source: BIC Bratislava, 2015

Until April 2015 the system organized 23 information days with 1286 participants, 8 training seminars with 506 participants and a matchmaking event with 250 participants from 11 countries and 820 meetings. System is still facing a lot of challenges to overcome, such as marginal gravity of the EU framework programmes in the national strategies, lack of qualified personnel for NCP positions, insufficient prioritizing of the national research as well as low participation of large industrial players in FP.

Although the system was facing a lot of problems in initial stages, now it is an example of a functioning platform established with a limited budget in a relative short period of time and bringing positive impact on national participation in Horizon 2020.

6.4 Challenges – opportunities – options for action (policy recommendations)

The outcome of the second ERA and IU policy dialogue workshop is summarised below in a set of jointly developed recommendations. The recommendations are shared among all participants and considered to hold significance across the entire Danube region.

1. Policy level: conditions for political influence and strategy-making

Background:

There are a number of strategic actions at EU level that have direct or indirect spill-over effects on the development of national R&I policies. Two of the most prominent concepts in this respect are the European Research Area (ERA) and the Innovation Union (IU). In addition, Horizon 2020 as the central instrument for implementing these initiatives and for promoting European and international R&I co-operation has a strong influence on the national research and innovation landscapes. Progress in achieving the ERA and Innovation Union targets is closely monitored for all Member States, as are the participation and success rates of the different countries and regions in Horizon 2020. For non-EU countries, association to Horizon 2020 is not the end but just the beginning of a long-term process of integration into a European research and innovation landscape that needs constant efforts, also at political level.

Recommendations:

- Governments of associated countries and their administrations should make determined efforts to getting actively involved in those Committees, Working Groups (e.g. ERA specific Groups) and similar configurations that are of strategic relevance for a given country in order to be close to the debates and to be able to exert influence on the agendas and implementation processes.

- Even if not (yet) part of the EU, countries should actively lobby to participate in monitoring exercises and statistical data compilation, e.g. regarding the Innovation Union Indicators, in ERA monitoring or Mutual Learning Exercises. National statistical offices should strive to set up a coherent data system; in so doing, specific EU support in developing data collection mechanisms should be sought, e.g. from EUROSTAT or the Joint Research Centre (JRC) of the European Commission, establishing which data need to be collected in which way so as to ensure comparability and compatibility.

- Specific political initiatives and communication measures should be implemented in associated countries in the Danube region, in order to bringing the main concepts like ERA, Innovation Union or Smart Specialisation onto their political agendas and integrate those elements into the national strategies and programmes that are of particular benefit for the respective country (e.g ERA Roadmap process). Tools like the S3 platform or the Policy Support Facility (PSF) of Horizon 2020 should be explored and used for mutual learning and peer-review of each other's work.

- Depending on the availability of EU funds (e.g. Structural and Investment Funds (ESIF), IPA or ENPI Funds, or funds for bilateral or multilateral projects), these should be exploited for accessing know-how on the setting-up, management and governance of effective R&I systems. Specific instruments of Horizon 2020 such as Teaming, Twinning and ERA Chairs or the aforementioned PSF within the work programme “Spreading Excellence and Widening
Participation” should be utilised strategically for building capacity in administration and science management.

2. Institutional level: arrangements for operational support for participation

Background:

With an overall budget of nearly 75 billion Euros between 2014-2020 Horizon 2020 is the world’s largest research and innovation programme and the main financial instrument for implementing the ERA and the Innovation Union of the Europe 2020 strategy. During the first two years of implementation, competition for Horizon 2020 funds has proven to be high, with an overall success rate of only around 14%. Therefore, successful proposals satisfy highest quality requirements. Yet, statistics show that participation varies significantly between countries and types of actors. Past analyses have also demonstrated that the existence of a tailor-made National Contact Point (NCP) system is a key factor to effectively support the national research and innovation community in their efforts to successfully apply for Horizon 2020 funds. Especially newcomers and types of applicants that typically face particular challenges in getting involved (like SME’s) need dedicated services in this respect. Moreover, a number of new instruments have been introduced that require specific awareness raising activities and guidance services.

Recommendations:

- Depending on the set-up of the national research-system, a decision needs to be taken on the structure of NCP support, assuring indiscriminate accessibility for all types of stakeholders targeted. Current practice in Europe features both more centralised systems where the services are gathered “under one roof” or assigned to just a few specialised agency-type organisations, or more decentralised systems that also involve regional or local actors as well as university administrations or similar. Taking examples from other countries can help in designing an appropriate national model adapted to the particular institutional conditions of the country.

- For the NCP system to be tailored to the specificities of a country and recognising the specific national scientific competences or economic structure or industrial capacity, national governments may decide on a certain concentration of NCP resources (i.e. staffing) on the particular national strengths where a competitive edge could be developed and hence success in Horizon 2020 is most likely. This could include specific technological areas or certain societal challenges of paramount national/regional significance.

- Ensuring interaction between the players in the system, particularly between NCP’S and Horizon 2020 Programme Committee delegates and national experts, is key to ensure a seamless information flow between the political level (deciding on programmatic issues of Horizon 2020) and the operational level (NCP) with the best knowledge of the support requirements of the national research and innovation landscape (higher education institutions, research organisations, industry/SME’s). Thus, NCP’s can act as an interface between those influencing the strategic direction of Horizon 2020 in the context of the Programme Committee meetings and those applying for Horizon 2020 funds.
• NCP’s should actively get involved in the European NCP network projects funded by Horizon 2020 for the various programme lines\(^80\), and in particular the NCP Academy\(^81\) run by the national NCP coordinators, providing training for Horizon 2020 NCPs in order to ensure quality standards and sharing good practice or to prepare joint promotion material.

• Maintaining effective liaison activities between Horizon 2020 National Contact Points and other support entities and networks (such as the Enterprise Europe Network - EEN\(^82\) – for SME’s) is another key prerequisite in order to ensure complementarity, coordination and synergies hence offer a complete set of full-fledged and integrated services.

3. **Stakeholder level: mechanisms for mobilising and involving small and medium-sized enterprises (SMEs)**

**Background:**

Small- and Medium-sized Enterprises (SMEs) are encouraged to participate across the whole Horizon 2020 programme. They can engage in collaborative projects as part of a consortium; they are specifically targeted by a new dedicated SME instrument designed for highly innovative companies with a particular potential to grow. The integrated approach and simplification efforts should lead to a minimum of 20%, or about € 8.65 billion, of the total combined budgets of the specific objective 'Leadership in enabling and industrial technologies' (LEITs) and the ‘Societal Challenges’ going to SMEs. The SME instrument will be crucial in achieving this target and aims at supporting high-potential SMEs to develop ground-breaking innovative ideas for products, services or processes that are ready to face global market competition. Over the course of Horizon 2020, at least € 3 billion will be allocated to the SME instrument\(^83\).

Moreover, there is scope for SMEs to engage in the inter-governmental initiatives EUREKA with its Eurostars\(^84\) programme for research-intensive SME’s as well as the Fast Track to Innovation pilot action (FTI)\(^85\). The European Commission also runs a specific programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME). Furthermore, SMEs are encouraged to make use of the various EU financial instruments providing loans, guarantees and other forms of debt finance as well as equity finance for mainly early-stage investments.\(^86\)

Beyond Horizon 2020, SMEs in EU-countries are also targeted by the operational programmes of the Structural and Investment Funds, especially in the context of innovation.

**Recommendations:**


\(^{81}\) [http://ncpacademy.eu/](http://ncpacademy.eu/)

\(^{82}\) [http://een.ec.europa.eu/](http://een.ec.europa.eu/)

\(^{83}\) For more information, see [https://ec.europa.eu/research/participants/portal/desktop/en/funding/sme_participation.html](https://ec.europa.eu/research/participants/portal/desktop/en/funding/sme_participation.html); [http://ec.europa.eu/research/health/policy-issues-sme_en.html](http://ec.europa.eu/research/health/policy-issues-sme_en.html). Within the life sciences sector there is also a specific support action called Fit for Health 2.0 ([http://www.fitforhealth.eu](http://www.fitforhealth.eu)).

\(^{84}\) [https://www.eurostars-eureka.eu/](https://www.eurostars-eureka.eu/)


\(^{86}\) For an overview of loans and venture capital supported by the European Union, see [www.access2finance.eu](http://www.access2finance.eu)
In order to make use of the ample opportunities offered for SME’s at EU level, dedicated support to SME’s is needed at national and regional levels that is tailored to the global, competitive environment in which they act. SMEs typically work in a different set-up and logic than researchers do, employ a different communication culture and are subject to different framework conditions (e.g. state aid and accounting rules). Dedicated support mechanisms should therefore be deployed, capable of providing fast, reliable and to-the-point services.

Government-to-business interactions should be promoted to make SME’s (associations) in a region or country real partners in the development of R&I strategies (beyond formal consultation). By tapping into their knowledge of the target markets, their specific sector and the potential strengths and gaps in the economic fabric, location-based economic transformation strategies can be developed, based on choices in research and innovation policy that would give SME’s and regions a competitive edge while drawing on opportunities they can seize because of their particular and unique characteristics.

Support to business-to-science cooperation arrangements between SMEs and universities and research organisations – both within a country or region and internationally, and linked to intermediaries such as Horizon 2020 NCP’s and the Enterprise Europe Network (EEN) should be a central feature of R&I and cluster policies, promoting a knowledge-rich and innovative economy. These policies can be supported through specific technology transfer activities, such as sector platforms or technology transfer centers at research entities or support for university spin-offs; such activities can potentially be part-financed from ESIF operational programmes in EU countries, or IPA/ENPI in non-EU countries.

The national bodies governing the support services like NCP’s could make strategic choices as to which SMEs to contact, to encourage in taking part in EU-level programmes (SME instrument) and to provide tailor-made support, since these programmes are typically marked by very strong competition, with only the best receiving funding. Therefore, support and advice should be invested in a few promising companies or “gazelles” instead of organising big information events.

7 Performance-based research funding as an element of increasing the effectiveness of national R&I systems (Workshop 3)

Based on the outcome of a survey conducted among all partners on the scope of Task 2.3 “Innovation Union and ERA in the Danube Region”, the current (third) workshop, addressed a subject area specifically identified as a priority for dialogue between project partner countries: effective national research systems (ERA Priority 1).

7.1 Aim and scope

Efficient and effective national research systems featuring performance-enhancing structures, framework conditions and processes are the precondition for a strong European research environment. This involves questions of quality (e.g. selection of the best projects), relevance (e.g. potential for using possible results) and efficiency (e.g. input-output ratio). Effectiveness is also influenced by factors such as good cooperation between the research stakeholders and the availability of efficient national research and innovation strategies.
Within the ERA framework, the European Commission has singled out a number of aspects related to which all Member States should attain best-practice performance. The key call on EU Member States is to introduce or enhance competitive research and innovation funding through calls for proposals and institutional assessments as the main modes of allocating public funds to research and innovation. This may include the introduction of legislative reforms if necessary.

The underlying rationales for the implementation of research performance-based funding (RPBF) systems is to maximize the effectiveness (relevance, quality etc.) and efficiency (cost-benefit-ratio etc.) of public spending on research by, i.e. ensuring a good balance of competitive and institutional funding. This includes 1) providing incentives for improving research performance, e.g. through a suitable share of competitive funding allocated to projects, and 2) the concentration of resources in the best performing organisations, which includes a suitable level of organizational funding in order to secure continuity of research efforts in strategic fields.

