



STI Policy recommendations: “EU-EaP beyond 2020”

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Abbreviations

BERD	Business Expenditure on Research and Development
COSME	Competitiveness of Enterprises and Small and Medium-sized Enterprises
COST	European Cooperation in Science and Technology
CSA	Coordination and Support Action
CSO	Committee of Senior Officials (COST)
DG NEAR	Directorate General Neighbourhood and Enlargement Negotiations
DG RTD	Directorate-General Research & Innovation
DG GROW	Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs
DG EAC	Directorate-General Education, Youth, Sport and Culture
EaP	Eastern Partnership
EaPTC	Eastern Partnership Territorial Cooperation
EC	European Commission
ECCP	European Cluster Collaboration Platform
EEAS	European Union External Action Services
EEN	Enterprise Europe Network
ENI	European Neighbourhood Instrument
ENP	European Neighbourhood Policy
ERA	European Research Area
ETF	European Training Foundation
EU	European Union
FP7	Framework Programme 7
GDP	Gross Domestic Product
GERD	Gross Expenditure on Research and Development
GITA	Georgia's Innovation and Technology Agency
IPR	Intellectual Property Rights
JPI	Joint Programming Initiatives
JRC	Joint Research Centre
NARD	National Agency for Research and Development
NCP	National Contact Point
PSF	Policy Support Facility
RI-Links2UA	Research and Innovation Links towards Ukraine
R&I	Research and Innovation
S3	Smart Specialisation Strategie
SDF	Science Development Foundation (Azerbaijan)
SFIC	Strategic Forum for International S&T Cooperation
SMEs	Small and Medium Enterprises
SRNSFG	Shota Rustaveli National Science Foundation of Georgia
STI	Science, Technology and Innovation
TAIEX	Technical Assistance and Information Exchange Instrument

Executive Summary

This document provides a concise description of existing challenges and concrete policy recommendations regarding the further STI cooperation between the EU and the countries of the Eastern Partnership (EaP). The recommendations are rooted to the results and observations during the fact-finding missions implemented in every EaP country in the context of the EaP PLUS' H2020 Coordination and Support Action; to other reports and deliverables of that project; as well as to the series of Peer Reviews that have been implemented in the EaP countries in the recent years.

The focus of these recommendations is on the strengthening of the EU – EaP STI cooperation complementing the recommendations of the peer reviews, which mainly address the improvement of the national STI systems in the EaP countries. They are directed to various target groups, most prominently to the EU Commission; to actors on the policy level of EU Member States or EaP countries; to other R&D stakeholders in the EaP countries (e.g. researchers and research performing institutions), and others.

The recommendations are structured in four chapters:

A. Recommendations addressing policy issues

Here emphasis is given to the important role the 'EaP Panel on R&I' has played these last years in providing information on all spectrum of activities put in place by the EC to promote the cooperation with the EaP countries. The recommendations are focussing on the need to continue the functioning of that Panel but in a maybe more interactive way, i.e. increasing the possibilities of the EaP countries to contribute to the agenda and to present developments and good practice examples. That should be linked to a broader and more adequate representation of the EaP countries, as well as to an increased participation of the EU member states.

The association of four EaP countries to H2020 also constitutes a major development in the policy field. The recommendations here focus on the need to maintain the momentum and to continue the association to the forthcoming Horizon Europe Framework Programme, as well as to the need to support the association through widening actions but also through the modernization of the STI systems in EaP and the renewal of research infrastructures.

B. Recommendations that focus directly on the transition from Horizon 2020 to Horizon Europe;

Here emphasis is given to the widening measures that need to continue, to the COST programme that is still not fully exploited as a networking tool, as well as to incentives that the countries should develop for a stronger participation in the Framework Programme.

In parallel, specific recommendations are given for improving the representation of the EaP countries in the Programme Committees through training activities for the representatives, assessment of their performance, transfer of best practices from the EU member states, etc.

The NCP systems in the EaP countries should also be further strengthened through training, financial support, assessment of their performance, etc.

From the researchers' perspective, the major barriers are still linked to the optimization of the information flow and training in the Framework Programme's procedures, as well as to the persisting need for mobility and networking with EU researchers. In parallel, the potential of EU COFUND activities still need to be further exploited by the EaP countries.

Finally, the need for a support action to provide further assistance to the EaP countries is recognized since, among others, it allows to maintain an active and committed network working closely with the local authorities and the research communities, beyond the nominated NCPs that suffer from frequent changes and which often devote only a small share of their time to that function.

C. Recommendations towards the improvement of STI systems in the EaP countries, as far as this provides necessary preconditions to further expand and improve EU-EaP STI cooperation

Here the document makes reference to the numerous Peer Reviews and fact-finding missions that took place in the EaP countries, as well as to the major findings of these initiatives especially in terms of governance; funding for STI; research-industry links and innovation.

The recommendation focus on the need to consolidate the reforms that have been initiated in the STI systems in the EaP countries, as well as on the need to monitor the implementation of the recommendations of the peer reviews and on the need to repeat at regular intervals similar reviews.

D. Specific recommendations targeting the field of cooperation in innovation.

Strengthening innovation in the EaP countries still remains a challenge. In that respect it is recommended to strengthen further the strategic framework for innovation, to move on with pilot applications of Smart Specialization Strategies and with clusters development. The efforts towards a stronger innovation system can be further supported through the EU4INNOVATION activities tailored to the needs of every EaP country, as well as through a closer cooperation with the European Enterprise Network.

Apart from being given in the four main chapters of the text, all recommendations are listed additionally in Annex I.

The development of the present document "EU-EaP beyond 2020", which represents one of the major contributions of the EaP PLUS project, coincides with the 10th Anniversary of the Eastern Partnership policy as well as with the transition from H2020 to Horizon Europe.

Introduction

The six countries Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine constitute a region of major importance for the European Union. Since they build a bridge between the EU's eastern borders on one side and the Russian Federation, Central Asia and the Middle East on the other side, the enormous strategic importance of this region for Europe is obvious. The importance of this partner region of the EU is addressed by the Eastern Partnership (EaP) initiative. It was launched in 2009 as an additional eastern dimension to the European Neighbourhood Policy (ENP). On the background of the Global Strategy for the European Union's Foreign and Security Policy (2016)¹ and the revised neighbourhood policy², the EaP aims to support the stabilisation and resilience of the six countries mentioned above. It is based on a shared commitment to international law and fundamental values, including democracy, the rule of law, respect for human rights, fundamental freedoms and gender equality, as well as to market economy, sustainable development and good governance.

Research and innovation is an integral part of the EaP initiative, aiming at a further integration of the STI systems and programmes of the EU and the EaP countries. On the occasion of the 10th anniversary of the EaP, many achievements in EU-EaP relations in the field of science, academia and innovation have been accomplished. Most prominently, four out of the six EaP countries (Armenia, Georgia, Moldova and Ukraine) have meanwhile been associated to the Framework Programme for Research and Innovation “Horizon 2020”. With the association to the Framework Programme, these countries not only benefit from the fact that Horizon 2020 is “open to the world”, but, beyond that, the integration of these countries from the EaP region into the European Research Area (ERA) is further pushed ahead. This means that being associated to Horizon 2020, Armenia, Georgia, Moldova and Ukraine may benefit from closer and broader ties between their own and the EU's research landscapes. Not being associated, Belarus and Azerbaijan can nevertheless participate as third countries in Horizon 2020, while attracting a particular attention as part of the Eastern Partnership initiative.

The European Commission has closely accompanied the process leading to the association to Horizon 2020 by Armenia, Georgia, Moldova and Ukraine. Once, the formal association had been accomplished – Moldova has been associated in 2014, Ukraine in 2015, Armenia and Georgia in 2016 – specific measures such as “association conferences” and training seminars, focusing on practical issues of how to use the opportunities arising with the association to the Framework Programme³ followed. Another example is the EU initiative EU4Innovation, which combines all EU activities that support the development of EaP countries innovation capacities, notably those funded under the Horizon 2020 programme and the European Neighbourhood Instrument. And also in the case of Belarus and Azerbaijan, support for

¹ https://eeas.europa.eu/headquarters/headquarters-homepage_en/17304/A%20Global%20Strategy%20for%20the%20European%20Union%27s%20Foreign%20and%20Security%20Policy

² https://ec.europa.eu/neighbourhood-enlargement/neighbourhood/overview_en

³ <https://www.inco-eap.net/en/546.php>

researchers and innovation actors has been given by EU, with the objective to increase the level of cooperation.

Towards the end of H2020, there is now a need to prepare for the upcoming framework programme Horizon Europe with regard to the involvement of the EaP countries. It is obvious that the association to the Framework Programme should be continued – in the case of the four countries mentioned – and – for all EaP countries – dedicated actions to maximise the benefits from participating in Horizon Europe should be taken.

The EU funded Cooperation and Support Action project “EaP PLUS” (September 2016 – August 2019) has been involved in supporting EU-EaP STI cooperation in Horizon 2020, both with regard to supporting the STI policy dialogue, and with practical support and information activities for researchers and innovation actors.⁴ At the same time, in its support for the EU-EaP policy dialogue for STI cooperation, this project has also fulfilled the task of elaborating suggestions regarding the future cooperation beyond Horizon 2020.

Constituting a synthesis of its various activities, such as fact-finding missions, analyses and support activities, the present document “EU-EaP beyond 2020” represents one of the major contributions of the EaP PLUS project. This document intends to provide a concise overview on measures to enhance EU-EaP STI cooperation at the turn from Horizon 2020 to Horizon Europe. It combines brief explanations – as short as possible and as detailed as needed – with precise policy recommendations. The text with recommendations is structured in four parts, namely (A) recommendations directed to aspects of STI policy dialogue and formal status (i.e. association) with regard to the R&D Framework Programme; (B) recommendations that focus directly on the transition from Horizon 2020 to Horizon Europe; (C) recommendations towards the improvement of STI systems in the EaP countries, as far as this provides necessary preconditions to further expand and improve EU-EaP STI cooperation; and (D) specific recommendations targeting the field of innovation cooperation. Besides presenting the recommendations in the four main chapters of the text, all of them are additionally listed in Annex I. This listing is grouped according to the four main chapters, indicating also the specific target group of each recommendation.

It should be stressed that the main objective of all recommendations (including those of part C) is to suggest actions that will increase the EU-EaP STI cooperation. It is not the intention of this document to elaborate on measures the EaP countries should adopt in order to improve and further develop their STI systems.

The recommendations are directed to various target groups, most prominently to the EU Commission; to actors on the policy level of EU Member States or EaP countries; to other R&D stakeholders in the EaP countries (e.g. researchers and research performing institutions), and others.

⁴ <https://www.eap-plus.eu/>

Methodology

The analysis and recommendations given in this document constitute a synthesis of work that has been done in the Cooperation and Support Action project EaP PLUS and of existing analysis on the issue of EU-EaP STI cooperation.

A series of fact-finding reports and analyses about the state-of-affairs of national STI systems within the EaP region as well as on challenges and needs for the improvement of EU-EaP STI cooperation has been elaborated in recent years. Continuing the work that was started with the 2012 “White Paper on Opportunities and Challenges in View of Enhancing the EU Cooperation with Eastern Europe, Central Asia, and South Caucasus in Science, Research, and Innovation”⁵, several Policy Mix Peer Reviews have been implemented (within the scope of various CSA projects, or most recently, within the frame of the Horizon 2020 Policy Support Facility (PSF)).⁶ Within the scope of the RI-Links2UA project, the implementation of the recommendations given by the PSF peer review of the Ukrainian R&I system has been monitored (publication due in 2019)⁷. All of these findings have been studied and taken into consideration as a basis for the present analysis.

Within the EaP PLUS project itself, fact-finding missions to all EaP countries have been performed, with their outcomes analysed in the project deliverable D1.5.⁸ The outcome of other project activities with focus on policy dialogue support, cluster cooperation, building of policy capacity and framework conditions have also contributed as a basis for the present document.

The synthesis of this background mentioned above, as well as the drafting of the text has been done by an editorial board, consisting of several participants in the EaP PLUS project. Apart from that, the whole project consortium has been consulted for advice throughout the elaboration of this document.

⁵ https://www.inco-eap.net/_media/White_Paper_on_EU-EECA_Cooperation_in_STI_final_April2012.pdf

⁶ For details see below, chapter C.

⁷ <https://ri-links2ua.eu/project/results>

⁸ [Under finalization]

Chapter A. Policy issues

A.1 Introduction

The *Eastern Partnership (EaP)* is a joint policy initiative between the European Union and six of its Eastern neighbouring countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine). It was launched in 2009 as an additional eastern dimension to the EU's neighbourhood policy, which is the EU's main policy cooperation instrument with its southern and eastern neighbours⁹. The EaP aims to deepen the relations between the EU, EU Member States and the six countries, based on bilateral agreements (association agreements, deep and comprehensive free trade area agreements), partnership priorities as defined during the regularly organised EU-EaP high-level summits and, not least, the “20 deliverables for 2020”, the most recent strategic document which outlines 20 concrete objectives to be reached in the region across four priority areas (stronger economy, stronger governance, stronger connectivity, stronger society). In the context of the last (5th) EU-EaP summit, which took place in Brussels in November 2017, a revised version of the document was adopted.¹⁰

Among the 20 deliverables, there is one (the 20th) directly related to research and innovation, as it aims to further “integrate the research and innovation systems and programmes of the EU and the EaP”. Concrete contributions to the 20th deliverable include, inter alia, the fully functional associations of four EaP countries to Horizon 2020 (Armenia, Georgia, Moldova and Ukraine are currently associated to Horizon 2020) and the launch of peer-review exercises of research and innovation systems in Moldova, Georgia and Ukraine under the Horizon 2020 Policy Support Facility.

Currently, the European Commission, the European Union External Action Services (EEAS) and DG NEAR (Directorate General for Neighbourhood and Enlargement Negotiations) as the EU's key actors dealing with the EaP, are shaping the EU-EaP post-2020 cooperation.

The EaP PLUS project as a bi-regional EU – EaP coordination platform and tool for the implementation of the 20th Deliverable - prepared this report to contribute to the discussion on post-2020 cooperation, providing input on the ways to further stimulate the ‘Integration of the Eastern Partnership and EU research and innovation systems and programmes’ beyond 2020. The report is based on the lessons learnt throughout the implementation of the EaP PLUS project from 2016 to 2019.

⁹ More detailed information on Eastern Partnership policy is included in Annex I

¹⁰ https://eeas.europa.eu/headquarters/headquarters-homepage/28117/eu-revises-20-key-deliverables-2020-eastern-partnership_en (15.04.2019)

A.2 EaP Panel on R&I

The ‘EaP Panel on Research and Innovation’ was established in 2013, under the ‘Eastern Partnership dimension of the European Neighbourhood Policy. Six annual meetings took place so far, each time in Brussels, organized and chaired by DG RTD, with funding provided for supporting the participation of the EaP representatives. Despite the fact they constitute an integral part of the Panel, the EU Member States were systematically under-represented at the meetings, with the exception of Austria, France, Germany, and Poland.

In addition to the annual formal meetings of the Panel, a series of ‘Panel Events’ were also organized (with strong support and involvement of the EC):

- In Brussels, to promote participation in the SPIRE calls (7/4/2017);
- In Minsk, focusing on national systems for financing innovative business (21/9/2017);
- In Tbilisi, focusing on ‘fostering research – industry links’ (1/10/2018).

In all the aforementioned Panel meetings and events, the EaP PLUS Coordination and Support Action contributed in terms of content (agenda setting with input from the field; identification of speakers and participants; etc.), as well as in terms of organization and logistics.

Throughout its functioning the Panel was *very instrumental in providing information* on all the spectrum of activities put in place by the EC to promote the cooperation with EaP countries: not only by DG RTD (Thematic Directorates) but also by EAC, DG NEAR, JRC, COST and EEAS, for the broader political context.

This annual overview was very useful towards the EaP countries, since often several activities were not well known or properly advertised. As a result, the interest of EaP countries not profiting from them was often triggered by this information. At the same time, this annual overview was also important for the EC itself - since it stimulated improved synergies among actions which are often a bit isolated.

On the other hand, the flow of information was in most of the times *unilateral*, from the EC (and few EU Member States, in some cases) to the EaP countries, with only sporadic EaP countries’ interventions and presentations.

It should also be noted that in most of the cases *there was no room for debate and discussion* during the Panel meetings. Even in the cases where it was foreseen, the overloaded agendas with presentations from the different EC services didn’t allow for a discussion; the countries attended to ‘listen only’. Apparently other fora and approaches were used to convey information *from* individual countries to the EC (mainly through bilateral contacts between individual EaP countries and the EC).

Recommendations

Recommendation A1: Continuity of the ‘EaP Panel on Research and Innovation’ beyond 2020

Beyond 2020 the Panel should continue to overview the EU-EaP R&I cooperation, being *necessary* as an integral part of the EU’s policy towards the EaP countries. It provides the

opportunity to *make an overview* at least once a year on the state of the cooperation, complemented by a ‘Panel event’ also every year, allowing therefore the EaP policy makers to meet twice a year.

Recommendation A2: More interactive ”modus operandi”

Without deviating too much from the fact that the EC is organizing and chairing the Panel, *a stronger say of the EaP countries on agenda items to address specific issues* could be beneficial. That could be combined to a *slightly longer duration of the meetings* (1.5 days) giving some space for discussion on the information received by the EC, on the state of affairs in the EaP countries (exchange of best practices) and on possible future actions.

Recommendation A3: Profile and number of participants from EaP countries

When considering the broad spectrum of policies, tools and projects that are put in place by the EC and are presented at the Panel meetings, it becomes evident that participation of adequate stakeholders from EaP is needed. A single representative from a ministry typically in charge of delegate’s duty, is not sufficient for triggering a reaction and profiting of the existing opportunities. The 6th Panel meeting (December 2018) constitutes a good practice example, in that sense since several representatives per EaP country participated.

Therefore there is a need to *involve on a systematic basis EaP representatives from a broader spectrum of stakeholder institutions*. The invitation to the meetings should include *orientations for the expected profiles of the representatives* that should participate, in relation to the expected outcomes of the meetings.

Recommendation A4: SFIC and Panel representatives from EaP countries

Despite of the different roles and contexts between the EaP Panel (chaired by the EC) and the Strategic Forum for International STI Cooperation (SFIC, under the Council of the EU), the possibility for the EaP countries *to include among their delegates to the Panel also their representative/observer in SFIC* should be envisaged. Such initiative would allow the EaP countries to better understand the position of the EaP policy in the broader context of international STI cooperation of the EU.

Recommendation A5: Stimulating the participation of EU Member States

The EaP Panel in its current functioning, i.e. mainly as a forum for presenting the EC’s initiatives, does not leave a lot of room for an active participation of EU Member States. If however, the scope of the Panel meetings is extended (as mentioned above) by adding a half-day for discussion on the state-of-affairs and needs of the EaP countries, it would certainly *be of more interest to the EU Member States that could not only hear the EaP countries but also step-in for tackling existing needs* through their numerous bilateral cooperation programmes.

Note: Since the beginning of the functioning of the EaP Panel a regional support action existed (CSA)¹¹ allowing the implementation and follow-up of Panel's recommendations ensuring therefore certain continuity between the Panel meetings, as well as facilitating the organization of Panel meetings and annual Panel events. Such Panel support mechanism at regional level should continue to exist funded and put in place under the most appropriate instrument as described in Section B8, Recommendations B32-34.

A.3 Association to Horizon 2020

In the context of the European Neighbourhood Policy, its Eastern Partnership dimension launched in 2009 as a joint initiative, aims to deepen and strengthen relations between the EU, its Member States and the six Eastern neighbours in various fields, including STI. A tangible result of the EaP policy is the association of four EaP countries to Horizon2020 (Moldova – 2014; Ukraine -2015; Georgia and Armenia -2016).

There are already positive outcomes from the association to Horizon 2020, among which the following can be mentioned:

- The participation in widening actions: three twinning projects (Armenia 2; Ukraine 1) have been retained for funding under the 2018 call giving the opportunity to EaP institutions to gain experience in project coordination while networking with leading EU universities and research centres;
- Benefiting from the Horizon 2020 Policy Support Facility actions: peer reviews of the STI systems have already been implemented in all four associated countries.

On the other hand, in terms of participation in Horizon 2020 projects the impact of the association is for the time being not fully deployed: as we can see in Table 1 (Annex II) comparing the final FP7 results to the *current* Horizon 2020 results only Moldova and Belarus are slightly above FP7 results in terms of projects while in terms of funding only Moldova and Ukraine are already above FP7 results'. This is due to the 1) *incomplete* character of the Horizon 2020 results (several calls are still forthcoming); 2) to the general drop in the participation of third countries in Horizon 2020; and, 3) last but not least, to the fact that the impact of the association needs time (and serious internal efforts) for its full deployment.

Recommendations

Recommendation A6: Continuation of association to Framework Programme during Horizon Europe

In order to keep the momentum and to fully deploy the benefits of the association it is recommended for all associated to Horizon 2020 EaP countries to continue their association to the next Framework Programme Horizon Europe.

¹¹ EaP PLUS CSA: www.eap-plus.eu

Recommendation A7: Support to the association process

The association process will need to be supported by the following actions (detailed explanation in other parts of this report):

- Widening actions fully accessible to the EaP countries, enriched with specific actions or tailored focus wherever possible;
- By a better use of all available tools, possibly under the EU4INNOVATION initiative for implementing reforms and modernizing the STI systems (based on the PSF peer reviews); for renewing research infrastructures; etc.

As articulated in Section B.7 (recommendations B32, 33, and 34), a Coordination and Support Action (EaP PLUS like) should continue to exist. This would also be of help in order to ensure the sustainability of a network for best practices transfer from EU Member States and for exchanges within the region.

Chapter B. From Horizon 2020 to Horizon Europe

Horizon 2020 is ‘open to the world’ and besides EU Member States, more than 120 non-EU countries participate in it. During the last four years, four Eastern Partnership countries signed Association agreement with Horizon 2020, while two countries (Belarus and Azerbaijan) can participate and be funded as Third Countries.

Following the EU's strategy for international cooperation in research and innovation, international cooperation is seen as a major contributor to the broader policies of the EU. Horizon 2020 is the main instrument for implementing the Union's international research and innovation cooperation actions, in synergy with EU Member States national initiatives.

B.1 Statistics on EaP participation in Horizon 2020

The statistics based on the Horizon 2020 eCORDA data bases v.13.2 after 702 concluded calls (extraction date: 05.06.2019) show the total of 417 participations of EaP organizations in the Horizon 2020 projects. The largest number of projects (with one project possibly having more than one participant from the same country) was awarded to Ukraine (159) as shown in Table 2 (all tables in Annex II).

The average success rate (which compares the Number of participations in proposals with the Number of participations in projects with signed Grant Agreements) for the EaP countries is 14,7%, with the highest success rate in Armenia (17,1%) which is comparable to the overall average EU 28 Horizon 2020 success rate of 17,0% (Table 3).

The total EC financial contribution to EaP participants is 40,9 M€ (Table 4), which amounts to only 0,1% of the Horizon 2020 total budget reserved for 702 calls. Two of the EaP countries received most of this sum: Ukraine (26,2 M€) and Moldova (5,9 M€).

By the type of action, most of the participations were in CSA, MSCA-RISE, and RIA (Table 5), while Figure A presents top 10 Horizon 2020 action types for the EaP countries. The largest number of participations (108) was of the CSA type followed by MSCA-RISE projects (105 participations) and RIA (75 participations).

Looking at the organization type, it could be seen that in EaP countries Research organizations (REC) are in first place in terms of number of participations - 124 participations, followed by Universities (HES) – 91 participations (Table 6, Figure B).