With a view to the workshop and in the context of Horizon 2020 and the EU Strategy for the Danube Region, this call for reforms of the national R&I systems should be extended to countries associated to Horizon 2020 and third countries subject to EU-accession processes or neighbourhood policy, in order to live up to the underlying ambition of the priority that the national science systems can cooperate more effectively with one another and establish stronger external networks, so that Europe can become more attractive for excellent international talent as a whole.

Within this scope, the specific objectives of the workshop were to:

- analyse the state of progress in both EU countries and in non-EU countries regarding the level of competition in research and innovation funding and usage of performance indicators as criteria for R&D funding;
- discuss key issues in the Danube countries in this regard from the national perspectives, focussing on Moldova as the host country and the non-EU Danube region countries at large (this may include, wherever relevant, the exchange of arguments regarding data availability, robustness and / harmonisation towards the Innovation Union Scoreboard and the EU innovation indicator);
- transfer good practice from Danube countries with well-functioning R&I systems to those with identified deficiencies in this regard; and
- identify concrete measures to be recommended to policy-makers and funding agencies in the countries with ongoing reformation processes of the R&I systems for enhancing progress towards catching-up to international excellence standards.

### 7.2 State-of-play

#### 7.2.1 Evidence – previous work to build upon

Due to its direct relevance to the ERA Priority 1: effective national research systems, there are several relevant reports on the usage of PBF systems by the EU MS issued in the recent years.

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87 See European Research Area, available at [http://ec.europa.eu/research/era/more-effective-national-research-systems_en.htm](http://ec.europa.eu/research/era/more-effective-national-research-systems_en.htm)
The most recent one was launched in May 2016 by the EC Joint Research Center - Research Performance Based Funding Systems: a Comparative Assessment\(^{88}\). The initial aim of the report was to provide an input to a DG R&I managed Mutual Learning Exercise on performance based funding in the framework of the Horizon 2020 Policy Support Facility. It presents an analysis of the different approaches taken by EU Member States, selected associated and third countries, for using performance based allocation of public R&D funding. In addition, it identifies a number of issues which Member States should take into account when evaluating/implementing these types of funding allocation mechanisms. The report contains a brief overview of the ongoing debate regarding the benefits and disadvantages of peer review and of different types of bibliometric assessment approaches. While RPBF aimed to increase the quality of research outputs, they have also the potential to generate perverse incentives. The costs involved in setting up different types of assessment, is also a factor to consider.

In a nutshell, there are five different models of performance-based funding as a means for an effective and efficient allocation of public funding:

1. Funding allocation formula based on quantitative indicators
2. Education and PhD awards based formula
3. RPBF based on Journal based impact assessments
4. RPBF based on citation-based impact assessments
5. RPBF based on peer review assessments.

According to a report commissioned by the EC Directorate General for Research and Innovation\(^{89}\), two collected indicators, at the EU MS level, relate to research evaluations:

- share of national institutional funding allocated based on institutional assessments; and
- share of block and institutional funding allocated using performance-based criteria, as share of national GBAORD.

Many countries use a funding formula partially based on the quantitative assessment of research outputs. Another set of countries base their funding formulae instead on more qualitative measures such as evaluations of research output through peer review. A subset of the latter uses complementary quantitative assessments of research outputs to inform their peer review process. The available evidence on the effect of this funding mechanism is mixed. Some systems without a clear RPBF system perform very well, probably in part because they have an alternative way of concentrating resources in top performing organisations. An interesting observation is that all the EU Member States which did not experience a consistent improvement in impact scores over the decade studied, did not have a RPBF system in place. Some systems suffer from relative underfunding and/or the outbound mobility of their scientists.\(^{90}\)

**RPBF systems vary considerably between Member States.** Differences include the share of organisational level funding which is allocated through RPBF, the speed within which the system is introduced, the degree of stakeholder involvement, the impact different systems have on the

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\(^{89}\) Assessment of progress in achieving ERA in Member States and Associated Countries, Final Report to DG Research and Innovation; report submitted by ICF International in association with Technopolis, 2015

\(^{90}\) Jonkers, K. & Zacharewicz, T., ibid.
autonomy of research performers, the criteria on which research outputs are assessed as well as the other missions and behaviours which the government wants to promote in these organisations.

Within the DEFINE project (co-funded by EC Life Long Learning Program), the European University Association launched a thematic report in 2015 – *Performance-based funding of Universities in Europe*[^91], covering 28 European university systems. The report provides an overview of allocation mechanisms for core public funding to universities across Europe and identifies performance elements, notably in funding formulae and contracts between universities and public authorities. Secondly, it assesses the impact of performance-based funding at both system and institutional level and highlights possible unintended effects with a view to provide recommendations to policy makers, funders and university managers.

**There is a wealth of other material** available addressing the topic, including country-specific reports and assessments in the context of ERA[^92], the Smart Specialisation Platform[^93], the H2020-financed Policy Support Facility (PSF)[^94] and actions financed by the European Parliament[^95] as well as reports and tools covering Europe[^96] and beyond[^97].

### 7.2.2 Overview of the existing performance-based research funding practices in the Danube countries

Based on the JRC Science for Policy Report “Research Performance Based Funding Systems: a Comparative Assessment”[^98], the problem of reliable, comprehensive and comparative data becomes once again apparent. Data is only available in a very patchy form even for the EU Member countries and data for non-EU Member States is hardly available at all, making it difficult to get a clear picture of the situation in the Danube Region.

Overall, it seems that performance-based funding is only used to a limited extent in the region. According to the study

- Bulgaria, Hungary, Romania and Slovenia have no significant elements of performance-based funding introduced in their research systems;
- Austria, Germany only use them to a limited extent;

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[^92]: ERA Dashboard on country-specific progress regarding ‘more effective national research systems’ ([https://visualise.jrc.ec.europa.eu/views/ERA/Priority1/country/DE?%3Aembed=y&%3Atoolbar=no&%3Atabs=no](https://visualise.jrc.ec.europa.eu/views/ERA/Priority1/country/DE?%3Aembed=y&%3Atoolbar=no&%3Atabs=no)); ERAWATCH reports, particularly on non-EU countries ([https://wbc-rti.info/object/link/6566](https://wbc-rti.info/object/link/6566))

[^93]: Smart specialization peer-review reports ([http://s3platform.jrc.ec.europa.eu/s3-design-peer-review](http://s3platform.jrc.ec.europa.eu/s3-design-peer-review))


[^95]: Stairway to Excellence (S2E) project reports ([http://s3platform.jrc.ec.europa.eu/country-region-information](http://s3platform.jrc.ec.europa.eu/country-region-information))


while the Czech Republic, Croatia and Slovakia partly use a quantitative formula with bibliometric assessment within their research funding system;
no information is available for the other countries (Bosnia and Herzegovina, Montenegro, Moldavia, Serbia and Ukraine).

Regarding the **share of project versus institutional funding**, the situation is quite diverse: While Austria, Bulgaria, Germany and Slovenia show a significantly higher share of institutional funding, the Czech Republic and – even more pronounced – Croatia have a high share of project-based funding, but, also here, there is a striking lack of data in the Region making a comprehensive overview impossible.

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Organisational Funding</th>
<th>Project Funding</th>
<th>Organisational Funding</th>
<th>Project Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>2013</td>
<td>73%</td>
<td>27%</td>
<td>72%</td>
<td>27%</td>
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<tr>
<td>Slovenia</td>
<td>2013</td>
<td>–</td>
<td>–</td>
<td>69%</td>
<td>31%</td>
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<tr>
<td>Germany</td>
<td>2013</td>
<td>64%</td>
<td>36%</td>
<td>64%</td>
<td>36%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2013</td>
<td>–</td>
<td>–</td>
<td>54%</td>
<td>46%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>2013</td>
<td>49%</td>
<td>51%</td>
<td>21%</td>
<td>79%</td>
</tr>
<tr>
<td>Croatia</td>
<td>2014</td>
<td>–</td>
<td>–</td>
<td>8%</td>
<td>92%</td>
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<tr>
<td>Hungary</td>
<td>–</td>
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<td>–</td>
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<tr>
<td>Romania</td>
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<td>Slovakia</td>
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<tr>
<td>Bosnia and Herzegovina</td>
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<td>not covered by the study</td>
<td>–</td>
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<td>–</td>
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<tr>
<td>Serbia</td>
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</tr>
<tr>
<td>Ukraine</td>
<td>–</td>
<td>not covered in the study</td>
<td>–</td>
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<td>–</td>
</tr>
</tbody>
</table>

* Public Funding of Research (project commissioned by the JRC)

**Table 3: Share of project vs. organisational level funding in Danube countries, 2016**

### 7.2.3 The impact of PBF systems on the overall national research and innovation performance

As described in the JRC Report, there are various reasons for introducing Research Performance Based Funding (RPBF) that range from improving research cultures and facilitating institutional changes to increasing the overall research performance.

The “Research excellence composite indicator” was introduced by the JRC in 2012; it is available in the RIO Monitoring System99. This indicator combines information on highly cited publications per total publications, patents, ERC grants per public R&D and top universities and research organizations per GERD. Within the EU the Nordic countries, the Netherlands and UK are on top of the list of countries. In the Danube Region, Germany and Austria rank 8th and 9th, followed by Hungary (13), Slovenia (15), Czech Republic (19), Slovakia (20), Bulgaria (21), Croatia (26) and Romania (28).

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7.2.4 Conceivable policy interventions and support tools

The non-EU MS Danube countries are associated to Horizon 2020 (Ukraine being the most recent one). They are represented as observers in the ERA related groups hence are in a position to participate – together with the EU Member States – in the discussions concerning the implementation of the ERA principles.

Some of the countries are currently using the opportunities offered by the Horizon 2020 instruments in order to support the reforms undertaken of the national R&I systems and to increase their competitiveness:

The Horizon 2020 Policy Support Facility (H2020 PSF) is a new instrument under the Horizon 2020 specific objective “Spreading Excellence and Widening Participation”, supporting Member States and Associated Countries in the design, implementation and evaluation of national R&I strategies, programmes and institutions. It offers, on a voluntary basis, high level expertise and tailor-made advice to national public authorities. A framework contract was established in 2015 to provide overall support to the management of the PSF. The services provided include; support to Peer Reviews of national R&I strategies, programmes and institutions; specific support to countries (pre-peer reviews, post peer reviews, ad-hoc requests for support needed in the design, implementation or evaluation of specific R&I reforms); support to in-depth mutual learning between a group of countries and; dissemination activities. Two countries from the region, Republic of Moldova and Ukraine, have undergone a PSF Peer Review.

Like the H2020 PSF, Teaming, Twinning and ERA Chairs are all programmes under the specific objective of Horizon 2020 “Spreading Excellence and Widening Participation”; they are tailored to increase the excellence and competitiveness of the national R&I systems in EU Member States and H2020 associated countries. Participation as a coordinator (one of the main drivers

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100 https://rio.jrc.ec.europa.eu/
for R&I third party funding) may serve for the target countries – many of which are Danube countries – as a catalyst to drive reforms in research institutions, i.e. towards

- merit-based assessment of research centres through national pre-selection processes for Teaming,
- performance-based funding allocation through proven competitiveness in third-party funding acquisition in the context of H2020,
- open and transparent recruitment of excellent researchers,
- strategic orientations of research agendas underpinned by research budgets on key national and regional priorities, and
- linking research institutions to excellent international partners.

Key elements of the strategies expected from H2020 applicants are directly linked to the aspects raised within the ERA priority on effective R&I systems, in that, for Teaming, projects need to demonstrate how the newly established or upgraded centres will have full autonomy in decision making and to elaborate on the steps that will be taken towards eventual long term self-sustainability in terms of funding.

Among other instruments relevant for identifying reform options related to R&I funding allocation are the policy mix peer reviews organized within the Danube-INCO.NET project. Two policy mix peer reviews are planned; one to Bosnia and Herzegovina and one to Serbia. The outcomes of the peer review visits will be included into a synthesis report to summarize the actual R&I policy mix of countries and formulate recommendations for possible improvements. The whole process of the policy mix peer review will be implemented to: support the improvement of R&I policy mixes of the selected countries, provide food for evaluation based on critical friend approach and formulate policy recommendations.

For the non-EU MS Danube countries, European Neighborhood Policy Twinning and TAIEX technical assistance instruments are also relevant:

**Twinning** is an instrument for institutional cooperation between Public Administrations of EU Member States and of beneficiary or partner countries. Twinning projects bring together public sector expertise from EU Member States and beneficiary countries with the aim of achieving concrete mandatory operational results through peer to peer activities. In the IPA region, Twinning aims to provide support for the transposition, implementation and enforcement of the EU legislation (the Union acquis). It builds up capacities of beneficiary countries’ public administrations throughout the accession process, resulting in progressive, positive developments in the region. Twinning strives to share good practices developed within the EU with beneficiary public administrations and to foster long-term relationships between administrations of existing and future EU countries.

Since 2004 the Twinning instrument is also available to some of the EU Eastern and Southern Neighbourhood partner countries. In this framework it aims at upgrading the administrative capacities of the public administration of a partner country through the training of its staff and the support to the reorganisation of its structure. It also supports the approximation of national laws, regulations and quality standards to those of EU Member States in the framework of Cooperation or Association agreements signed with the EU.
The beneficiary / partner administration in a Twinning project is a public administration with sufficient staff and absorption capacity to work with a Member State institution having a similar structure and mandate. Twinning is not a one-way technical assistance instrument but a shared commitment.

Twinning projects are implemented with a view to the mandatory results to be achieved. They are usually articulated in components corresponding to the expected results and foresee a number of activities including workshops, training sessions, expert missions, study visits, internships and counselling. Twinning lies on learning by doing principle and sharing of best practices.

To set up Twinning projects, the European Union relies on the co-operation and administrative experience of EU Member States (MS), which mobilise public expertise both from public administrations and semi-public bodies.

TAIEX is the Technical Assistance and Information Exchange instrument of the European Commission. TAIEX supports public administrations with regard to the approximation, application and enforcement of EU legislation as well as facilitating the sharing of EU best practices. It is largely needs-driven and delivers appropriate tailor-made expertise to address issues at short notice in three ways:

- Workshops: EU Member State experts present specific areas of EU legislation in workshops to a large number of beneficiary officials.
- Expert missions: EU Member States expert(s) are sent to the beneficiary administration to provide in-depth advice on the transposition, implementation or enforcement of a specific part of EU legislation.
- Study visits: a group of three practitioners from a beneficiary administration take part in a study visit to an EU Member State’s administration.

TAIEX seems to be beneficial for involving short term expertise from the EU Member States in drafting policy documents in the S&T field, according to the EU legal framework provision and identified good practices.
7.3 Case study: Czech Republic

**Introducing a new R&D evaluation methodology and performance-based research funding system**

In 2009, the Czech Republic had adopted a performance-based system for allocating institutional research funding, in an effort to improve performance. In the system, numbers of both basic and applied research outputs were counted and, following a weighting, directly converted into funding. This rather “crude” and purely retrospective method led to an undesired increase in the number of low quality outputs (e.g. articles). Following criticism in the 2012 International Audit of the Research, Development and Innovation System in the Czech Republic, the Czech Ministry of Education, Youth and Sports (MEYS) ran a pilot project in 2014 and 2015 to develop an R&D evaluation methodology (EM). The new system, called National Evaluation of Research Organisations (NERO), had been designed to address the former system’s weaknesses. It was based on a number of design principles, including fairness and transparency based on evidence, thus ensuring resilience to clientelism in funding decisions and avoiding conflicts of interests.

The funding principles following from these design principles include:
- Different budgets (‘pots’) are to be earmarked for different types of research organisations,
- competition will be restricted to groups of research organisations with comparable missions,
- the level of allocated funds to different pots is a policy decision; as a starting point it was considered taking the current level of expenditure on institutional research per research organisations as a reference (mean values over several years).

The R&D Evaluation Methodology was expected to fulfil formative (allowing future improvement) and summative (demonstrating outcomes) functions and to cover outputs, impacts, and institutional projections of research development. The methodology was designed to take into account the diversity of actors – from the scientific fields to the specific missions of different categories of research organisation, i.e. universities as well as public and private research organisations.

**From assessment to funding** (cf. figure 5): NER0 clearly separates assessment, i.e. judging how ‘good’ research performance is, from the funding process. The unit of analysis is a ‘research unit’, that is, a group of researchers working in one research-performing organisation on a specific field — this may be a group, department, faculty or other entity. The amount of institutional funding an organisation receives depends on the aggregate performance of their research units.

In addition, NERO is based on international peer review in order to obtain an independent but nuanced analysis of performance and provide feedback on how to improve it. The peer reviews are conducted by field-specific panels to ensure that experts, both international and national, are qualified to make their judgments.

Research units write self-assessments and provide a sample of their best outputs. The peer reviewers use these, along with bibliometric indicators, to assess each research unit’s performance using five criteria: Institutional management and development potential, acknowledgement by the national and global research community, research performance, research excellence and societal relevance.
The Czech government office has to date not proceeded any further in implementing the NERO methodology developed and pilot-tested, for it met with opposition from the managements of research organisations and personnel changes in the government are impeding progress.

The case study demonstrates the possible obstacles that any country considering changes in the R&I funding system needs to be aware of: The introduction of a research-performance-based funding system (RPBF) should start with a strong and binding political commitment; a RPBF should be developed by an expert team involving all relevant stakeholders, including representatives of the research community; the implementation itself requires a strong political backing to overcome opposition mainly from the research community.

In the spring 2017, the European Commission was running a Mutual Learning Exercise under the Horizon 2020 Policy Support Facility devoted to sharing best practices among participating countries and external experts in the development of a RPBF.
7.4 Challenges – opportunities – options for action (policy recommendations)

The outcome of the workshop is summarised below in a set of jointly developed recommendations. These are shared among all participants and considered to be relevant across the entire Danube region.

1. System-learning through an evolutionary approach

Background:

Increasing the level of competitive funding and institutional assessments with the aim to improve effectiveness of the Research & Innovation system is currently considered by almost all Danube countries. As stated by the workshop participants, the provisions concerning RPBF are part of their countries’ R&I or ERA Strategies. Even if there are large differences between national research funding systems (including the ratio of the two main funding mechanisms: institutional funding (block funding) and project-based funding) there is a strong interest for a peer learning process in the Danube region and beyond concerning RPBF systems. Taking into consideration the different national features, such as the specific evaluation culture and the overall perception of evaluation and assessment, the current amount of funding available for R&I and the percentage of it allocated through competition as well as the historical experience in this area, are important when planning to introduce a certain performance based research funding model.

Recommendations:

- Evidence shows that research-performance-based funding systems in the form of introducing assessment to institutional funding have a positive impact on research excellence, thus should be considered an important tool in the reform agenda. Introducing the concept of a RPBF systems is a way to aid policy makers as well as sectorial and institutional management bodies in preparing strategic decisions, influencing the strategic behaviour of research performing organisations hence steering the national research, development and innovation (RDI) system at large;
- The concentration of resources in the best performing institutions could help creating critical mass for excellent scientific output as well as societal and economic impact, although these need to be sufficiently flexible and carefully considered against possible lock-in effects;
- Based on reports given by national representatives, there seems to be a strong need for expanding the evaluation culture based on analytical evidence within the scientific communities and among the policy-makers of the Danube countries, and particularly non-EU member states, towards merit-based, independent and transparent procedures of assessment of the science system. This cultural shift is indispensable to diminish the existing resistance to change and will stimulate performance at the level of individuals, departments, institutions and overall R&I systems;
- As there is no “one-size-fits-all” solution, countries should consider the experiences of existing RPBF systems and make adjustments according to their national specificities and level of ambition. Case studies show that it is easier to implement RPBF mechanisms in a period when the amount of funding for RDI is increasing. The model selected (formula-based, peer review etc.) is as important as the share of funds allocated through a RPBF mechanism;
- A functioning RPBF system can be established either by introducing different RDI assessment methodologies applicable to the different kinds of organisations in a certain sector of the national RDI system (universities, public research organizations), or by including all RDI
organizations in the RPBF system in order to justify the concentration of funding based on merit; however, if the second option is chosen, it is recommended to create different pillars in the RPBF system to account for differences in the nature and mission of the organisations.

- The introduction of a RPBF system requires, in addition to developing a sound R&D assessment methodology, a clear strategy backed by the highest political levels, optimally a minister;
- A gradual introduction of a RPBF system seems to be the most prudent approach, initially involving relatively small shares of funding, in order to avoid negative shocks to the science system. The stability of a functioning R&I system can be supported by introducing a continuous re-engineering process that allows adapting the RPBF systems to changing realities, e.g. in terms of level of funding, thematic priorities, development of R&I capacity (researchers, infrastructure, equipment) or success in attracting competitive funding.

2. **Mix of qualitative and quantitative indicators**

**Background:**

Considering the costs of time and resources involved in introducing a RPBF system, the national conditions as to available budget or diversity in the R&I system is to be accounted for when choosing the specific nature of the RPBF system and the balance of the mechanisms deployed. Recent experience shows that an imperfectly designed metrics-based R&D assessment system bears the risk of creating unintended incentives for generating research outputs focused on quantity rather than quality. The definition of indicators and evaluation criteria to be included in the formula is a key aspect that is particularly to be taken care of. A mixed approach comprising peer review mechanisms based on – or informed by – quantitative analyses seems to be more suitable.

**Recommendations:**

- There is a need for a well-functioning national science information system, in order to facilitate the collection and analysis of indicators. The indicators chosen should be kept simple for the researchers and research administrators, and at the same time relevant enough for expressing the quality of the scientific activity; although it is desirable to develop the indicator systems in consensus with the units to be evaluated, it is also important to realise that the different stakeholders may not have compatible objectives nor do they necessarily all sign up to the objectives that policy-makers may have to change the system; rigidity (or inflexibility) should, therefore, be avoided in newly established PBRF systems to allow system-learning. Although this may seem contradictory, since research information systems require precision to allow meaningful comparisons, it is essential to adjust assessment criteria and indicators to the needs and possibilities;
- Metrics-informed peer-review is a favourable methodology on which to base RDI investment decisions, as it allows for an assessment of the RDI potential based on human expertise while incorporating quantitative (objective) indicators and criteria;
- As far as peer-review is used in determining RPBF, it should be considered to involve experts from other (Danube) countries, in order to increase systemic independence and incorporate an international benchmark of the level of research excellence;
- Autonomous research facilities and universities are crucial to continued scientific development. Most participating countries are on a promising path of reforms to reaching this goal;
- Both qualitative and quantitative indicators have their own strengths and weaknesses; a mix of them, depending on the type of activity assessed, would be mostly advised; choosing quantitative indicators recognised internationally in terms of quality and significance is recommendable in order to allow comparison and accelerate the increase of repute being built-up; for less R&I-competitive EU countries and those associated to Horizon 2020, it is very important to include indicators such as participation in the EU Framework Programme for Research, which is also a sign of the quality of research;
- Indicators as well as evaluation criteria should be chosen in line with the strategic objectives of a research system or institution. For example, for a research system tasked to build-up critical mass of research excellence, the number of doctoral degrees awarded may be a suitable indicator encouraging research entities to invest in doctoral programmes and research; for a country pursuing the goal of creating more impact out of research results, the degree of science-business cooperation or the number (and quality) of interdisciplinary curricula may be suitable assessment criteria.