Associated Countries can also participate in Widening actions, however at the moment there are only 7 Twinning projects with EaP countries participation with 3 of them coordinated by Moldova, 2 coordinated by Armenia and 1 coordinated by Ukraine, while one more project is coordinated by Latvia with participant from Ukraine. There are currently no Teaming or ERA Chairs projects.

B.2 Horizon Europe (Horizon Europe)

Widening countries and measures

Already since 2011 (FP7) the European Commission became aware of the divide that was created between low- and high-performing EU Member States in terms of participation in the Framework Programme. Based on that, under Horizon 2020, the ‘Widening Actions’ have been implemented, addressing the low-performing countries and aiming to reduce the divide. The potential beneficiary countries are defined based on a series of criteria and as a consequence the four Associated EaP countries were also eligible for the Widening Actions since all of them belong to the group of low-performing countries.

Widening measures consist of three main actions, i.e. Teaming, Twinning and ERA Chairs, for which specific eligibility conditions apply. The Work Programme related to Widening Actions among the factors envisaged for prioritisation of proposals which have been awarded the same score within a ranked list (*ex aequo* proposals), after the application of excellence and impact criteria, lists coordination established in "low R&I performing" or "Widening" countries. Further prioritisation of proposals could be based on factors such as size of EU budget allocated to SMEs, gender balance and in some cases geographical diversity.

Widening Horizontal measures implemented in Horizon 2020 as a background for Horizon Europe:

- *Widening-based ex aequo selection criteria* imply to using the geographical diversity of partners applying for Horizon project as one of the conditions for dealing with *ex-aequo* proposals. Within the Spreading Excellence and Widening Participation package calls with a deadline on 15.11.2018 i.e. Teaming 2, Twinning and ERA-Chairs related to geographical balance between Widening countries, as well as *Widening-based selection criterion* within the QuantERA Cofund project. *Ex-aequo criteria* for Twinning and ERA Chairs 2020 calls will be strengthened even more for a more balanced distribution of projects funded.
- *Widening-based selection criterion within the QuantERA Cofund project*¹² ensures increased participation of widening countries in financed projects. The system has been implemented in its first and second joint calls (2017, 2018).

More recently (2018) the EC launched a new study¹³ that confirms the existence of the divide and identifies a series of factors that are linked to it, as well as ways and recommendations that could reduce it. Among such factors there are several linked to internal national

¹² The QuantERA Cofund project which is a network of 31 organisations from 26 countries, coordinated by the National Science Centre, Poland, and supports international research projects in the field of Quantum Technologies. The QuantERA is the only ERA-NET Cofund project coordinated by a research funding organization from the EU13, and is one of the three largest cofund schemes with respect to the number of the participating countries.

¹³ Spreading Excellence & Widening Participation in Horizon 2020: Analysis of FP participation patterns and research and innovation performance of eligible countries
<https://ec.europa.eu/programmes/horizon2020/en/news/widening-participation-horizon-2020-report-analysis-fp-participation-patterns-and-ri>

weaknesses of the STI systems that are also relevant for the EaP countries. Of particular relevance for the EaP countries is however the observation that “*access to existing networks and the clustering of large research-performing countries remain the Number One barrier for participation for lower performing countries*”. Such a barrier is repeatedly mentioned as a reason for the relatively limited number of proposals involving EaP countries.

Recommendations

Recommendation B1: Ex-aequo criteria and additional specific support measures to raise participation from EaP countries

In Horizon Europe the ‘*Widening package*’ including the *ex-aequo* criteria, which will address applicants from the low-performing EU MS, should encompass the also low-performing EaP countries, while additional more specific support measures to raise participation in Horizon Europe from EaP countries would also be much welcome as a means to contribute to the Eastern Partnership policy.

Recommendation B2: Specific actions supporting participation of partners from EaP countries in EU consortia

Among more specific actions in Horizon Europe, ways to overcome the aforementioned barrier to meet and enter EU consortia could be envisaged including, e.g.:

- Means and incentives supporting attendance in proposal preparatory steps;
- Possibilities to join successful consortia through ‘toping-up’ funding;
- Inclusion of topics with recommended or mandatory participation of EaP partners in consortia, as it was sometimes the case in targeted calls in Horizon 2020 and even more in FP7.

COST Actions

COST Actions are open to international cooperation and EaP researchers as part of the group of Near Neighbour Countries (NNC) can participate in them on the basis of mutual benefit. Moldova became the 38th full COST Member as of November 8, 2018. The participation of EaP researchers in COST Actions has to be approved on a case by case basis by the Executive Board on behalf of the CSO, the COST governance body. Afterwards, they can participate in the COST Action on the same basis as the COST Countries that have signed the Memorandum of Understanding (MoU) – with the exception of the right to vote in the Management Committees or Working Groups of the Action.

There are more than 200 running COST Actions with more than 60 of them having participants from the EaP countries. On November 13, 2018, 40 new COST Actions were approved, among which 7 Actions had participants from EaP countries.

Being an important way for networking, participation in COST Actions can also serve as a step for preparation of Horizon 2020 proposals. In that sense participation of the EaP countries in COST Actions is not high enough and further promotion of COST is necessary.

Recommendations

Recommendation B3: Continuation of policy towards the Near Neighbour Countries of COST

In Horizon Europe the policy towards the Near Neighbour Countries of COST should continue and provisions for a stronger participation of EaP countries should be made;

Recommendation B4: Promoting the participation in COST actions

The participation in COST Actions (new and ongoing) should be broadly promoted in the EaP countries as a means for increased networking that can pave the way for more applications in the Framework Programme. In that respect, COST National Coordinators should be nominated in every EaP country and the procedures for joining COST Actions should be streamlined.

The European Innovation Council (EIC) Enhanced Pilot

With its pilot stage launched in 2017, the European Innovation Council (EIC) currently is going to implement its activities as EIC Enhanced Pilot and is planned to become a full-fledged reality from 2021 under the next EU research and innovation programme Horizon Europe.

The EIC Enhanced Pilot 2019-2020 builds on the initial pilot and its various instruments (SME instrument, Fast Track to Innovation, Future and Emerging Technologies, Horizon Prizes). It introduces targeted calls for Future and Emerging Technologies (Pathfinder), Programme Managers for flexible management of the portfolio of projects, and an option to apply for blended finance (a combination of grant and equity) under the EIC Accelerator Pilot. The budget provisions have been increased to €1028 million in 2019 and €1228 million in 2020.

Opening EU-EaP collaboration topics to citizen science

Since the Aarhus convention in 1998, the EU and neighbouring countries, including EaP countries, are promoting public access to environmental information, participation in decision making and access to justice. Public access to environmental information has increased in many countries. Citizen science, i.e. the participation of the general public in collecting, sharing and analysing environmental information, and its use, is the next logical step in this development. Citizen science not only contributes to research outcomes and enables creating additional links between EU and EaP research organisations. It also contributes to open science, responsible research and innovation, and it provides an opportunity for the public to be engaged in scientific activities. Many citizen science research and innovation actions and coordinating and support actions have been already funded through FP7 and H2020. From Science with and for Society (SwafS) to the European Research Council (ERC), EU

organizations have significant experience in implementing citizen science research and innovation projects. There are evolving European networks such as the European Citizen Science Association with sound experience in research and innovation activities, being able to facilitate knowledge exchange and best practice. The EaP Plus project has supported one Armenian research organisation to be integrated in an EU consortium and to submit a proposal related to a topic in the water sector. It is obvious that the EU-EaP collaboration potential in the field of citizen science is much bigger.

Recommendation B5. Extending EU-EaP collaboration topics to citizen science

It is recommended that EU-EaP collaboration is extended to topics in the field of citizen science since they contribute to open science and responsible research and innovation that are far only emerging in the EaP.

B.3 Programme Committee Members in EaP countries

The Association to Horizon 2020 automatically entitles the respective countries to nominate delegates to the Programme Committees and therefore to become active players in the Framework Programme management, acquiring first-hand information and understanding of the procedures. Despite this undeniable advantage, when compared with all other Third Countries, long delays have been observed in the nomination of representatives and in the active participation in the Programme Committees, which constitute key mechanisms of Horizon 2020 and the ERA in a more general sense.

Moreover, in several cases there are doubts about awareness of the nominated persons about the expected tasks (bringing info from Brussels and disseminating it to appropriate stakeholders; organizing or contributing to internal consultations; consolidating national positions and conveying them to Brussels), as well as about their familiarity with the Horizon 2020 rules/procedures/comitology.

In addition, it is not always certain that the nominated PC representatives are really committed, i.e. ready to play the aforementioned role since:

- Often the position is perceived as an ‘honour’ from the Minister/Ministry that approached them (feeling that they cannot refuse, even if they understand the task and their difficulty to implement it).
- In other cases, their high level positions and duties (Directors of Institutes or just simply very active researchers) do not allow them to fulfil all the obligations.
- Finally, other just ‘keep the benefit’ of the info received only for themselves, trying to only involve their own team (or Institute; in the best case) in Horizon 2020 projects.

Besides the aforementioned issues with the commitment of the nominated PC members there is also an obstacle often reported that hamper the fulfilment of their task: It is the lack of funds for travelling, since in most of the cases the signature of the Association didn’t trigger the setting up of a respective budget by the national authorities to support it.

Recommendations

Recommendation B6: Importing best practices for an efficient representation in FP Programme Committees

The Ministry/Department responsible for the Association to Horizon 2020 should have a full responsibility for coordination of the national PC system as well as overseeing and assisting the PC members since this constitutes a key element of the association process.

Best practice examples from EU Member States should be copied. This could be done through a study on EU Member States best practices; a study visit of EaP stakeholders to EU Member States administrations; bilateral exchanges (TAIEX); etc. The output of that should be proper Terms of Reference for the delegates (adapted to the local conditions and expectations) as well as a minimum support package from the Ministry towards the PC members (budget for travel; smoothening the administrative procedures; support to consultation processes; etc.).

Recommendation B7: Training at regional EaP level for nominated PC representatives

For the Associated EaP countries (but also for the non-Associated ones), acquiring in a structured way information on the way the FP is managed and on the role the PC delegates have to play can only be beneficial for avoiding false expectations and perceptions, allowing a more effective participation in Horizon 2020, Horizon Europe and in the ERA. Such a training could be organized at regional EaP level. An example is the workshop organized in March 2018 in Kiev under the ‘EaP PLUS’ project that proved to be very pertinent and unique in its kind so far.

Recommendation B8: Assessment of the performance of the national PC system coordination and of the nominated PC members

Before taking any initiative to reconfirm or change the PC representatives, an assessment of their performance should take place, based on criteria that will arise from the aforementioned experience from EU Member States.

- In terms of the PC system coordination such assessment should review and improve the process of nomination of PC delegates and the procedures for PC meeting participation.
- In terms of nominated PC delegates the assessment should identify the representatives that were not able (for any reason) to properly fulfil their tasks until now and the ones that properly played their role and merit not only a re-confirmation but also an investment for their training and for assisting them in their task.

Such assessment (in 2019 – 2020) should be considered as preparatory work for Horizon Europe, where continuity for the active PC representatives should be ensured while timely replacing by adequate ones the non-performing.

B.4 Recommendations towards NCPs

It is generally accepted that nationally operating professional support services form an essential component of the EU Framework Programmes implementation and influence the national participation. Following the experience of the 7th framework Programme, in 2014, all the EaP countries set up the national NCP systems for Horizon 2020 in line with the *Minimum standards and Guiding principles for setting up systems of National Contact Points (NCP systems) under Horizon 2020*. Within the Programme life time, the NCP systems evolved due to the association to Horizon 2020 of four out of the six EaP countries and reforms of the national R&D system undertaken in some of them.

At the time of writing, the total number of NCPs in the region exceeds 140 that is 30 persons less than it was at the beginning of Horizon 2020 (173 in mid-2015). Moldova and Ukraine are responsible for this decline however, due to limited financial support at national level, at this stage it is rather an optimization than a negative trend. Still, the largest number of NCPs is nominated in Ukraine (34) while the other countries have between 20 and 25 NCPs. All EaP NCP systems are of de-centralized nature and demonstrate quite complete coverage of the recommended NCP areas.