3. Networking and collaboration

Background:

The presence in the region of both, countries with long-lasting performance based research funding experience and those that are piloting at some extent this mechanism, could be considered as an opportunity for further peer learning activities. Beyond bilateral and regional cooperation, the fact that Danube Region non-EU countries are associated H2020 country offers them access to the capacity building and policy support activities developed under the aegis of different ERA groups or the Commission itself.

Recommendations:

- First analyses feature a large variation of tools and methods for research funding; more intensive exchange of experience is required to build a more robust body of knowledge of current reform practices, thus informing mutual learning;
- For EU countries and those associated to Horizon 2020, the specific objective “Spreading Excellence and Widening Participation” (SEWP) features a range of funding schemes suitable to establish competitive R&I systems at various scales (systemic national, institutional, department level, research area), which should be deployed to induce structural reforms by

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103 The three indicators common in all countries present at the workshop were; share of highly-cited publications, share of third-party funding, share of degree completions.
104 Categorization according to the European and Regional Innovation Scoreboards (http://ec.europa.eu/growth/industry/innovation/facts-figures/scoreboards_en)
modelling suitable system changes based on collaboration with experienced partners, i.e. Teaming, Twinning and ERA Chairs\textsuperscript{106};

- The Danube countries from the region should continue the exchange of experiences and practices in the area of RPBF, through peer learning exercises and bi- or multilateral twinning actions; the Policy Support Facility (PSF) financed from the SEWP budget offers an ideal opportunity to implement such actions, including customized advice services provided by experienced international experts;

- The non-EU MS Danube countries may use the European Neighbourhood Policy Twinning and TAIEX technical assistance instruments and IPA funds in order to foster their capacities in the area of S&T policies, including RPBF;

- The effects and impact of a RPBF system should be monitored constantly. Here the role of regional collaboration, by involving foreign experts from the region, should be foreseen in order to allow for comparative perspectives on the functionality of the RDI system.

8 Conclusions

The series of policy recommendations for non-EU Member States have been developed to inspire systemic and structural reforms in the national R&I policies and systems, particularly in the non-EU Danube countries. In this light, a common feature of the three topic areas covered during the workshop series is that they addressed questions regarding the effective design, influence and implementation of R&I policy around three prevailing aspects regarding research and innovation:

1. **Strategy-building** (longer-term vision considering roles of the quadruple helix of government/ administration, research, industry and business, and civil society actors),

2. **Governance models** (interaction of stakeholders with a key role in specific R&I processes),

3. **System design** (institutional and procedural arrangements and funding systems meeting international (ERA) standards and ensuring compatibility with EU funds and other countries’ R&I systems, respectively).

According to the participants and derived from the feedback of stakeholders that have taken note of the results, the recommendations are highly relevant in that they are likely to be implemented or at least addressed, depending on the individual country. The following aspects have – according to the validation exercise of the recommendations – been considered particularly relevant for national R&I agendas, likely to be followed-up or implemented\textsuperscript{107}:

- **Enhancing the political will for common priority setting between countries**, thus creating critical mass and avoid duplication of efforts hence unnecessary competition of resources in the spirit of a European area of smart specialisation (workshop 1);

\textsuperscript{106} for the specific eligibility and admissibility conditions, see H2020 Work Programme 2016-17: Spreading excellence and widening participation, pp. 17-20
\textsuperscript{107} The information given here reflect the answers to the consultation questions 4 “Please highlight the three recommendations most relevant to your country” (personal opinion or national position) and 5 “Please highlight the three recommendations most likely to be followed-up or implemented in your country” (personal opinion) (cf. section 4.4)
launching political initiatives and communication measures or lobbying, respectively, for non-EU countries to accessing the main concepts of European R&I policy like ERA, the Innovation Union or Smart Specialisation, which involves e.g. participating in monitoring exercises, statistical data compilation or strategy development such as macroregions and RIS3 (workshop 2);

making more and strategic use of existing instruments supporting structural change of R&I systems, first and foremost the H2020 instruments Teaming, Twinning, ERA Chairs and the policy support facility (PSF) supported through the specific objective “Spreading Excellence and Widening Participation”, but also other sub-programmes promoting access to research infrastructures (RI), innovation resources, or international cooperation, as well as funds under shared management such as IPA and EN(P)I, or Commission services like TAIEX (workshops 1-3);

encouraging the use of already tested tools and available models by way of exchanging current or best practices, while adapting them effectively to the national specifics as concerns, e.g. administrative structure, scientific competences, economic structure or industrial capacity (workshops 1-3);

developing strategies and systems with a long-term perspective yet whose implementation is marked by incremental evolutionary approaches, requiring flexible operating systems and decisions that allow for learning and the possibility to readjust the strategy (workshop 1 and 3).

Apart from the specific recommendations drawn from the workshops as the primary output presented in the report, the main conclusion of the policy dialogue on ERA and the Innovation Union is that the format and methodology of the dialogue proved to be well-suited to yield relevant and specific results and create inspiration and momentum among stakeholders to follow-up on the recommendations in the topic areas addressed. In summary, the success factors of the policy dialogue can be summarized as follows:

- Authorities of the respective countries are an integral part of the working groups rather than mere recipients of capacity building measures;
- specific topics of relevance for the countries are pre-determined via a survey;
- events are located in the target countries to reach out and involve the local R&I communities that are not always familiar with the EU-specific concepts and strategies;
- in-depth preparatory work in the run-up to the workshops in form of discussion or background papers create a common point of departure for the discussions, by summarising as far as relevant the overall EU context and the situation in the countries with lower R&I performance as well as the hosting countries specifics;
- a balanced mix of experienced and less-experienced countries is a key pre-condition to foster the exchange of expertise involved in the exercises;
- the consultation of the participants and the wider national stakeholder communities ensures the relevance of the outcomes (in the form of policy recommendation papers) and the sense of ownership and commitment;
- the dissemination of the outcomes is structured based on the local engagement of national stakeholders to address policy makers and managers, which increases the likelihood of measures conceived and implemented in the target countries for follow-up, role-out, upscaling, or piloting.
9 Outlook

As the follow-on activities planned or on their way are illustrating (see section 8 and annexe V), there is scope for real impact created through the policy dialogue subject of this report. The recommendations should inspire also other activities in the Danube-INCO.Net project that are continuing beyond the project’s lifetime. For example, the joint setting or alignment of research and innovation policy priorities in the Danube region covered by the first workshop could be considered in the continuation of the clustering activities carried out within the DANUBE-INCO.NET project (WP3), particularly in the areas of bio-economy and energy policy, and in supporting the aspirations to creating a more coherent R&I policy mix in non-EU Danube region countries addressed by the JRC’s policy mix events (WP4). Due to the high degree of engagement of relevant stakeholders, the recommendations bear the potential to create the commitment in the Danube region to drive forward the R&I policy dialogue itself in the Danube region and feed into other actions. As stipulated in the recommendations, this includes particularly the Horizon 2020 Policy Support Facility and the ‘Spreading Excellence and Widening Participation’ programme, the JRC research and management support actions for the Danube region as well as the support provided through some of the ENI and IPA programmes, as far as applicable.

In light of the key conclusions and with a view to the global picture of the pronounced and persistent gap in R&I performance in Europe between the countries – coined the ‘innovation divide’ – it appears obvious that there remains considerable and still increasing demand for capacity-building activities, particularly, but not exclusively, in the non-EU countries forming part of the Danube region. Although a number of initiatives have been implemented including but not exclusively in the context of the Danube-INCO.Net project to bring those countries closer to European initiatives (e.g. launch of a joint call with the EUREKA initiative), it remains a medium to long-term task to integrating such activities in the strategic national R&I policy design. R&I policy dialogues targeted at European macro-regions with common functional or historical features or of particular political significance as the one covered by this report are an appropriate method to maintain open communication channels. This suggests that region-specific measures (e.g. covering European macro-regions) that have been abolished in H2020 meet future demand and could significantly help bridging the innovation divide through a continued high intensity of cooperation in specific functional and territorial settings.

With this in mind and following the experience and outcomes of the Danube-INCO.NET project at large, a number of project partners have jointly developed a paper that argues for a continuation of macro-region-focused capacity-building actions within the scope of Horizon 2020, and for a debate in the strategic configuration of the Horizon 2020 Programme Committee and considered for the work programmes covering the period 2018-2020. (cf. follow-up activities in Annexe V)

Since the start of the negotiations of the current financial framework and of the programme design of Horizon 2020 (and other R&I relevant programmes of the EU budget, such as the ESIF) in 2010, the challenges identified at that time remain valid and are prone to exacerbrate in light of the fundamental challenges the EU and Europe at large are currently facing. Political leadership will be necessary to reinforce the debate for closer collaboration in research and innovation as the potential key drivers of a more coherent and more balanced Danube region, i.e. addressing the innovation divide. The policy dialogue carried out in the frame of the DANUBE-INCO.Net project demonstrated its valuable role in supporting political processes in general. Continuing this dialogue, therefore, seems pivotal, also with a view to providing a strategic view on the instruments and mechanisms
available to achieve the political goals. Key among these instruments are the Danube Territorial Cooperation Programme (INTERREG), the H2020 package on widening participation and spreading excellence including Teaming, Twinning, ERA Chairs and the policy support facility and its possible mainstreaming across H2020, the mainstream cohesion policy funds, IPA and ENI as well as national initiatives. In the context of the EUSDR, these policy instruments should be deployed in a more coherent way in the spirit of smart specialisation, and complemented by a continued policy dialogue on ERA and the Innovation Union as the “glue” between the various elements.

Finally, initiatives such as the “Stairway to Excellence” project launched by the European Parliament and run by the JRC are important to build up a bank of knowledge and to showcase current practices. Such initiatives should be accompanied by continuous dialogue formats to sustain and integrate lessons learnt into national policy-making. Large-scale strategies and roadmaps like the European Research Area Roadmap and the Innovation Union are well-placed to offering entry points for lower-performing R&I countries to engage – through dialogue with advanced countries – in policy analysis and strategy development exercises, bundling of resources and focused knowledge exchange and competence building in order to inform processes of catching-up with European and international levels of R&I performance.
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Annex I – Survey questionnaire

Danube-INCO.NET

WP 2 Policy Dialogue

Task 2.3 “Innovation Union and ERA in the Danube region”

(Task Leader: DLR/BMBF)

Survey on priority issues to be covered by the Task

Explanatory note:

This questionnaire is designed to facilitate an effective policy dialogue in the Danube region on the priorities of the European Research Area (ERA) Framework and the commitments of the Innovation Union (IU), particularly between EU Member States (MS) and non-MS represented in the Danube-INCO.Net project. It should help identifying progress made to date specifically in the non-EU-MS relating to ERA and the IU, in order to derive priorities for an effective dialogue on R&I policy issues of particular relevance in the context of the Danube-INCO.Net project.

Specifically, the purpose of the questionnaire is

1. to understand the level of awareness regarding the ERA and the IU in the non-MS,
2. to identify priority topics of particular relevance in light of the specific national conditions in the non-MS,
3. to identify already ongoing activities in all partner countries concerning bi- or multi-lateral policy dialogue on ERA / IU in the Danube region,
4. to collect relevant sources of information (of initiatives, in documents) in all partner countries, on which to build the activities of the Task,
5. to inform the three Workshops to be held in the context of Task 2.3 in terms of scope and focus, and
6. to define the final outcome of the Task 2.3 relevant to the all project partners and particularly to non-EU-MS.

Due to the nature of a policy dialogue, included in this survey are only those requirements formulated in the ERA Framework that are addressed to the national governments, not those targeted at the Commission or the stakeholders of the countries’ R&I systems.

Relevant basic information on these two initiatives is provided as weblinks (referred to in the questionnaire). In addition, the annex (excel file) contains two lists with the requirements / commitments stated in the ERA and IU communications respectively. Here, respondents are asked to mark the level of importance directly in the excel sheet (Questions 2.a) and 2.b)). Please note that in order to obtain meaningful results it is important to provide differentiated answers concerning the “importance” of ERA and IU issues for your country, meaning “what issues should we address during the policy dialogue in the context of the Danube-INCO.Net project”.

According to the different focus of each question, the partner group addressed is indicated as non-EU-Member State or all partners, respectively.

Please complete the questionnaire and send it back to
the Task leader, Matthias Woiwode von Gilardi, PT-DLR
(matthias.woiwodevongilardi@dlr.de)
no later than 24 March 2014.

Please state here for which COUNTRY / REGION you respond!

NB: If the respondent represents an EU-MS, please continue with question 4.
1. a) How would you rate the **general level of awareness** of the government of your country (or region) in relation to the European Research Area (ERA) Framework ([http://ec.europa.eu/research/era/era_communication_en.htm](http://ec.europa.eu/research/era/era_communication_en.htm)) and the Innovation Union (IU) ([http://i3s.ec.europa.eu/commitments.html](http://i3s.ec.europa.eu/commitments.html))?  
   NB: please tick one of the boxes by replacing it by an "x".
   □ High  
   □ Moderate  
   □ Low  
   □ Non-existent *(continue with question 3)*

   b) How is this awareness expressed?
   
   NB: for example: participation to policy debates of the EU (e.g. Commission events), bilateral dialogue with individual EU Member States (EU-MS), contribution to EU progress reports, preparation of national reports, process launched on establishing national/regional initiatives concerning ERA or IU etc.

   *Please complete here!*

2. a) Reflecting on your region’s/country’s current policy orientation, how **important** would you rate the individual requirements mentioned in the ERA communication for a policy dialogue in the context of Danube-INCO.Net.  
   → Please mark in annex, table “ERA priorities”, the level of importance for each requirement.

   b) Reflecting on your region’s/country’s current policy orientation, how **important** would you rate the individual commitments of the Innovation communication for a policy dialogue in the context of Danube-INCO.Net.  
   → Please mark in annex, table “IU commitments” the level of importance for each commitment.

3. What are, in your country (or, if unknown or not existing, what should in your opinion be), **currently the three most important ERA or Innovation Union issues** that should be addressed by a bi-regional (EU / non-EU countries) policy dialogue in the context of Danube-INCO.Net?
Report on Innovation Union and ERA Framework implementation in the Danube Region (D2.26)  Danube-INCO.NET

NB: Please consider particularly the 34 commitments of the Innovation Union and the priorities stated in the ERA framework respectively. Specifically, the Commission (DG RTD) publishes every year a set of country fiches which assess Innovation Union (IU) progress at national level, which could be used as a source to identifying priorities.

Please complete here!

Question to all partners

4. What available resources should we use as a basis for our work in Task 2.3 on ERA and IU?

NB: for example: most important EU-level sources such as COM, ERAC, ERAWATCH\textsuperscript{108}, Mutual Learning Seminar (synthesis) reports etc.; specific national-level reports on ERA and IU, incl. inputs to National Reform Programmes (NRP\textsuperscript{109}), already answered questionnaires/synthesis reports etc.; other sources available specifically in your region/country relevant to the topics, incl. e.g. smart specialization peer-review reports; results of projects that you know; studies. Please provide the documents or weblinks to the documents if publicly available.

Please complete here!

Question to all partners

5. Do you have specific case studies or best practice examples in mind that could be worth sharing during the policy dialogue on the IU commitments or the ERA requirements? Please state the particular aspect of each case study / best practice example that might provide solutions to the requirements / commitments stated in the ERA and IU communications.

NB: for example: initiatives at EU/national/regional level addressing IU or ERA issues; programmes at EU/national/regional level that provide incentives for adhering to the IU or ERA goals / principles; results of projects that you know. Please provide related information or weblinks if available.

Please complete here!

\textsuperscript{108} http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/reports/country_rep
\textsuperscript{109} Example: http://ec.europa.eu/europe2020/pdf/nd/nrp2013_austria_de.pdf
6. Do you already have concrete proposals for discussion at the first workshop on ERA and IU to be held in 2014?

*NB: your proposals may address the format or content (considering your answers above) of the workshop*

*Please complete here!*

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**Question to all partners**

7. Are you interested in taking the lead on specific issues in relation to Task 2.3? If yes, which one(s)?

*Please complete here!*

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**Question to all partners**

8. What should in your opinion be the main outcome(s) of Task 2.3?

*NB: Who would use the results and for what purpose?*

*Please complete here!*

---

**Question to all partners**

9. Are there other issues that you would like to have raised in the context of Task 2.3?

*Please complete here!*

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*Thank you for your contribution!*
Annex to questionnaire
“ERA Communication - requirements for Member States”
(http://ec.europa.eu/research/era/era_communication_en.htm

Please insert here the COUNTRY / REGION you represent!

<table>
<thead>
<tr>
<th>Number of requirement (included are MS = Member State)</th>
<th>Description of requirements stated in COM communication (17 July 2012)</th>
<th>Conceivable indicators (see annex to COM communication, 17 July 2012)</th>
<th>Results of the COM survey (presented at ERA adhoc WG EuropSem/ Monitoring, 7 June 2013)</th>
<th>QUESTION 2.a) How important would you rate the individual requirements (columns b and c) mentioned in the ERA communication for your country/region? Please mark the level of importance for each requirement with a cross.</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>high importance</td>
<td>moderate importance</td>
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<tr>
<td>Priority 1</td>
<td>More effective national research systems</td>
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<tr>
<td>MS 1 A</td>
<td>Introduce or enhance competitive funding through calls for proposals and institutional assessments as the main modes of allocating public fundes to research and innovation, introducing legislative reforms if necessary</td>
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<tr>
<td></td>
<td>1. Share of national GBOARD allocated as project-based funding (MS)</td>
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<tr>
<td></td>
<td>ok. All MS allocate a share of research funding through calls for proposals. Institutional funding is linked to research performance.</td>
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</tr>
</tbody>
</table>

Please send the questionnaire to Matthias Woiwode von Gilardi, PT-DLR (matthias.woiwodevongilardi@dlr.de) no later than 24 March 2014.
<table>
<thead>
<tr>
<th>Priority 2</th>
<th>Optimal transnational co-operation and competition: Jointly addressing grand challenges (Joint Programming (JP), Research Infrastructures (RI))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MS 2.1 A</strong></td>
<td>Step up efforts to implement joint research agendas addressing grand challenges, sharing information about activities in agreed priority areas, ensuring that adequate national funding is committed and strategically aligned at European level in these areas and that common ex-post evaluation is conducted.</td>
</tr>
<tr>
<td><strong>2.</strong> Share of institutional funding allocated on a competitive basis (MS);</td>
<td>ok. Present in more than half of MS; Half of national strategies have been proposed/improved and/or adopted in 2013</td>
</tr>
<tr>
<td><strong>3.</strong> Share of institutions applying the core principles for international peer-review (SH);</td>
<td>Survey results show that throughout the EU funding organisations apply most (or all) peer review criteria. (Peer review criteria: excellence, impartiality, transparency, appropriateness of objective, efficiency)</td>
</tr>
<tr>
<td><strong>4.</strong> Assessment of the implementation of joint research agendas addressing grand challenges (MS);</td>
<td>Ok. All MS participate in at least one Article 185 initiative. All MS participating in JPI (with 2 exceptions, where MS have an observer role)</td>
</tr>
<tr>
<td><strong>5.</strong> Share of national public funding allocated to transnationally coordinates R&amp;D as % of GBOARD (MS);</td>
<td></td>
</tr>
<tr>
<td><strong>5a.</strong> Share of joint research agendas initiatives addressing grand challenges subject to common ex-post evaluation (MS)</td>
<td></td>
</tr>
<tr>
<td>MS 2.1 B</td>
<td>Ensure mutual recognition of evaluations that conform to international peer-review standards as a basis for national funding decisions</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>MS 2.1.C</td>
<td>Remove legal and other barriers to the crossborder interoperability of national programmes to permit joint financing of actions including cooperation with non-EU countries where relevant</td>
</tr>
<tr>
<td>MS 2.2 A</td>
<td>Confirm financial commitments for the construction and operation of ESFRI, global, national and regional RIs of pan-European interest, particularly when developing national roadmaps and teh next Structural Fund programmes</td>
</tr>
<tr>
<td>Priority 3</td>
<td>An open labour market for researchers</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td><strong>MS 3 A</strong></td>
<td>remove legal and other barriers to the application of open, transparent and merit based recruitment of researchers</td>
</tr>
<tr>
<td><strong>19. Assessment of the degree of implementation of policies and measures on (MS)</strong></td>
<td>Ok. Survey results show that in terms of open recruitment: vacancy announcements include the job profile, selection panels are set up, applicants have right to receive feedback; HOWEVER, vacancies are published mainly/exclusively on institutions websites and/or other websites</td>
</tr>
<tr>
<td>MS 3 B</td>
<td>remove legal and other barriers which hamper cross-border access to and portability of national grants</td>
</tr>
<tr>
<td>MS 3 C</td>
<td>Support implementation of the Declaration of Commitment to provide coordinated personalised information and services to researchers through the pan-European EURAXESS network</td>
</tr>
<tr>
<td>MS 3 D</td>
<td>Support the setting up and running of structured innovative doctoral training programmes applying the principles for innovative doctoral training</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>MS 3 E</td>
<td>Create enabling framework for the implementation of the HR strategy for researchers incorporating the Charter &amp; Code</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>25. Assessment of the degree of implementation (including financial commitment) of policies and measures supporting an enabling framework for the implementation of the &quot;HR Strategy for Researchers&quot; (MS)</td>
</tr>
<tr>
<td></td>
<td>Strong support for for implementation of the Code and Charter and/or Open recruitment. HOWEVER, survey indicates that around 40% of research performers are not aware of the Code and Charter. 20% or research performers face barriers to implement HR strategies</td>
</tr>
</tbody>
</table>