Like many NCP systems in the EU, those in the EaP region are subject to significant change of personnel. Apart from the natural move of personnel, lack of motivation and financial support for NCP activities from the national authorities are among the key reasons. The frequent change of personnel generates a huge demand for training of newcomers and capacity building for less experienced NCPs in the region. There is a clear need in systematic approach and combining all available instruments and financial sources to support training activity, both from the countries and the Commission. The need for training will just increase with the start of the next Framework Programme Horizon Europe.

Multiple-nomination (nomination of more than one NCP for an area) that is quite typical for big countries (Germany, France, Spain, etc.) is used in the EaP region as well. Allowing better coverage of the national scientific community it may cause at the same time a negative effect if interaction between the NCPs working in the same area is not properly organized and equal financing and access to training and networking opportunities are not provided by the national authorities.

As far as national funding for NCPs is concerned, the situation in Horizon 2020 has not changed much from that in FP7: with some exceptions, the association of EaP countries to Horizon 2020 has not yet triggered the setting up of a sufficient budget by the national authorities, although the issue is being considered (Armenia). In most cases, NCPs continue to work on a voluntary basis combining the NCP duties with research or research administration. In the non-associated EaP countries it is the only option of NCP work.

Also, there is lack of direct support for travels for participation of EaP NCPs in the NCP meetings, networking and trainings, including those organized by the NCP Academy. All training received and most of EaP NCPs visits abroad are based solely on the funds available through FP7/HORIZON 2020 support and coordination actions, in particular, INCO-NETs, BILATs and EaP PLUS. As a consequence, international cooperation between EaP NCPs and

their counterparts in the other countries is not sufficient. E.g. it is considered to be the weakest point of the Ukrainian NCP system according to the analysis of the BILAT-UKR*AINA project and calls for quick decisions and actions. Comparing to non-associated EaP countries, the situation in the associated ones in which NCPs can take part in the NCP thematic networks funded by the European Commission either as beneficiaries, or as associated partners, is slightly better¹⁴. However, the room for improvement does exist here too.

Last but not least, voluntary work makes the evaluation of NCP performance impossible, as well as assessing quality of their services and compliance with the minimum standards. The cases when NCP positions are occupied “formally” (e.g. accepted as a ‘gift’ for the research achievements or as an additional ‘bonus’ to already high administrative position with no real commitment to work or lack of time for NCP duties) are still in place. Replacement of such persons is extremely difficult.

Overall, the challenges listed above are not unique: many associated countries and the EU neighbours report about similar problems. It is evident that moving towards the professionalization of the NCP system is not possible without sufficient and sustainable financial support from the national governments and nobody will replace them in performing this task. At the same time, the European Commission which aims to boost participation of the excellent researchers from the neighbouring regions in the EU research and innovation programmes could open wider its instruments in support of NCPs from the neighbouring countries.

Although at the time of writing the future of the NCP system in the next Framework Programme Horizon Europe is not clear in terms of the structure and means of support for NCPs from the European Commission, the information available allows counting on maintaining the NCPs and their role in supporting the participation. In order to ensure the smooth transition of EaP countries in order to adapt to Horizon Europe and assure their active participation in it, the following activities aiming at strengthening the NCP systems in the neighbouring region are proposed for consideration to the European Commission and governments of the EU Member States and EaP countries.

Recommendations *(for the European Commission)*

Recommendation B9: Participation of NCPs from all EaP countries in NCP support projects

Consider the opening up of the NCP support projects for participation of NCPs from all EaP countries regardless the status of a country in Horizon Europe, as part of the EaP policy.

Recommendation B10: Access to information and experience for NCPs

Providing better access to information and experience for EaP NCPs and promoting EU – EaP people-to-people contacts at the level of NCPs could constitute an important concrete activity within the Eastern Partnership Platform 4.

¹⁴ e.g. UA is a beneficiary in C-Energy 2020v2 NCP network

Recommendation B11: Addressing the needs of EaP NCP systems

Wherever applicable, address the needs of EaP NCP systems for training and skills improvement that will be vital during the transition phase from Horizon 2020 to Horizon Europe, as well as during the first years of Horizon Europe. Such support could take the form of bilateral cooperation actions between the EU and the respective EaP countries, managed by EC delegations in EaP countries.

Recommendation B12: Providing access to statistics on Framework Programme performance also to NCPs in non-associated countries

NCPs and especially NCP coordinators in the EaP countries often report to the national governments on the programme implementation, develop recommendations and provide analytical evidence. This task is hardly possible without an access to statistics that are currently available only to NCP coordinators from EU Member States and associated countries, while for the non-associated EaP countries, the statistics are provided on case by case basis in a less relevant aggregated form. In order to influence policy making related to participation in the Framework Programmes, the possibility to provide to all EaP NCP coordinators adequate statistics regardless of the status of a country in Horizon Europe should be considered.

At this point, it should be mentioned that, since FP7, improving of the quality of NCPs services has been an essential part of the package on promoting participation of EaP countries in the EU Framework Programmes in bi-regional and bilateral coordination actions. Continuation of similar activities in Horizon Europe is essential not only for policy reasons but also for ensuring the former EU investments in STI cooperation with the region are not lost. In that respect, a continuation of a support mechanism should be ensured as described in Section B.7, Recommendations B32-34.

(for the national governments of EaP countries):

Recommendation B13: Investing in NCP systems in EaP countries

Regardless the status in Horizon Europe, the EaP national governments should recognize that by investing in NCP systems they are supporting their own national innovation ecosystems. Therefore, it is within the national interests to create favourable conditions for the effective functioning of NCPs and to sustainably improve them in line with the best EU Member States practices. Transferring these practices can take place using TAIEX, instruments of bilateral cooperation with certain EU Member States, twinning of NCPs supported in the NCP networking projects, etc.

Recommendation B14: Financial support from EaP authorities to their respective NCP systems

The core task of the national EaP authorities is to timely set up a robust national NCP system and ensure financial support for it. The latter should include personnel costs, as well as budget for travels and promotional events, with each of these lines being equally important for an efficient NCP system. When prioritization for funding will be needed, preferential support should be given to National NCP Coordinators, Legal and Financial NCPs (as mostly

demanding ones) and NCPs in the areas (programmes) of highest national interest and potential.

Recommendation B15: Using EU cooperation instruments for financial support to NCPs

In terms of financial support to NCPs, apart from the national sources, the EU instruments of bilateral cooperation administered by the EU delegations to the EaP countries could be used in some cases, as well as specific projects (e.g. 'MOST' in Belarus).

Recommendation B16: Transparent procedures and criteria for EaP NCP systems

The organizational set-up of the national NCP system should be based on a transparent call and clear list of requirements. Each of the NCP candidates should be informed in advance about the NCP tasks and financial conditions in order to avoid false expectations and to ensure a conscious decision. The size of the NCP system is an individual choice of a country, however in case of limited financial means concentrating the resources following the principle 'less is more' seems reasonable. In case of several NCPs nominated for one area, it is necessary to elaborate the guidelines for communication between them: how the NCP tasks will be distributed (e.g. geographically or by type of clients), how the information will be shared, who will represent the area at the NCP meetings (ideally, by rotation), etc. It is also important that all of them have equal access to information, trainings and finances and are backed up by the administration of their host organisations.

Recommendation B17: Assessment and evaluation of NCPs

It is highly recommended that the NCP system for Horizon Europe combines the most experienced and effectively working Horizon 2020 NCPs and enthusiastic newcomers. In that respect it is essential to implement an assessment of the Horizon 2020 NCPs for defining leaders who will make a nucleus of Horizon Europe NCP network. For ensuring the quality of NCP services and compliance with the minimum standards, an evaluation of NCP performance should be implemented on regular basis.

Recommendation B18: Timely nomination and funding of NCPs

The timely nomination of NCPs and availability of funds for travels are the preconditions for:

- taking part in the annual EU NCP meetings;
- participation of EaP NCPs in the trainings organized in the EU;
- entering the NCP networking projects and taking part in trainings provided by them;
- twinning with NCPs from EU Member States, etc.

Recommendation B19: Improving the organisational set-up of NCPs

As soon as the basic financial support for NCPs is provided, it might be worth to improve the organizational set-up: the most efficient NCP networks in EU Member States have a centralized architecture which provides lots of benefits: internal networking, transferring experience and skills from more experienced to less experienced NCP staff, enriching the services, organizing promotional events, etc. Moving towards the professionalization of the NCP system often implies its centralization.

At the beginning of Horizon Europe, when the demand in training would be especially high it is also worth to consider organizing the trainings for NCPs in their respective home countries (e.g. for legal and financial issues, horizontal topics, etc.). This will allow training the whole national network on the basics of the new programme requisites.

B.5 Major barriers from the researchers' perspective

Since all EaP countries (associated and non-associated) are belonging to the low-performing group in terms of Horizon 2020 participation, it is obvious that specific support should be provided to their research communities for filling this gap. Such support should include:

Recommendations

Recommendation B20: Information and training regarding Horizon Europe

An efficient national NCP network should organise regular information events and trainings in preparation towards the new Horizon Europe Framework Programme, focusing in particular on: overall structure of Horizon Europe; sources of information; legal and financial issues, proposal writing, reporting, etc. They should address several focus groups (academic researchers, SMEs, young researchers, experienced researchers with exceptional research outcomes (“national stars”), etc.).

Recommendation B21: Mobility support for researchers from EaP countries

Since there are limited resources and possibilities for researchers in EaP countries to get travel grants to attend Horizon 2020 networking events in EU countries, the national authorities should introduce travel grant schemes (like the ones implemented under the EaP PLUS) to support participation of EaP researchers in brokerage events in EU countries and proposal preparatory meetings as integral part of the overall strategy to increase participation in Horizon Europe.

Recommendation B22: Promoting participation in EU partnership platforms

The National authorities in EaP countries should promote participation in various EU partnership platforms, like European Technology Platforms, Knowledge and Innovation Communities, COST Actions, etc., as a means of integration of EaP researchers, including the young ones, in the EU research networks for developing new partnerships and increasing visibility.

Recommendation 23: Using bilateral cooperation as first steps for multilateral cooperation

Consider the bilateral cooperation between EaP and EU Member States and related instruments as a step towards multilateral cooperation in the Framework Programmes, by introducing the appropriate conditions in the terms of reference of the bilateral calls for R&D projects.

Recommendation 24: Improving framework conditions for participation in EU programmes

In some cases participation of EaP research organizations in EU programmes is problematic due to inadequacy in procurement procedures, IPR, transfer of funds and research equipment. Removing such barriers could promote international cooperation and participation in EU programmes.

Recommendation 25: Introducing incentives for participation in EU cooperation

Overall, the integration to the European Research Area (ERA) or a closer cooperation with EU is a strategic policy objective present in policy documents of EaP countries, especially those associated to Horizon 2020. However, in most cases concrete measures and mechanisms are still absent. Some EaP countries have introduced incentives (additional bonuses from national funds) for research institutes whose applications are main-listed for funding or scored above the threshold (Moldova, Armenia). This practice should be further enhanced and continued for Horizon Europe.

Recommendation 26: Promoting the participation of EaP researchers in project evaluation

A wider promotion at all relevant levels of the possibility for EaP researchers to register as experts for evaluation of Horizon 2020 and Horizon Europe proposals is necessary, as an excellent opportunity to gain experience on project preparation and writing.

B.6 Recommendations towards participation in COFUND activities

In order to tackle common challenges and strengthen European competitiveness, instruments and initiatives fostering productive synergies and the alignment of R&I national strategies and programmes have been developed over the past years. Among these initiatives, Public to Public Partnerships (P2Ps) aim at promoting coordinated cooperation both at national and regional levels. At the moment, participation of the EaP countries in these activities is quite low and further opportunities exist for their participation.

ERA-NET Cofund

The ERA-NET Cofund was a new public-public support tool in the Horizon 2020 programme which merged former ERA-NET and ERA-NET Plus instruments and shifted the focus from funding networks to 'topping-up' funding of single joint-calls for transnational research and innovation. The duration of an ERA-NET Cofund is usually five years. In addition to the co-funded call, the consortia implement further joint activities including other joint calls without EU co-funding. Since 2014, 57 ERA-NET Cofund networks have been implemented.

The data from the Horizon 2020 eCORDA data bases after 586 concluded calls (29.09.2018) show 8 ERA-NET Cofund projects with participants from the EaP countries. Moldova participates in the WaterWorks2014, WaterWorks2015, WaterWorks2017 and AXIS; Ukraine in ERA-PLANET and GeoERA; Belarus in EMEurope and MarTERA.

Recommendation

Recommendation 27: Using ERA-NET Cofunds as support for national research

National research funding agencies in EaP countries should more closely consider ERA-NET Cofunds as a way of supporting national research. Participation in ERA-NET Cofunds is a first step for joining research consortia applying for various Horizon 2020 and in the future Horizon Europe calls and allows networking with leading research organizations in the EU and beyond.

MSCA-COFUND

The COFUND scheme, which is part of the Marie Skłodowska-Curie Actions, provides organisations with additional financial support for their own researcher training and career development programmes. It is open for the EU Member States and associated countries. The scheme supports doctoral programmes for PhD candidates, as well as fellowship programmes for experienced researchers. In Horizon 2020 there are in total 134 MSCA-COFUND projects. Such schemes allow bringing skilled PhD and Postdoc fellows to national universities, but at the same time require systematic strategic process within a given country.

Although EaP countries actively participate in various Marie Skłodowska-Curie Actions, eCORDA data after 586 concluded calls indicate only 2 MSCA-COFUND projects with EaP countries participation, both from Ukraine. One is the ‘Bio4Med’ (International Doctoral Programme in Biological Bases of Human Diseases) coordinated by Poland and the other one is ‘BIGSSS-departs’ (Bremen International Graduate School of Social Sciences - Doctoral Education in Partnerships) coordinated by Germany.

Recommendations

Recommendation 28: Using upcoming calls for MSCA-COFUND

There are still two calls under Horizon 2020 for MSCA-COFUND (closing in September 2019 and September 2020). Institutions funding the research and international exchange as well as higher education institutions should be aware about such an opportunity and be encouraged by NCPs and national ministries to apply to these calls.

Recommendation 29: Making use of existing experience for participation in MSCA-COFUND

The experience of institutions which were successful in receiving MSCA-COFUND funding could be shared between EU and EaP countries in order to prepare EaP institutions for similar calls within the upcoming Horizon Europe programme. In parallel, guidelines and documents prepared within the Net4Mobility project could be used as a basis for educating EaP institutions about the MSCA-COFUND.

JPIs

European Member States, Associated as well as third countries can participate in Joint Programming Initiatives (JPI)¹⁵, which are intergovernmental processes aimed at making better use of Europe's research and development resources and tackling common European challenges more effectively. To date there are 10 JPIs, but only in 2 of them there are members from the EaP countries: Moldova (NARD - National Agency for Research and Development (voting member)) in Water JPI, and Moldova (Ministry of Culture) and Belarus (National Academy of science of Belarus) in JPI on Cultural Heritage.

To support research on selected topics, JPIs organize joint calls, which present one of the instruments for implementing aspects of the strategic research agenda. Joint calls are competitive procedures where proposed projects are selected and cooperatively funded by partners within JPI.

The EaP Plus project conducted a review of national priorities and R&D planning (Deliverable 4.2) which showed that European challenges tackled by the Joint Programming Process are of common interest also to EaP countries. Furthermore, participating EaP countries indicated numerous benefits from JPI participation, such as establishing deeper connection to key EU policy makers and performers in the related RDI sector; aligning national priorities with JPI agenda; enhancing visibility of national researchers and research groups and also allowing better integration and cooperation.

Recommendations

Recommendation 30: Providing training activities for EaP research funding agencies

Training activities on working with various EU funding schemes should be organized for representatives from EaP research funding agencies. In particular, trainings or internships for young EaP specialists working in the field of international research cooperation could be organized in the EC units, allowing them to use the acquired knowledge while serving in their national R&D agencies.

Recommendation 31: Engaging in JPI activities

Agencies from the EaP countries could initiate engagement in JPI activities as observers while their participation could be supported by national travel grants.

B.7 Recommendations towards need of support actions (“EaP PLUS type”)

The successful participation in Horizon 2020 and even more the success of the Association to Horizon 2020 (for the four out of the six EaP countries) constituted already a challenge for the EaP countries in the current Framework Programme due, among other, to the continuously increasing level of competition among consortia and research teams for getting a research

¹⁵ [https://ec.europa.eu/programmes/Horizon2020/en/Horizon 2020-section/joint-programming-initiatives](https://ec.europa.eu/programmes/Horizon2020/en/Horizon%20section/joint-programming-initiatives)

grant. As a result of this increased competition even within the EU a ‘divide’ has been observed between strongly benefiting countries and weak performers, a fact that triggered the setup of the widening actions.

In order to accompany and support the EaP countries as a whole, the EC funded a series of Coordination and Support Actions (CSAs) that constituted ‘multilayer’ actions addressing issues such policy dialogue, support to researchers, capacity building, innovation support, etc., targeting a broad spectrum of stakeholders and implemented by experienced teams in EU and key players in all the EaP countries¹⁶.

In the forthcoming Framework Programme Horizon Europe it is obvious that the need for such a support will become equally or even more pressing. There is therefore a need to timely foresee such support actions, whatever form they could take (e.g. CSAs, activities under the Int. Cooperation Service Facility, etc.).

Recommendations¹⁷

Recommendation 32: Need for a support action

A support action from the EU side will be needed, in agreement with the European Neighbourhood Policy, in order to provide the necessary assistance to the EaP countries for a successful participation in Horizon Europe and the ERA.

Recommendation 33: Appropriate and sustainable design of support actions

For shaping such a support, the concepts of coherence and continuity should be taken into account: ad-hoc activities will not be able to provide the necessary support, especially when considering that despite the importance of the association, too few persons at the level of authorities/ministries in the EaP countries are assigned to its promotion.

Recommendation 34: Setup of an active and committed network

Connected to the aforementioned concepts is the need of an active network working closely with the national authorities and the research communities. Such in-situ and committed network is of paramount importance in order to convey information and expertise from the EU side and to stimulate the organization of events locally allowing to discuss common challenges and to share best practice examples. Such a role could eventually be taken by the NCPs network but for the time being, the frequent changes in the nominated NCPs, the (minor) share of the time they devote to that role and the lack of benefits or remuneration as NCPs, cannot guarantee an effective support toward the STI community, when compared to a network setup in the context of a support action.

¹⁶Ongoing CSA for the EaP countries: ‘EaP PLUS’ project (www.eap-plus.eu)

¹⁷ Based on the conclusions of the EaP PLUS Deliverable 6.4 “Analysis of the project’s implementation”.

Chapter C. Improving the EaP STI systems

The newly independent states of the Eastern Partnership region, since their independence have set out to transform their STI systems. Unfortunately, the problematic economic framework conditions during the 1990s didn't allow significant reforms and changes have only been initiated after the turn of the century and at various degrees from country to country while currently transformation hasn't been achieved in practically any EaP country.

The EU is supportive to the EaP countries in order to successfully conclude this process of transforming their STI systems. The intention to provide such support is not a sign of benevolence but rather a mutually beneficial objective with benefits for the EU and its Member States.

In recent years and in the context of the aforementioned support, the EU has implemented a series of actions to assess the situation and gather information about the status quo of the national STI systems, as well as in the form of hands-on recommendations to the EaP countries for the transformation of their STI systems:

- In 2012, the “White Paper on Opportunities and Challenges in View of Enhancing the EU Cooperation with Eastern Europe, Central Asia, and South Caucasus in Science, Research, and Innovation” was published in the frame of the EU funded FP7 project IncoNet EECA. The “White Paper” gives an overview of the state of affairs of STI policies, describes challenges and gives recommendations, providing also detailed “country reports” for all countries of the region¹⁸.
- Policy Mix Peer Reviews of Armenia (2015) and Georgia (2016) have been implemented by the FP7 project IncoNet EaP¹⁹. In the course of these policy reviews the existing STI policy mix in both countries have been critically examined, and policy advice from peers in EU and Eastern European countries has been given.
- Within the framework of the Horizon 2020 Policy Support Facility (PSF), three further peer reviews have been recently implemented:
 - Peer Review of the Moldovan Research and Innovation System (2016)²⁰;
 - Peer Review of the Ukrainian Research and Innovation System (2016)²¹;
 - Specific Support to Georgia: Final Report – Improving the effectiveness of the Research and Innovation System in Georgia through prioritisation, selectivity and links to business (2018)²².
- Within the scope of the RI-Links2UA project, the implementation of the recommendations given by the PSF peer review of the Ukrainian R&I system has been monitored (publication due in 2019)²³.

¹⁸ <https://www.increast.eu/en/1270.php>

¹⁹ <https://www.inco-eap.net/en/390.php>

²⁰ <https://rio.jrc.ec.europa.eu/en/policy-support-facility/peer-review-moldovan-research-and-innovation-system>

²¹ <https://rio.jrc.ec.europa.eu/en/policy-support-facility/peer-review-ukrainian-research-and-innovation-system>

²² <https://rio.jrc.ec.europa.eu/en/policy-support-facility/specific-support-georgia>

²³ <https://ri-links2ua.eu/project/results>

- Finally, six fact-finding missions with subsequent country reports have been implemented within the framework of the EaP PLUS project between autumn 2017 and early 2019 (publication due in 2019)²⁴.

These reports and fact-finding missions certainly differed from each other in approach and focus. However, all of them converge in description of the challenges and needs for improvements in the fields of ‘governance of the STI systems’; ‘STI funding’; ‘role and functioning of the STI performing institutions’; ‘research – industry links and innovation’. The major identified challenges and needs can be summarized as follows:

Governance of the STI systems

- Despite a certain progress in adopting strategic documents that define goals and means for their research and innovation policies in most of the EaP countries, *a coherent and comprehensive strategic basis for the STI policy is still often missing* or not clearly visible among several habitually overlapping laws and partial strategy documents. As a consequence, *priority setting is weak* at national but also at international STI cooperation levels.
- The decision making processes need to be improved in terms of efficiency and coherence, with clearly defined and balanced roles of the political and operational authorities, moving also away from over-centralized practices.
- Measures to restructure the STI governance have also been launched, most notably perhaps in the case of Ukraine with the establishment of the National Board on the Development of S&T. In addition, new intermediate bodies, facilitating the definition, implementation of research and innovation policies have been created (e.g. the Shota Rustaveli National Science Foundation of Georgia – SRNSFG and Georgia’s Innovation and Technology Agency – GITA; the National Agency for Research and Development – NARD in Moldova or the Science Development Foundation - SDF in Azerbaijan).
- Excessive administrative burdens need to be abolished since they affect the efficiency of the research performance and of international cooperation activities.

STI funding

- In all EaP countries the funding for STI is insufficient, never exceeding a GERD/GDP ratio of 0.5%. Such low levels of funding are not allowing a sustainable development of STI systems and have direct negative repercussions on human resources, researchers’ careers and the attractiveness of the whole research sector.
- The structure of the STI funding is also problematic with the major part of the GERD being allocated through institutional funding.
- It is therefore obvious that the EaP countries must increase their STI funding, introducing also a continuously increasing share of competitive and performance-based funding.

²⁴ <https://www.eap-plus.eu/>

Role and functioning of the STI performing institutions

- In most EaP countries there is still a too strong segregation between the education and the research activities, with the latter ones being implemented by the National Academies of Sciences (plus some institutes belonging to line Ministries), while the universities are only timidly introducing research in parallel to their largely overwhelming education activities. In that respect, incentives and measures should be taken to reduce the education - research divide by intensifying the links and collaboration between universities and research & technology organisations.
- The autonomy of all research institutions, including universities, needs to be increased, allowing them to define their own priorities, to allocate their resources and to develop attractive framework conditions (salaries, career perspectives, etc.) for their staff.
- In terms of salaries, while it is understandable that quick changes are not to be expected, performance-based salary incentives in the public sector and visible planning of first steps in career development is a must for securing the human capital.
- At the same time, evaluation procedures should be introduced for all the research performing institutions (universities and research centres) that will eventually orient the necessary reforms of the research landscape through strengthening, merging or even closing research entities.