**Priority 4 Gender equality and gender mainstreaming in research**

<table>
<thead>
<tr>
<th>MS 4 A</th>
<th>create a legal and policy environment and provide incentives to:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>35. Share of female PhD graduates, researchers, senior level in academic position and in top positions (MS)</td>
</tr>
<tr>
<td></td>
<td>ok. Since 2012 14 MS have adopted new measures. Work-life balance measures are implemented by half of research performers; Progress towards the targets of achieving gender equality is monitored by a majority; A minority implemented flexible career trajectories</td>
</tr>
<tr>
<td></td>
<td>36. Assessment of adoption and degree of implementation of any legal and/or policy initiative as well as of incentives, in any of the three areas (MS)</td>
</tr>
<tr>
<td></td>
<td>* remove legal and other barriers to the recruitment, retention and career progression of female researchers while fully complying with EU law on gender equality</td>
</tr>
<tr>
<td></td>
<td>* address gender imbalances in decision making processes</td>
</tr>
<tr>
<td></td>
<td>* strengthen the gender dimension in research programmes</td>
</tr>
<tr>
<td>MS 4 B</td>
<td>Engage in partnerships with funding agencies, research organisations and universities to foster cultural and institutional change on gender - charters, performance agreements, awards</td>
</tr>
<tr>
<td>MS 4 C</td>
<td>Ensure that at least 40% of the under-represented sex participate in committees involved in recruitment/career progression and in establishing and evaluating research programmes.</td>
</tr>
<tr>
<td>Priority 5</td>
<td>Optimal circulation, access to and transfer of scientific knowledge (open access, digital research area)</td>
</tr>
<tr>
<td>MS 5 B</td>
<td>Ensure that public research contributes to Open Innovation and foster knowledge transfer between public sectors through national knowledge transfer strategies</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td>42. Assessment of the degree of implementation of policies to support the contribution of public research to open innovation and public-private mobility (MS)</td>
<td></td>
</tr>
<tr>
<td>Broad support to Open Innovation and knowledge transfer (18 MS/AC have adopted measures since 2012); Survey results show that 605 of the funding organisations support knowledge transfer; However, research performing organisations confront problems when implementing knowledge transfer due to regulations of policies preventing (or not supporting) it.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MS 5 C</th>
<th>Harmonise access and usage policies for research and education-related public e-infrastructures and for associated digital research services enabling consortia of different types of public and private partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>43. Share of MS implementing jointly developed access and usage policies for public e-infrastructures (MS)</td>
<td></td>
</tr>
<tr>
<td>Limited number of measures related to einfrastructures and associated digital research services (but 10 MS have adopted some kind of provision since 2012)</td>
<td></td>
</tr>
</tbody>
</table>
Annex to questionnaire
„Innovation Union – commitments“
(source: http://i3s.ec.europa.eu/commitments.html)
NB: please click on the icon next to each individual commitment in order to navigate to the commitment text, details on objectives, implementation, milestones, background documents etc.

QUESTION 2.b)
How important would you rate the individual commitments of the Innovation communication for your country/region?

Please mark the level of importance for each commitment with a cross.

Commitment 1 (Last update: 09/06/2011)
Member State Strategies for Researchers’ Training and Employment Conditions
<table>
<thead>
<tr>
<th>Commitment</th>
<th>(Last update)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-A</td>
<td>05/06/2012</td>
<td>&quot;Personalised&quot; University Ranking</td>
</tr>
<tr>
<td>2-B</td>
<td>30/11/2011</td>
<td>Knowledge Alliances and Skills for Innovation</td>
</tr>
<tr>
<td>3</td>
<td>24/10/2013</td>
<td>E-Skills</td>
</tr>
<tr>
<td>4</td>
<td>09/08/2012</td>
<td>European Research Area Communication</td>
</tr>
<tr>
<td>4.1</td>
<td>29/05/2012</td>
<td>Comparable Research Career Structures (European Framework for Research Careers)</td>
</tr>
<tr>
<td>Commitment</td>
<td>Last update</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>Commitment 4.2</td>
<td>05/06/2012</td>
<td>ERA Framework- Quality of Doctoral Training</td>
</tr>
<tr>
<td>Commitment 4.3</td>
<td>11/10/2011</td>
<td>Creation of Pan-European Pension Funds for Researchers</td>
</tr>
<tr>
<td>Commitment 5</td>
<td>10/06/2011</td>
<td>European Research Infrastructures</td>
</tr>
<tr>
<td>Commitment 6</td>
<td>02/12/2011</td>
<td>EU Research and Innovation Programmes</td>
</tr>
<tr>
<td>Commitment 7</td>
<td>19/06/2012</td>
<td></td>
</tr>
<tr>
<td>Commitment 8 (Last update: 09/06/2011)</td>
<td></td>
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<tr>
<td>-------------------------------------------------</td>
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<tr>
<td>Strengthen the Science Base for Policy Making, &quot;European Forum on Forward Looking Activities&quot;</td>
<td></td>
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<table>
<thead>
<tr>
<th>Commitment 9 (Last update: 20/09/2012)</th>
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<tbody>
<tr>
<td>European Institute of Innovation and Technology (EIT)</td>
<td></td>
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<tr>
<th>Commitment 10 (Last update: 18/11/2013)</th>
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<tbody>
<tr>
<td>Access to Finance - Innovation</td>
<td></td>
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<tr>
<th>Commitment 10 (RSFF) (Last update: 29/05/2012)</th>
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</thead>
<tbody>
<tr>
<td>Risk-Sharing Finance Facility (RSFF)</td>
<td></td>
</tr>
<tr>
<td>Commitment 11 (Last update: 16/06/2011)</td>
<td></td>
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<tr>
<td>Access to Finance - Venture Capital</td>
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</tbody>
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<tr>
<th>Commitment 12 (Last update: 24/10/2013)</th>
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<tr>
<td>Access to Finance - Matching</td>
<td></td>
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</table>

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<tr>
<th>Commitment 13 (Last update: 26/05/2011)</th>
<th></th>
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<tbody>
<tr>
<td>Mid-term Review of the R&amp;D&amp;I State AID Framework</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Commitment 14 (Last update: 09/06/2011)</th>
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<tbody>
<tr>
<td>EU Patent</td>
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<tr>
<th>Commitment 15 (Last update: 10/06/2011)</th>
<th></th>
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<tbody>
<tr>
<td>Screening of the Regulatory framework</td>
<td></td>
</tr>
<tr>
<td>Commitment 16 (Last update: 30/11/2011)</td>
<td></td>
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<tr>
<td>----------------------------------------</td>
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<tr>
<td>Standardisation Strategy for Europe 2020</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Commitment 17 (Last update: 06/02/2012)</th>
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<tbody>
<tr>
<td>Public Procurement - Commission Support</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Commitment 17 (cont) (Last update: 10/06/2011)</th>
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<tbody>
<tr>
<td>Joint Public Procurement</td>
<td></td>
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<thead>
<tr>
<th>Commitment 18 (Last update: 19/06/2012)</th>
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<tbody>
<tr>
<td>Eco-Innovation</td>
<td></td>
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<table>
<thead>
<tr>
<th>Commitment 19-A (Last update: 24/10/2013)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Creative Industries</td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>Last Update</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>19-B</td>
<td>31/10/2013</td>
</tr>
<tr>
<td>20</td>
<td>17/08/2012</td>
</tr>
<tr>
<td>21</td>
<td>09/06/2011</td>
</tr>
<tr>
<td>22</td>
<td>24/10/2013</td>
</tr>
<tr>
<td>23</td>
<td>26/05/2011</td>
</tr>
</tbody>
</table>
### Role of Competition Policy in Safeguarding Against the Use of IPRs for Anti-Competitive Purposes

<table>
<thead>
<tr>
<th>Commitment</th>
<th>Last update</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-25</td>
<td>30/11/2012</td>
<td>Maximising Social and Territorial Cohesion</td>
</tr>
<tr>
<td>26</td>
<td>24/10/2013</td>
<td>European Social Innovation Pilot</td>
</tr>
<tr>
<td>27-A</td>
<td>30/10/2013</td>
<td>Public Sector Innovation Scoreboard</td>
</tr>
<tr>
<td>27-B</td>
<td>31/10/2013</td>
<td>Research Programme on Public Sector and Social Innovation</td>
</tr>
<tr>
<td>Commitment</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------</td>
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<td></td>
</tr>
<tr>
<td>28</td>
<td>Consultation of Social Partners on Interaction between the Knowledge Economy and the Labour Market</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>European Innovation Partnerships</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Retaining and Attracting International Talent</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Scientific Cooperation with third Countries</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Towards Global Research Infrastructures</td>
<td></td>
</tr>
<tr>
<td>Commitment 33</td>
<td>Last update: 02/12/2011</td>
<td></td>
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<td></td>
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<tr>
<td>Member States R&amp;I Systems</td>
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<table>
<thead>
<tr>
<th>Commitment 34-A</th>
<th>Last update: 16/05/2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of an Innovation Headline Indicator</td>
<td></td>
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<table>
<thead>
<tr>
<th>Commitment 34-B</th>
<th>Last update: 30/10/2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Union Scoreboard</td>
<td></td>
</tr>
</tbody>
</table>
Annex II – First Workshop on ERA and Innovation Union: Transnational cooperation of national programmes and research infrastructures

II.1 Agenda

Agenda

Workshop on ERA and Innovation Union: transnational cooperation of national programmes in the Danube region

Thursday 10 July, 2014

(Hotel Park), Serbia

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 – 09:30</td>
<td>Registration</td>
</tr>
<tr>
<td></td>
<td><strong>Moderators:</strong></td>
</tr>
<tr>
<td></td>
<td>Matthias Woiwode von Gilardi, German Aerospace Center (DLR), Project Management Agency of the Federal Ministry of Education and Research (BMBF);</td>
</tr>
<tr>
<td></td>
<td>Prof. dr Djuro Kutlaca, Mihajlo Pupin Institute (IMP), Serbia</td>
</tr>
<tr>
<td>09:30 – 09:45</td>
<td>Welcome</td>
</tr>
<tr>
<td>09:30 – 10:45</td>
<td><strong>Scope and objectives of the Workshop</strong></td>
</tr>
<tr>
<td></td>
<td>by Matthias Woiwode von Gilardi, DLR and Prof. dr Djuro Kutlaca, IMP</td>
</tr>
<tr>
<td>9:45 – 10:45</td>
<td><strong>ERA progress on transnational cooperation of national programmes and research infrastructures: EU-MS policy perspective</strong></td>
</tr>
<tr>
<td></td>
<td>by Martin Schmid, Federal Ministry of Science, Research and Economy, EU-Research Policy and Coordination, Austria</td>
</tr>
<tr>
<td></td>
<td><strong>Key issues concerning transnational cooperation of national programmes from the non-EU perspective</strong></td>
</tr>
<tr>
<td></td>
<td>Dr Viktor Nedović, Ministry of Education, Science and Technological Development, Republic of Serbia</td>
</tr>
<tr>
<td></td>
<td><strong>State-of-play and key issues of transnational cooperation of national programmes and research infrastructures in the Danube region: lessons from previous initiatives</strong></td>
</tr>
<tr>
<td></td>
<td>by Ulrike Kunze, German Aerospace Center (DLR), Project Management Agency of the Federal Ministry of Education and Research</td>
</tr>
<tr>
<td>10:45 – 11:00</td>
<td>Discussion</td>
</tr>
<tr>
<td>11:00 – 11:15</td>
<td>Coffee break</td>
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</tbody>
</table>