Research – industry links and innovation

- A common challenge for all EaP countries is to bridge the gap between research and industry: this gap is reflected in the statistics with the BERD being only a small fraction of the GERD and it is intensified by the low performance of the enterprises in research as well as by the barriers or even exclusions of the enterprises from the public research funding.
- In that respect, measures and incentives should be developed in order to considerably increase the cooperation between research institutions and the private business sector in all EaP countries.
- In parallel, the framework conditions for innovation should be improved by developing Technological Parks, Incubators, clusters formation, innovation financing, etc. (see also Chapter D - Innovation).

Recommendations

Recommendation C1: Consolidating (or initiating) the reforms of the STI systems in the EaP countries

The present report is *reconfirming* the aforementioned conclusions and recommendations of the series of support activities implemented by the EU towards the EaP countries and acknowledge that several EaP countries, and in particular the ones associated to Horizon 2020, are already engaged at various degrees in reforming their STI systems to meet the standards of the ERA. The cooperation with the EU and its Member States is instrumental in that process and there are further broad possibilities for extending this cooperation as it is described here below in that section.

In that respect, the reforms of the STI systems in the EaP countries should further move forward, *consolidating and accelerating the process* in the countries already engaged in that, or *initiating* it in the other.

In the latter case, and especially in the cooperation of the EU with Azerbaijan and Belarus, the *instigation of a more structured policy dialogue in STI* could be instrumental not only for improving the national STI systems but also for removing barriers that may exist in the cooperation with EU.

Recommendation C2: Monitoring the implementation of the recommendations from Peer Reviews

As mentioned earlier Peer Reviews of the STI systems have been implemented in four out of the six EaP countries, providing pertinent recommendations to the national authorities about the necessary reforms. Since such reforms in most of the cases need lengthy processes involving many stakeholders for their implementation, *it is important to monitor that process and to assess the progress made*. This can consolidate the whole process, showing that ‘things are moving’ in a sound and well thought way.

A good practice example of such a monitoring was the report prepared by the RI-Links2UA project, on the implementation of the recommendations given by the PSF peer review of the Ukrainian R&I system (publication due in 2019)²⁵.

Such monitoring could be implemented in the future by any project similar to RI-Links2UA , or by the International Cooperation Service Facility, ENI projects, etc. Involving at least one international expert in such reviewing will increase the necessary independence from the local authorities.

Recommendation C3: Reporting and exchanging good practices at the ‘EaP Panel on R&I’ meetings

Since improving the STI systems in the EaP countries constitutes a decisive step for an enhanced participation in the ERA, it is recommended to regularly report about the progress achieved at the annual Panel meetings or at dedicated to reforms annual Panel events. Such reporting will stimulate the exchange of good practices among the EaP countries, showing at the same time the impact and outcomes of the actions under the PSF.

Recommendation C4: Follow-up reviews

Since the Peer Reviews constitute a relatively heavy and costly process that typically cannot be implemented in less than five years intervals, *organizing mid-term follow-up reviews* by small international panels and lesser effort, can provide to the national authorities a clear picture of the progress achieved and orientations on the prioritization for the future. Such follow-up reviews can build on the aforementioned monitoring, providing coherence to the whole process for reforming the STI systems.

²⁵ <https://www.eap-plus.eu/>

Recommendation C5: New Peer Reviews

Peer Reviews undeniably constitute a most valuable tool for assessing in a structured way the state-of-affairs of the STI systems and for developing recommendations for a step forward. Moreover, such reviews implemented by international experts facilitate the efforts of the national authorities by weakening the reactions against the necessary changes.

In that respect, the EaP countries should continue launching such reviews, repeating the process in Armenia, Georgia, Moldova and Ukraine at approximately five years intervals, and initiating the process in Azerbaijan and Belarus. The cooperation with the EU can be instrumental in that process, by providing funds for such reviews (through the PSF for the associated countries or through the ENI for Azerbaijan and Belarus), as well as by providing qualified peers and experts for their implementation.

Recommendation C6: Knowledge transfer and training in STI policy making

Improving the STI systems and accelerating the reforms necessitates in addition to the aforementioned recommendations, well trained staff in state-of-the-art policy making and policy delivery.

Here again, the EU-EaP STI cooperation can play a decisive role in *knowledge transfer* through:

- Staff exchange schemes between EU Member States and EaP countries;
- Training activities in the EaP countries that could be supported by the European Neighbourhood Instrument or the Service Facility in Support of the Strategic Development of International Cooperation in Research and Innovation;
- Participation of the associated countries in mutual learning exercises organized in the EU;
- Provision of assistance to implement the reforms by appointing EU experts in the EaP STI authorities, funded by the ENI or the Service Facility.

Chapter D. Innovation

The EU Framework Programme Horizon 2020 intends to couple research and innovation, emphasizing excellent science, industrial leadership and tackling societal challenges. Focusing on the inclusion of the application side of science, the programme clearly goes beyond funding purely “research for itself”. Instead, and in its core, the programme raises the question of how science can meet the demands and needs of society. For the countries of the EaP region, this specific focus of the framework programme is at the same time an advantage and a challenge: The need for research as an investment in the future, enabling smart, sustainable and inclusive growth and jobs, is evident, especially in the countries of the Eastern Partnership. However, near the end of Horizon 2020, it is clear that the focus on “innovation” has also left its mark on the statistics of EaP participation in the framework programme.²⁶

Although the situation differs quite substantially from one country to another, generally, EaP countries lack behind EU Member States when it comes to the question of bringing research results into practice for the sake of communities. There is a variety of reasons for this, amongst them specific and often difficult market conditions for the private sector and a “traditional” strength of the research landscape in fundamental sciences. In effect, the “potential” for innovation is relatively high in all EaP countries.

Recent fact-finding activities, including those of the EaP PLUS project, have articulated a series of recommendations in order to support conditions for innovation within EaP countries, to raise the level of innovation activities and ultimately to increase EaP participation in the EU framework programme for research and innovation.²⁷ Thus, it has been stressed that reliable framework conditions for prospering innovation landscapes (e.g. IPR regime, tax incentives and stable science-business links) need to be installed. Obviously, a stronger involvement of actors from national STI landscapes on the international level would have positive implications. This would, not least of all, positively affect the opportunities of innovative companies from the EaP region. The same is to say about specific support regarding the integration of innovation actors from EaP countries into Horizon 2020 consortia. Finally, EU-EaP cooperation in the sphere of technology platforms might be a suitable approach to support innovation performance in the EaP countries.

D.1 Strategic framework for innovation

Within the scope of the mentioned fact-finding and peer review activities in the EaP region, some policy recommendations have been developed. Apart of the focus on improving framework conditions and performance of the research sector, recommendations also aimed at improving innovation in EaP countries. In some fields, it is difficult to distinguish between

²⁶ Cf. Data from 2016: INCO-Net EaP: D2.2.b - Analytical evidence of S&T cooperation between EU and EaP countries - STI cooperation barometer between EU and EaP countries (2016) (<https://www.inco-eap.net/en/390.php>). New data will be made available in mid-2019 through the ongoing STI cooperation barometer survey: <https://www.eap-plus.eu/object/news/76>

²⁷ See below, section D.2.

what has been said about research and innovation, as measures recommended were to the benefit of both. This is the case when it comes to the definition of a strategic framework for the whole research and innovation sector. Obviously, policy strategies have been poorly articulated, if not missing altogether in the past. But in this respect, quite a substantial step forward has been made in most EaP countries, with Belarus being an exception. Within the present document, this issue shall be taken up again.

Recommendations

Recommendation D1: Providing strategic foundation for innovation

Whilst progress in the development of a strategic framework for innovation in some countries is acknowledged, it is recommended that strategic policy objectives should be developed in all countries. At the same time, specific attention should be paid in the strategic foundation for innovation activities that might help to facilitate coherent operation of all authorities and other stakeholders involved. Action plans should help to translate strategic orientation into concrete action.

Recommendation D2: Coherent performance of decision-making

Closely linked with the issue of strategic guidance is the need to better coordinate authorities and governmental actors. Thus, it is recommended that key stakeholders like ministries and agencies are enabled to act according to their roles. Coordination between and complementarity amongst these actors should be assured. Confusing decision-making on the strategic, operational and executive levels should be avoided.

Recommendation D3: Need for effective knowledge transfer

A prominent policy recommendation of recent peer reviews and fact-finding activities concerns the need of *assuring effective knowledge transfer*. Thus, *science-business links should be substantially endorsed*, amongst others through establishing brokerage networks and adequate measures for the *protection and management of Intellectual Property Rights*. In this way, and also through adequate *incentives*, actors from business and especially SMEs should be *induced to collaborate with the public research sector*.

Recommendation D4: Enhancing collaboration of research and business

Supporting *mobility between research and business*, as well as *funding for innovation actors* is another topic that has been put forward in the mentioned reports. In an economically difficult field of operation, the development of business activities is nevertheless partly dynamic in some cases (e.g. in Georgia). However, this dynamics is hardly based on research and development, and there is only low degree of cooperation between the research and business sectors. In this situation, supporting collaboration of researchers with entrepreneurial actors is recommended.

D.2 Moving on with EU4Innovation

For the last 15 years, the EU has been providing EaP countries with assistance in the domain of Research and Innovation, showcasing and explaining the existing tools available in the EU, as well as ensuring access of EaP countries to them (e.g. Horizon 2020, Erasmus, COST, the Policy Support Facility, COSME²⁸). A recent example is the initiative EU4Innovation.

EU4Innovation is a joint initiative of DG RTD and DG NEAR specifically designed for the EaP region. It aims to coordinate EU assistance to the Eastern Partnership countries in the area of innovation. Launched by Commissioners Moedas and Hahn during the eighth Eastern Partnership Informal dialogue (Yerevan, November 2016), the EU initiative combines all EU activities that support the development of EaP countries innovation capacities, notably those funded under the Horizon 2020 programme and the European Neighbourhood Instrument.

EU4Innovation was and still is an excellent initiative that bridged the gap that was often observed between the activities of DG RTD and DG NEAR. Since the launching of EU4Innovation, enhance dialogue and coordination exists among the two DGs and synergies are developed among the implemented actions.

In that respect the EU4Innovation initiative should continue and should be further strengthened in the future. Such strengthening could benefit from the following recommendation(s):

Recommendation

Recommendation D5: Allowing bottom-up input for EU4Innovation activities

EU4Innovation is mainly an internal coordination initiative at the EU Commission level, with DG RTD and DG NEAR having their own procedures and tools. When considering that, setting up a certain procedure *allowing bottom-up suggestions* for actions that could fit under the EU4Innovation umbrella could be beneficial.

D.3 Applying Smart Specialization Strategies in the EaP region

One of the recent trends in the quest for innovation when it comes to policy making are Smart Specialisation Strategies, abbreviated also as “S3”. The concept of S3 stems from the field of regional development and focuses on the inclusion of a broad set of stakeholders in regional policy making in order to jointly identify the particular economic strengths of a region. By doing so, S3 helps to bring together all actors concerned with innovation on the regional or national level (S3 can be tailored to the national level as well).

The S3 platform has started to promote the concept of “collective leadership” and argues that the governance model for S3 must be able to meet the needs of all actors involved, i.e. actors representing policy, industry, academia and civil society.²⁹ As part of the revision of the EU

²⁸ With exception of financial instruments

(http://ec.europa.eu/research/participants/data/ref/other_eu_prog/cosme/legal/3rd-country-participation_en.pdf)

²⁹ <http://s3platform.jrc.ec.europa.eu/s3-governance> (19.03.2019)

cohesion policy for the period 2014-2020, much emphasis was given to S3 as a novel approach in the work of regional development. Following the principles of regional development, S3 aims to take all stakeholders concerned in the regional development process on board and to engage them in an entrepreneurial discovery process identifying the concrete (micro-) economic potentials of a region.

Ukraine was the first EaP country where a dedicated pilot on S3 was launched already. In 2017, the JRC Smart Specialisation Platform officially announced this partnership with Ukraine, the aim of which is to transfer the tested S3 methodology (used by more than 180 regions in Europe already – as of October 2017) to the Ukrainian regions. At the same time, this strategic partnership is embedded in the EU neighbourhood policy.³⁰ This support service provided by the JRC's team in collaboration with independent experts on the topic is currently still running³¹.

In that context, four pilot regions have been identified to implement the process of developing the strategies. The support provided aims at enabling local stakeholders to gain the competences needed for continuing the smart specialisation strategy design and its future implementation. Within this action the S3 platform helps Ukraine to identify economically competitive advantages and to exploit the innovation potential, building on a process of entrepreneurial discovery for smart specialisation.

A series of activities has already been implemented in Ukraine since the launch of the smart specialisation support. Besides specific information and training events targeting the S3 stakeholders in the country, which were held both in the capital and in the regions, two types of reports in view of the country's current situation were moreover published.

The “mapping reports” cover the economic, innovative and scientific potential of the four pilot regions for the S3 support, namely Cherkasy, Kharkiv, Zakarpattia, Zaporizhzhia. The report on the “potential of S3 in the EU enlargement and neighbourhood policies”³², published in December 2016 (so even before the formal JRC support for Ukraine was launched), looks at the developments of research and innovation policies, and in particular the contribution of S3 to regional policy making, in 11 EU enlargement and neighbourhood countries.

Ukraine has considerably moved forward with smart specialisation. Not only has the country's government officially started to receive support from the S3 platform, also the development of tailored strategies for four selected Ukrainian regions is well under way. Regarding the other countries in the Eastern Partnership, smart specialisation hasn't been lifted to this extent, nor has it received that much of attention.

³⁰ <https://ec.europa.eu/jrc/en/news/jrc-teaMember States-ukraine-smart-specialisation-strategies-innovation-driven-growth> (11.03.2019)

³¹ <http://s3platform.jrc.ec.europa.eu/ukraine> (accessed 14.03.2019)

³² <http://s3platform.jrc.ec.europa.eu/-/report-the-role-of-smart-specialisation-in-the-eu-enlargement-and-neighbourhood-policies> (20.03.2019)

Currently, the S3 platform has also opened chapters on Georgia³³ and Moldova³⁴ in addition to the one on Ukraine. However, compared to Ukraine the support dimension and inter-institutional exchange between the S3 experts and national administrations are at a distinctive earlier stage in the two countries.

Regarding Georgia, no official events, documents or related publications have been yet released on the S3 platform. On the other hand, there is some evidence that cooperation with Georgia must have already started (from an article published on the S3 platform), following the JRC's logic to expand its cooperation specifically for EU third countries³⁵. In the same context, Belarus has agreed with the JRC to start working on smart specialisation.

For Moldova, a list of events and related documents can be found online within the S3 platform's country section. Since 2016, Moldova is moreover officially registered member on the S3 platform (among the registered countries and regions on the S3 platform³⁶ are only Moldova and Ukraine from the EaP – which apparently does not preclude the JRC team to start cooperating with the others too). Only in respect to Azerbaijan, the cooperation on smart specialisation hasn't started yet.

Thanks to the aforementioned developments over the past few years, the discourse on S3, its methodology, the design of S3 strategies and their actual use in the making of regional development policies has considerably moved forward within the EU. The regional and national country reports on the EC's Smart Specialisation Platform³⁷ provide an overview where the regions and countries within the EU stand in regard to their activities on smart specialisation. But how to transfer this knowledge also to non-EU countries, including those in the Eastern Partnership?

Learning about S3 in the Eastern Partnership

The adaption of S3 is definitely interesting in the context of regional development in the Eastern Partnership countries. Through the S3 online platform, the EU already seeks to share benefits of S3 policy-making in the EU with neighbouring countries (including both those in a close and more distanced neighbourhood). The new EU neighbourhood policy recognises that the modernisation and diversification of economies should be encouraged by facilitating increased participation of neighbourhood countries in EU initiatives and applying successful models such as smart specialisation strategies. In fact, there are several activities already up and running, specifically targeting non-EU countries and their ambition to learn from the EU's S3 model and the discourse around it.

Among those possibilities for *knowledge transfer* most relevant for the EaP countries are the following:

³³ <http://s3platform.jrc.ec.europa.eu/georgia> (20.03.2019)

³⁴ <http://s3platform.jrc.ec.europa.eu/Moldova> (20.03.2019)

³⁵ <https://www.clustercollaboration.eu/news/made-eu-smart-specialisation-inspires-world> (20.03.2019)

³⁶ <http://s3platform.jrc.ec.europa.eu/s3-platform-registered-regions> (20.03.2019)

³⁷ <http://s3platform.jrc.ec.europa.eu/-/latest-s2e-activity> (accessed 06.03.2019)

- Possibility to host “S3 design learning workshops” in non-EU countries (such workshops have already taken place for instance in Serbia, Moldova and Ukraine);
- Use of EU instruments suitable to transfer S3 good practices to the EaP countries – e.g. through the ETF – European Training Foundation or the EaPTC – the Eastern Partnership Territorial Cooperation;
- Active membership at the EC’s Joint Research Centre (JRC) S3 platform;
- Active exploration of services offered under the JRC’s so called “Enlargement and Integration Actions”: Specialised workshops, conferences, training courses, peer reviews etc.;
- Increasing the participation in transnational cooperation projects with EU partners in order to get better access to certain knowledge pools on S3 (e.g. through Horizon 2020 or the upcoming Horizon Europe for those EaP countries associated to the programme).

In spite the many open questions which are provoked by the current transformation processes happening within the research and innovation systems of the countries in the Eastern Partnership, these developments might also be conceived as “opportunities”. This report is focussing on some of them in order to underline the potential which is available locally.

Recommendations

Recommendation D6: Applying S3 in regional development

Any reform process in the R&I sector should be accompanied by a reflection on S3 as a new approach on the crossroads between policy-making in R&I and regional development. As a consequence, S3 could be more integrated in the strategic long-term plans for developing national R&I capacities as well as into the “toolbox” for regional development actions. Only if the concept of S3 and the design of S3 adapted to the local circumstances of a chosen region are consequently reflected in both in R&I and regional development policy-making, substantial changes benefitting the development of regions within the Eastern Partnership can be initiated.

Recommendation D7: The importance of decentralised decision-making

S3 are inevitably linked to a decentralised approach in the organisation of national policy-making. In other words, the successful implementation of smart specialisation as a means for regional development and against the background of an entrepreneurial spirit also applied to the local and national R&I sector, is strongly dependent on a “right” form of governmental system. As the stakeholders in the “S3 journey” are chiefly acting at the local level, the set-up of the decision-making must be able to reflect this. Power to take certain decisions must be given to the local level, in order to allow all regional stakeholders involved to make contributions according to the stakes they possess in the overall process. Therefore, S3 is a powerful door-opener to long-overdue reform processes in the national governance systems of the EaP countries, since the concept is firmly anchored within decentralisation principles.

D.4 Promoting Clusters in the EaP countries

The cluster landscape in the EaP countries is not yet well developed, despite a growing political interest in the topic and an increasing number of cluster-like organisations emerging. Cluster policies in the EaP countries are in their early phase of development with the concept of “cluster” being recognized in the law and strategic documents, but specific cluster programmes so far not being implemented. In the past two years some progress has been made in terms of creating awareness among policymakers on the topic of clusters and pushing for the creation of national cluster policies. Nevertheless, the experts involved in the EaP Plus project have identified a need for further promotion of the cluster concept in the EaP countries for the benefit of the local economies and the enhancement of Research and Development, technological progress, and the internationalisation of SME’s.

Globally, it is possible to distinguish between two kinds of developments related to cluster development in the six EaP countries. The first is a top-down approach, in countries like Belarus where the state has a strong interventionist role in the economy. The other is a bottom-up approach, where cluster-like organisations have existed for several decades already, and the policy and institutional frameworks for developing clusters are still not operational, such as Georgia. Existing cluster development related policies in the EaP countries are predominantly organised at a national level today, and there seems to be little interaction between national, regional and local levels of cluster development related policies. In all six EaP countries, there is a growing dynamics for regional sectorial specialization.

The EaP PLUS project has dedicated several activities for the benefit of emerging cluster organisations in the EaP countries: a review of the cluster activity in EaP countries³⁸; the implementation of a grant scheme to support EU–EaP cluster collaboration³⁹; a workshop involving the grant recipient clusters to share their experiences⁴⁰; and the current report. Based on these activities undertaken, a set of recommendations is put forward.⁴¹

Recommendations *(for policy makers in the EaP countries)*

Recommendation D8: Raise awareness amongst policymakers in the EaP countries on why cluster organisations are beneficial and needed

It is recommended to raise awareness of policymakers in the EaP countries on the economic and social benefits that cluster organisations can bring and showcase successful cluster policies implemented in EU countries. It shall be explained why state support is needed, and how such investment will generate value for the government in the long-run.

Recommendation D9: Encourage the exchange of good practices in terms of cluster policies and cluster development programmes between policymakers and governmental institutions from EaP countries and the EU Member States

³⁸ <https://www.eap-plus.eu/object/document/53>

³⁹ <https://www.eap-plus.eu/object/news/154>

⁴⁰ <https://www.clustercollaboration.eu/news/towards-cluster-collaboration-between-eu-eastern-partnership-countries>

⁴¹ Further recommendations and details on the cluster policies and development can be found in the “Report on the Cluster Grant Scheme, Workshop and Recommendations” of the EaP PLUS project.

In line with the previous recommendation, it is strongly recommended for EaP R&I stakeholder to boost policymakers in their countries to engage in exchanges of good practices with EU policymakers and governmental institutions, to benefit from the EU Members states' existing experience in terms of building and implementing cluster policy programmes intended to encourage the development and excellence of clusters.

Recommendations *(for EaP clusters)*

Recommendation D10: Engage in cooperation activities with cluster organisations from the EU Member States

It is recommended to boost EaP clusters to engage in collaboration with EU clusters, enabling them to learn good practices in terms of cluster management. The EaP Plus Cluster Grant scheme enabled six clusters from the EaP countries to engage in such collaborations, which brought many fruitful results, such as the establishment of the first cluster organisation in Armenia ('Green Energy Cluster') and a Cluster Association in Georgia. The grant scheme also had a significant impact on the advancement of cluster-related issues in the EaP countries. More details on the six collaboration activities and the results that they brought can be found in the "*Report on the Cluster Grant Scheme, Workshop and Recommendations*" published in 2019 by the EaP Plus project.

Recommendation D11: Increase visibility of EaP clusters at international and national levels

EaP clusters should ensure that they are visible especially at international level. In that respect, registration to the European Cluster Collaboration Platform (ECCP)⁴² should be aimed as a first priority, complemented by registration to a national platform (if there is one) and by creating dedicated websites.

Recommendations *(for the European Commission)*

Recommendation D12: Harmonizing eligibility criteria for EaP clusters in EU funding

It is recommended to EU policymakers to consider harmonising and clarifying the eligibility criteria for EaP countries to participate in various types of EU cluster related events, programmes, platforms and initiatives supported by EC DG's related to industry and innovation support.

Through the EaP PLUS project, as well as other measures, the EC has successfully supported clusters in the EaP countries. Nevertheless, in other cases administrative barriers have been identified. A recent application by a Ukrainian cluster in a call of DG GROW was rejected since the related event was going to take place outside the EU. Thus, while there is on the one hand a strong push by the EC (through the EaP PLUS project) to enhance cluster development in the EaP countries, on the other hand an application prepared by an ambitious EaP cluster, trying to organise a highly impactful event involving numerous Ukrainian clusters, was rejected because the event was going to take place in an EaP country associated to Horizon 2020, and not in the EU. Thus, there seems to be an inconsistency between initiatives.