Roundtable

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:15 – 12:00</td>
<td>Results and “take-aways” from the last “Ulm follow-up” meeting on 27 May 2014 by all country representatives</td>
</tr>
<tr>
<td>12:00 – 13:00</td>
<td>lunch break</td>
</tr>
</tbody>
</table>
Practical examples and current initiatives for joint bi- and multilateral programmes and funding

13:00 – 14:30
- Participation of non-EU-MS in Joint Programming Initiatives: examples from Moldova
  by Igor Serotila, Adviser to the President of the Academy of Sciences of Moldova (ASM)
- Employing EUREKA for transnational project funding in the Danube region
  by Ulrike Kunze, German Aerospace Center (DLR), Project Management Agency of the Federal Ministry of Education and Research (BMBF)
- The Science Link project: connecting research infrastructures in the Baltic Sea Region and facilitating access for businesses and researchers
  by Dr. Uwe Sassenberg, Director Science Link Project, Deutsches Elektronen-Synchrotron (DESY), Project Management Agency of the Federal Ministry of Education and Research (BMBF)
- Extreme Light Infrastructure (ELI) – example for transnational infrastructure development?
  by Ales Hala, Head of Centre for Innovation and Technology Transfer for projects ELI Beamlines & HiLASE, Institute of Physics, Academy of Sciences of the Czech Republic

14:30 – 15:00 Coffee break

Interactive working sessions on success factors: what works, what does not?
(discussion – based on guiding questions – of successful working models for deployment in Danube countries, particularly non-EU Member States)

15:00 – 15:45 Session 1: aligning national funds through synchronisation and harmonisation
  Moderator: Martina Hartl, Federal Ministry of Science, Research and Economy, International Research Cooperation, Austria

15:45 – 16:30 Session 2: identifying and strengthening synergies between programme funds of the EU (incl. H2020, ESIF, IPA, ENPI), national and regional sources
  Moderator: Adrian Pascu, Senior adviser, Directorate Programs for European and International RDI Priorities, Ministry of National Education, Romania

16:30 – 16:45 Coffee break

16:45 – 17:30 Session 3: transnational cooperation of research infrastructures.
  Darko Djukic, Innovation Expert, World Bank

17:30 – 18:00 Identifying measures to be recommended for enhancing progress particularly in the non-EU countries
  by MPI and DLR

18:00 End of workshop

II.2 Guiding questions for discussion

Roundtable on the results and “take-aways” from the last “Ulm follow-up” meeting on 27 May 2014

1. Transnational cooperation in the Danube region is a challenge, especially since the region is heterogeneous (EU Member States and Non-Member States, potential and candidate countries, neighbourhood countries): What are the opportunities, where do you see barriers
in the **coordination of the different parallel initiatives** (i.e. in the policy dialogue) and in the coordination of funds for the Danube region?

2. **What lessons can we draw from recent experiences** of joint R&I funding? (see also discussion paper, section 4)

3. What is the **short-term goal in your country** in terms of deepening R&I cooperation in the Danube region?

### Session 1: Joint programming / aligning national funds through synchronisation and harmonisation

4. What are the main constraints for non-EU Member States to **participate in JPI’s**?

5. What can be learnt from experience made by public authorities participating in JPI’s (particularly Moldova) in their effort to aligning their programmes and funding in order to from JPIs?

6. How can the **ERA-NET Cofund** scheme be employed to advance the implementation of joint activities in the Danube region?

7. To what extent are the **Teaming and Twinning** schemes regarded as suitable instruments for less-performing Member States (MS) and associated countries (AC) in order to promote the compatibility of funding systems and the development of joint research agendas in the Danube region? How are these schemes addressed in your country, how many proposals are in the pipeline, and who are the targeted “leading” partner institutions?

### Session 2: identifying and strengthening synergies between programme funds of the EU (H2020, ESIF, IPA, ENPI) and with national and regional funding sources

8. According to the GPC expert groups, the **lack of strategic priority-setting** may be the main barrier to joint programming in the future. Can this be confirmed from the perspective of Danube countries? What are the reasons and how can this problem be addressed? How could the opportunities promoted by the concept of **smart specialisation** be seized for matching R&I priorities of countries and regions in the Danube area? How could the S3-Platform be fully exploited for the Danube region?

9. Are there intentions or already activities in all Danube countries to develop national ERA strategies and initiatives, as suggested by the Competitiveness Council, linking to the ERA roadmap at European level planned for mid-2015?

10. How are Danube countries aiming at creating a coherent policy mix of EU, national and regional funding instruments for R&I? Are there dedicated attempts to promote coordination and synergies between programmes in support of joint calls, joint programmes or the development of research infrastructures?

11. Are opportunities for using ESIF, IPA or ENPI sources for joint programmes being explored? How can non-EU-Member States mobilise IPA and ENPI sources for participating in ERA-Nets?

12. Are there any concrete actions foreseen or implemented in the Danube region?

### Session 3: transnational cooperation of research infrastructures

13. What are the **main constraints for advancing research infrastructures** of European interest in the Danube region and for providing access to users (researchers, businesses)?

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14. **What role can Horizon 2020 play** to enhance the transnational cooperation on RI? E.g. to what extent does the current **Work Programme 2014-2015 of Horizon 2020** offer real opportunities for research infrastructures located in the Danube region to attract excellent researchers? And, conversely, how can research groups in the Danube region be supported in accessing excellent research infrastructures in Europe?

15. What are appropriate measures for your country or organisation to **increase the capacity of research infrastructures and research groups in the Danube region**?
Annex III – Second Workshop on ERA and Innovation Union: European Research and Innovation Programmes: fostering the participation of Danube region stakeholders in Horizon2020 with a special focus on SMEs

III.1 Agenda

Fostering the participation of Danube region stakeholders in Horizon2020 with a special focus on SMEs

SECOND ERA WORKSHOP
Thursday, 23 April, 2015
Kiev, Ukraine

Agenda

Conference hall of National Academy of Science of Ukraine, Volodymyrska Street 55, Kiev, 01030

<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
<th>Speaker/Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 – 09:30</td>
<td>Arrival and welcome coffee</td>
<td></td>
</tr>
<tr>
<td>09:30 – 10:30</td>
<td>INTRODUCTION</td>
<td>Moderator – Oleg Rubel</td>
</tr>
<tr>
<td>09:30 – 09:50</td>
<td>Welcome</td>
<td>Liliia HRYNEVYCH, Parliament of Ukraine Volodymyr EMELYANOV, NASU Nina HUMAROVA, IMPEER</td>
</tr>
<tr>
<td>09:50 – 10:10</td>
<td>Welcome and short presentation of the Project Danube-INCO.NET</td>
<td>Elke DALL, Centre for Social Innovation (ZSI)</td>
</tr>
<tr>
<td>10:10 – 10:20</td>
<td>Scope and objectives of the Task 2.3 in its context of WP 2 of the Danube-INCO.NET</td>
<td>Matthias WOIWODE VON GILARDI, German Aerospace Centre (DLR)</td>
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<tr>
<td>10:20 – 10:30</td>
<td>Scope and objectives of the workshop</td>
<td>Oleg RUBEL, IMPEER</td>
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<tr>
<td>Session 1</td>
<td>EU RESEARCH AND INNOVATION PROGRAMMES: POLICY CONTEXT, BASIC FEATURES AND STATE-OF-PLAY</td>
<td>Moderator – Matthias WOIWODE VON GILARDI (DLR)</td>
</tr>
<tr>
<td>10:30 – 11:30</td>
<td>EURA and IU as a new trend of European science development</td>
<td>Martina HARTL, Ministry of science, research and economy, Austria (BMWFV)</td>
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<tr>
<td>Time</td>
<td>Session Activity</td>
<td>Speaker(s)</td>
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<tr>
<td>10:50 – 11:10</td>
<td>HORIZON2020 as a real tool for reinforcement of R&amp;I activities</td>
<td>Henning GADEKE, Federal Ministry of Education and Research, Germany</td>
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<tr>
<td>11:10 – 11:30</td>
<td>Questions</td>
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<tr>
<td>11:30 – 12:00</td>
<td>Coffee break</td>
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<tr>
<td>12:00 – 13:30</td>
<td>DEVELOPMENT OF THE INSTITUTIONAL BASE FOR IMPLEMENTATION OF HORIZON 2020</td>
<td>Moderator – Stella SHAPOVAL, Ministry of education and science of Ukraine</td>
</tr>
<tr>
<td>12:00 – 12:15</td>
<td>EUSDR as a platform for research and innovation development in the Danube Region (PA7, PA8)</td>
<td>Oleg RUBEL, IMPEER, Igor STUDENNIKOV, Centre for regional studies</td>
</tr>
<tr>
<td>12:15 – 12:30</td>
<td>Setting up a functioning NCP system and other support mechanisms for research institutions, HEI’s and SME’s: Experience from an EU13 member state</td>
<td>Ivan FILUS, BIC Bratislava</td>
</tr>
<tr>
<td>12:30 – 12:45</td>
<td>An Overview of R&amp;I Initiatives in Bosnia and Herzegovina</td>
<td>Siniša MARČIĆ, Ministry of Science and Technology of the Republic of Srpska; Bosnia and Herzegovina</td>
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<tr>
<td>12:45 – 13:00</td>
<td>Development of functional platform for implementation of HORIZON 2020 in Moldova</td>
<td>Lidia ROMANCIUC, Center of International Projects (CIP) AS of Moldova</td>
</tr>
<tr>
<td>13:00 – 13:15</td>
<td>Progress of the institutional framework for implementation of R&amp;I Programs in Ukraine</td>
<td>Stella SHAPOVAL, Ministry of education and science of Ukraine</td>
</tr>
<tr>
<td>13:15 – 13:30</td>
<td>Capacity of NCP in Ukraine as a system of facilitation of the Horizon 2020 operation</td>
<td>Yegor DUBYNSKYI, Ukrainian State Centre on International Education</td>
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<tr>
<td>13:30 – 14:30</td>
<td>Lunch</td>
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<tr>
<td>Open discussion 1</td>
<td>SMEs Involvement in HORIZON-2020</td>
<td>Moderator – Jürgen RAIZNER, Steinbeis Danube Center, Germany</td>
</tr>
<tr>
<td>14:30 – 16.00</td>
<td>Role of SMEs in the Danube region development</td>
<td>On the screen (by Oleg RUBEL, IMPEER)</td>
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<td>Sharing of the experience of European SMEs involvement in ERA and IU</td>
<td>Jürgen RAIZNER, Steinbeis-Donau-Zentrum</td>
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<td>Best practices in SMEs successful involvement in Horizon 2020: examples in EU new-member states</td>
<td>Stefan VRATNY, BIC Bratislava, Slovak Republic</td>
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<tr>
<td></td>
<td>Experience of SMEs in EU and national programs,</td>
<td>Yavor YOTOV, Autonomous</td>
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<tr>
<td>16:00 – 16:30</td>
<td>Coffee break</td>
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<tr>
<th>Topic</th>
<th>Presenter/Institution</th>
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<tbody>
<tr>
<td>barriers and stimulating factors for fostering SME's involvement in R&amp;D activities and programs</td>
<td>Platform for Civil Air Services, BG</td>
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<tr>
<td>SMEs involvement in HORIZON 2020: case of Moldova</td>
<td>Diana GROZAV, Center of International Projects</td>
</tr>
<tr>
<td>Start up support in Vinkovci</td>
<td>G. Josip GILJA, Technology Park Ltd., Vinkovci</td>
</tr>
<tr>
<td>SMEs Involvement in R&amp;I examples in Ukraine</td>
<td>Valentina STOYKOVA, Fund of Entrepreneurship Support, Ismail, Ukraine - tbc</td>
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<tr>
<td>Time</td>
<td>Session</td>
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| 16:30 – 17:30 | Open discussion 2: ROLE OF THE DANUBE-INCO.NET PROJECT IN FOSTERING OF SMEs INVOLVEMENT IN HORIZON 2020 | Moderator – Elke DALL, ZSI  
Jürgen RAIZNER, Steinbeis Danube Center, Germany  
Olga YERMAKOVA, IMPEER  
Volodymyr POLTORAK, BIO-TOP  
Elke DALL, ZSI  
Olha KRASOVSKA, The Institute for Economic Research and Policy Consulting (IER)  
Dorothea HAAS, Steinbeis Europa Center  
Slaven BOŠNJAK, Aranea ltd  
Alexandr KLYMCHUK, Centre of technology transfer of Odessa National Polytechnic University |
| 17:30 – 18:00 | SME’s involvement to the HORIZON 2020 (capacity, tool, opportunity) | Siniša MARČIĆ, Ministry of Science and Technology of the Republic of Srpska; Bosnia and Herzegovina  
Stella SHAPOVAL, Ministry of education and science of Ukraine  
Henning GÄDEKE, Federal Ministry of Education and Research, Germany  
Martina HARTL, Ministry of science, research and economy, Austria (BMWFFW)  
Matthias WOIWODE VON GILARDI (DLR) and Oleg RUBEL (IMPEER) |
| 18:00         | End of the Meeting                                                       |                                                                             |
III.2 Guiding questions for discussion

**Session 1** EU RESEARCH AND INNOVATION PROGRAMMES: POLICY CONTEXT, BASIC FEATURES AND STATE-OF-PLAY

1. How can a country participating in Horizon 2020 make best use of the policy debate at European level, e.g. in the frame of ERAC, in order to influence the European R&I agenda set within H2020 hence seizing the funding opportunities deriving from it?
2. To what extent and how should a country align its national R&I system with EU standards (towards more compatibility)?
3. What concrete outcomes of previous initiatives (Steering Platform on Research for the Western Balkan countries, WISE, JRC support etc.) can help policy-makers in mobilizing research institutes, universities, SME’s and researchers and innovators to engage in Horizon 2020? Are there tools (e.g. partner search), data sets or similar results available to both build capacity among the actors (e.g. matching needs, capabilities and R&I priorities with European partners)?
4. What joint or individual countries’ actions, building on previous outcomes, could be recommended to promoting H2020 participation?

**Session 2** DEVELOPMENT OF THE INSTITUTIONAL BASE FOR IMPLEMENTATION OF HORIZON 2020

5. How can non-EU Member States effectively use the specific measures under Horizon 2020 tailored to “spreading excellence and widening participation” (Teaming, Twinning, ERA Chairs, Policy Support Facility) as well as the NCP Academy and other (trans)national programmes (INTERREG Danube, IPA, ENPI), in order to boost participation in the European Research Area?
6. (How) should the R&I profile of a country (STI capacities, strengths, thematic priorities/societal challenges) impact on the organisation of the national support system for Horizon 2020 (e.g. concentrating support on national priority fields)?

**Open discussion 1:** SME Involvement in HORIZON 2020

7. Considering the various experiences across Europe and world-wide, what could be appropriate policy options to identify, mobilise and support SME’s for accessing competitive Horizon 2020 funds?
8. What specific determinants are to be considered (e.g. national economic and industrial structure; generic vs. SME-specific measures)?

**Open discussion 2:** ROLE OF THE DANUBE-INCO.NET PROJECT IN FOSTERING OF SMEs INVOLVEMENT IN HORIZON2020

9. How should the Danube-INCO.Net project further support increased participation and integration of non-EU Member States in H2020 and the ERA beyond the workshop?

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111 EU member states and countries associated to Horizon 2020
112 in accordance with Article 6.3 of ERAC’s Rules of Procedure
113 STI = science, technology and innovation
Annex IV – Third Workshop on ERA and Innovation Union: Performance-based research funding – towards more effective national research and innovation systems in the Danube region

IV.1 Agenda

**Workshop on**

ERA and Innovation Union: Performance-based research funding – towards more effective national research and innovation systems in the Danube region

June 23, 2016
Chisinau (Republic of Moldova)

**Venue:**
Regency Hotel, 17 Sfatul Tarii str. MD 2012 Chisinau, Republic of Moldova

**Draft Agenda**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
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<tbody>
<tr>
<td>09:00 – 09:30</td>
<td>Registration and coffee/tea</td>
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<tr>
<td>09:30 – 11:00</td>
<td>Introductory session</td>
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<td>Welcome remarks and setting the scene</td>
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<td><em>Acad. Ion TIGHINEANU, First Vice-President of the Academy of Sciences of Moldova</em></td>
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<td><em>Matthias Woiwode von GILARDI, DLR Project Management Agency, Germany</em></td>
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<td></td>
<td>Research Performance Based Funding Systems: a Comparative Assessment</td>
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<td><em>Thomas ZACHAREWICZ, Joint Research Centre</em></td>
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<td></td>
<td>Q&amp;A</td>
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<tr>
<td>11:00 – 11:20</td>
<td>Coffee break</td>
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</table>
## Examples of using performance based funding (PBF) in research & innovation funding

- **Universities in Austria**  
  *Mag. Georg TUMMELTSHAMMER, Federal Ministry of Science, Research and Economy, Austria*

- **An example from institutional funding of non-university research organisations:**  
  *Germany's Pact for Research and Innovation*  
  *Dr. Birgit Wetterauer, Federal Ministry of Education and Research, Germany*

- **Pilot model of performance based funding in Croatian research system: challenges and future steps**  
  *Ms. Miljenka KUHAR, Ministry of Science, Education and Sports of Croatia*

- **Introducing PRFS in the Czech Republic**  
  *Prof. Vlastimil RUZICKA, Technology Centre of the Czech Academy of Science*

- **Romanian example of using PBF in research & innovation funding**  
  *Ms. Cristina ANANIA, National Authority for Scientific Research and Innovation, Romanian Office for Science and Technology to EU*

- **Slovene research and innovation policy and its landscape**  
  *Urban KRAJCAR, Ministry of Education, Science and Sports of Slovenia*

### Q&A

### 11:20 – 13:00

### 13:00 – 14:00

**Lunch**

### 14:00 – 15:40

### Discussion session/groups working

**Possible questions:**

1. Assessing the quality of research-performing organisations: who, how and based on what?
2. The current challenges of introducing evidence/merit-based funding decisions within the R&I systems of the non-EU countries
3. PBF in case of competitive versus institutional funding
IV.2 Guiding questions for discussion

Tour de table:

- To what extent is performance embedded into national research and innovation strategies and current funding practices of the Danube countries?

Methodological aspects:

- What are the preconditions to be fulfilled prior to the introduction of a certain performance-based funding system?
- Peer reviews versus bibliometric approaches: is there a clear ratio between costs and effectiveness for the both models?
- How to take into account the specificities of scientific fields in performance assessment?
- What are the criteria on which research outputs should be assessed?
- Are performance contracts diminishing the autonomy of research performing organizations (especially in the case of universities)?

Strategic aspects:

- Which should be the suitable share of performance-based research funding from the overall R&D funding? Is there a need for certain non-performance based funding that will ensure the long-lasting stability of the research performing institutions?
- Which is the **impact of the performance-based research funding** at the institutional level?
- How to implement performance-based funding systems in a period when the funding of public research performers is not increasing? How to avoid stakeholder’s reluctance in the context of budgetary scarcity in the area of R&D funding (especially relevant for the Danube non-EU MS)?

**The way forward:**
- What are the **short-term actions** to be undertaken by the non-EU Danube Countries in order to include performance research funding principles within the national R&D policies?
- What are the **needs of expertise** in this regard to be offered by the EU Member States (from the Danube region)?
- To what extent are **existing support initiatives and tools** suitable for building capacities of the Danube countries in the area of PBF? Is there a need for a specific regional initiative/project supported by the European Commission?
Annex V – Dissemination Record (selection)

Websites

<table>
<thead>
<tr>
<th>Title/ occasion</th>
<th>URL</th>
<th>Target group</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>policy recommendations on performance based funding/ national R&amp;I systems</td>
<td><a href="http://internationales-buero.de/de/4523.php">http://internationales-buero.de/de/4523.php</a></td>
<td>research organisations, policy makers, public administrations, project partners (Germany)</td>
<td>June 2016</td>
</tr>
<tr>
<td>policy recommendations on joint programming and research infrastructures</td>
<td><a href="http://danube-inco.net/object/event/13151">http://danube-inco.net/object/event/13151</a></td>
<td>research organisations, policy makers, public administrations, project partners in the Danube region and Europe</td>
<td>July 2014</td>
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Conferences

<table>
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<tr>
<th>Title/ occasion</th>
<th>Target group</th>
<th>Time, Place</th>
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<tbody>
<tr>
<td>“Transnational cooperation of national programmes and research infrastructures in the Danube Region – Policy Recommendations”; “Enhancing transnational research &amp; innovation cooperation in the Danube Region: Joint EUREKA – Danube-INCO.NET workshop”</td>
<td>EUREKA stakeholders (National Project Coordinators; policy-makers; fund managers)</td>
<td>December 2014, Vienna, Austria</td>
</tr>
<tr>
<td>“Horizon 2020 – Supporting Excellent Research and Innovation in Europe and the Danube Region”; Conference “European Funding Opportunities for Competitiveness and Innovation in the Danube Region”</td>
<td>Danube region politicians, R&amp;I policy-makers, fund managers, beneficiaries</td>
<td>December 2013, Stuttgart, Germany</td>
</tr>
<tr>
<td>“Innovation Divide, Smart Specialisation and R&amp;I Synergies”; ERA Fellowships summer school (Campus Week Bonn)</td>
<td>“EU13” HEI and RTO administrators and researchers, fund managers, H2020 and ESIF project owners (including Teaming and Twinning)</td>
<td>September 2016, Bonn, Germany</td>
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### Follow-up and other activities

<table>
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<tr>
<th>Title/ occasion</th>
<th>Target group</th>
<th>Date</th>
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<tbody>
<tr>
<td>Input to a STOA project (European Parliament), aiming to promote specific recommendations concerning the participation of EU-13 in Horizon 2020</td>
<td>European Parliament; NCP Academy – Legal and Financial NCP’s</td>
<td>December 2016</td>
</tr>
<tr>
<td>Article “Unlocking the full European R&amp;I potential in the European Research Area: the “widening participation” approach of the EU”</td>
<td>researchers, developers and scientists interested in cross-border projects; research institutions, universities, intermediaries and companies; key persons from corporate planning, politics and administration seeking access to research and education practices abroad; German national staff from federal and state ministries ministries and agencies</td>
<td>2015</td>
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