⁴² <http://clustercollaboration.eu/>

Recommendation D13: Focus on cluster development in bilateral cooperation with EaP countries

It is recommended to consider including support for EaP countries regarding cluster development in the European Commission's bilateral cooperation activities with EaP countries, as well as in the EU Member States' bilateral cooperation programmes and activities.

D.5 Innovation support through the Enterprise Europe Network (EEN)

The Enterprise Europe Network (EEN) is the biggest business and innovation support network in the world (60 countries, 600 member organizations) with main objectives to:

- Support international partnerships: expertise, contacts and events to connect to international partners to grow the business
- Provide advice for international growth: expert advice for growth and expansion into international markets
- Support for business innovation: services to assist turning innovative ideas into international commercial successes⁴³

At present, organizations from five EaP countries are members of the EEN, namely, Armenia, Belarus, Georgia, Moldova and Ukraine. Meanwhile, Armenia, Moldova and Ukraine are also part and contribute to the COSME programme⁴⁴. The activities under this program are directed to the internationalization of entrepreneurship in involved EaP countries, enlargement of their opportunities for entering into European markets, development of their innovative capacities and technological advancement. Though, all three countries are not participating in the financial instruments of the programme, the status of an Associated Country allows SMEs from these countries to participate in Horizon 2020 SME Instrument Phase 1 and Phase 2 (Fig. 1).

⁴³ <https://een.ec.europa.eu/>

⁴⁴ <https://ec.europa.eu/docsroom/documents/34263>

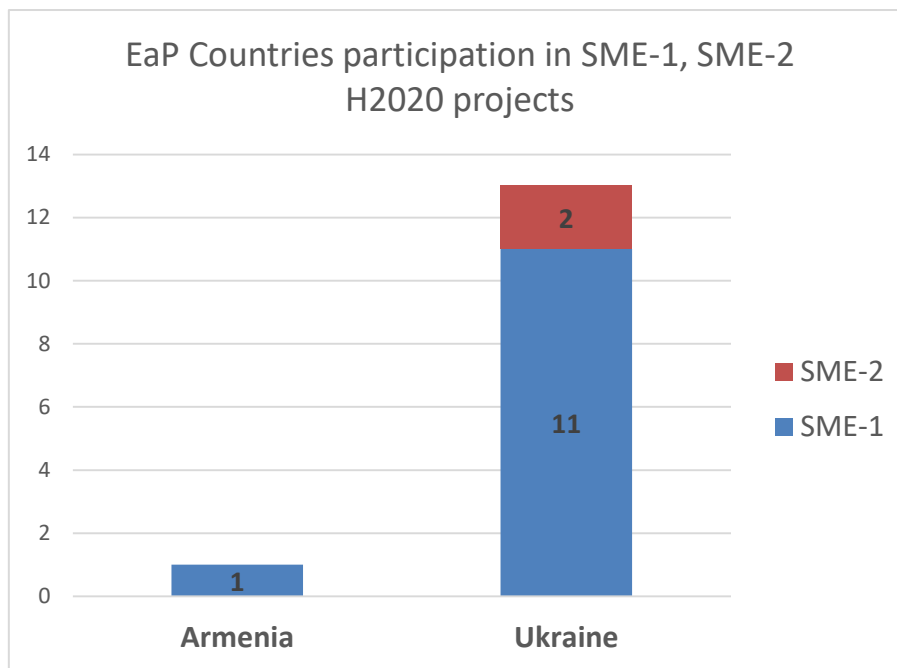


Fig. 1. EaP Countries participation in SME-1, SME-2 Horizon 2020 projects

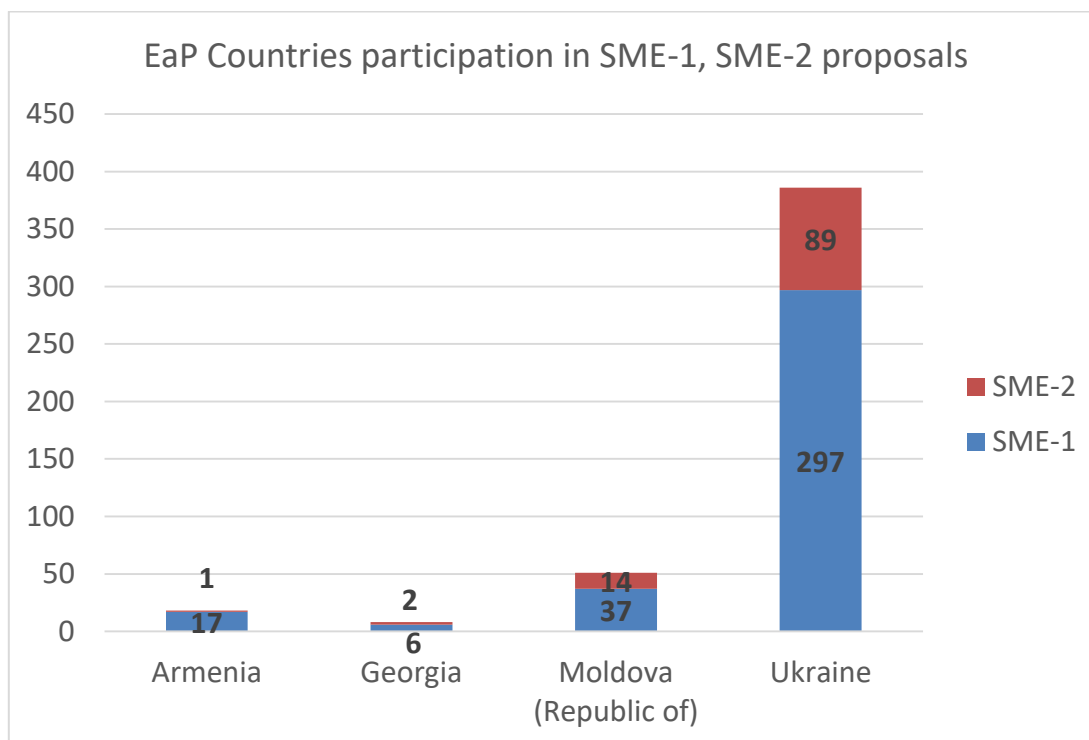


Fig. 2. EaP Countries participation in SME-1, SME-2 Horizon 2020 proposals

Recommendations

Recommendation D14: Raising awareness towards EEN in EaP

The EEN could contribute to improvement of innovation capacities of companies in EaP countries supporting engineering and innovation management, as well as quality improvement and implementing various EU standards and industry-specific international standards. To better exploit these opportunities, the network should be better promoted; national authorities should provide sufficient support for the network; wider information and awareness campaigns could be developed, with the support of entrepreneurial associations and other stakeholders, to ensure that potential beneficiaries are aware of the possible forms of support and how to access them.

Recommendation D15: Strengthen cooperation between NCPs and EEN

All NCPs are encouraged to establish mutually supporting relationships with EEN in their country, in accordance with the national arrangements. In particular, NCP support for SMEs (including SME Instrument) should be performed in liaison with EEN, according to the national situation. This includes provisions for a one-stop-shop service for SMEs, particularly newcomers, directing potential applicants to the most appropriate service.

EEN provides excellent opportunities for business and/or academic partners from EaP countries to grow internationally and search partners to manufacture, distribute, co-develop and supply products, ideas and services. At present, only 379 business or partnership offers from companies and research organizations of 5 EaP countries (61 from Armenia, 10 from Belarus, 10 from Georgia, 9 from Moldova, and 289 from Ukraine) have been found at the EEN database⁴⁵. There is unused potential here and additional efforts towards increased awareness campaigns in EaP countries about opportunities of EEN network might be needed.

One of the 20 deliverables of the latest Eastern Partnership action plan is the objective to improve the investment and business environment and unlock Small and Medium-sized Enterprises' (SMEs) growth potential in EaP countries. For sure, more efficient use of the opportunities provided within the EEN network by entities in EaP countries for business partnership could be one of possible mechanisms to address at least the second part of the stated objective.

⁴⁵ [https://een.ec.europa.eu/partners?ff0\]=field_region%3Anoneucountries](https://een.ec.europa.eu/partners?ff0]=field_region%3Anoneucountries) (accessed 16.03.19)

ANNEX I – List of Recommendations

A. POLICY ISSUES		
A.2 EaP Panel on R&I		Targeted to
A1	<p><u>Continuity of the ‘EaP Panel on Research and Innovation’ beyond 2020</u></p> <p>Beyond 2020 the Panel should continue to overview the EU-EaP R&I cooperation, being necessary as an integral part of the EU’s policy towards the EaP countries. It provides the opportunity to make an overview at least once a year on the state of the cooperation, complemented by a ‘Panel event’ also every year, allowing therefore the EaP policy makers to meet twice a year.</p>	EC
A2	<p><u>More interactive “modus operandi”</u></p> <p>Without deviating too much from the fact that the EC is organizing and chairing the Panel, a stronger say of the EaP countries on agenda items to address specific issues could be beneficial. That could be combined to a slightly longer duration of the meetings (1.5 days) giving some space for discussion on the information received by the EC, on the state of affairs in the EaP countries (exchange of best practices) and on possible future actions.</p>	EC
A3	<p><u>Profile and number of participants from EaP countries</u></p> <p>When considering the broad spectrum of policies, tools and projects that are put in place by the EC and are presented at the Panel meetings, it becomes evident that adequate stakeholders from EaP need to participate. A single representative from a ministry typically in charge of delegate’s duty, is not sufficient for triggering a reaction and profiting of the existing opportunities. The 6th Panel meeting (December 2018) constitutes a good practice example in that sense since several representatives per EaP country participated.</p> <p>Therefore there is a need to involve on a systematic basis EaP representatives from a broader spectrum of stakeholder institutions. The invitation to the meetings should include orientations for the expected profiles of the representatives that should participate, in relation to the expected outcomes of the meetings.</p>	EC

A4	<u>SFIC and Panel representatives from EaP countries</u> Despite of the different roles and contexts between the EaP Panel (chaired by the EC) and the Strategic Forum for International STI Cooperation (SFIC, under the Council of the EU), the possibility for the EaP countries to include among their delegates to the Panel also their representative/observer in SFIC should be envisaged. Such initiative would allow the EaP countries to better understand the position of the EaP policy in the broader context of international STI cooperation of the EU.	EC
A5	<u>Stimulating the participation of EU MS</u> The EaP Panel in its current functioning, i.e. mainly as a forum for presenting the EC's initiatives, does not leave a lot of room for an active participation of EU Member States. If however, the scope of the Panel meetings is extended (as mentioned above) by adding a half-day for discussion on the state-of-affairs and needs of the EaP countries, it would certainly be of more interest to the EU Member States that could not only hear the EaP countries but also step-in for tackling existing needs through their numerous bilateral cooperation programmes.	EC
A.4 Association to H2020		Targeted to
A6	<u>Continuation of association to Framework Programme during Horizon Europe</u> In order to keep the momentum and to fully deploy the benefits of the association it is recommended to all associated to H2020 EaP countries to continue their association to the next Framework Programme Horizon Europe.	EaP countries (policy level)
A7	<u>Support to association process</u> The association process will need to be supported by the following actions (detailed explanation in other parts of this report): <ul style="list-style-type: none"> o Widening actions fully accessible to the EaP countries, enriched with specific actions or tailored focus wherever possible; o By a better use of all available tools, possibly under the EU4INNOVATION initiative for implementing reforms and modernizing the STI systems (based on the PSF peer reviews); for renewing research infrastructures; etc. o A Coordination and Support Action (EaP PLUS like) should continue to exist, as presented in Section B.8, recommendations B32, B33, B34. 	EC

B. FROM H2020 TO HORIZON-EUROPE		
B.3 Horizon Europe (HE)		Targeted to
B1	<u>Ex-aequo criteria and additional specific support measures to raise participation from EaP countries</u> In Horizon-Europe the ‘Widening package’ including the ex-aequo criteria, which will address applicants from the low-performing EU MS, should encompass the also low-performing EaP countries, while additional more specific support measures to raise participation in Horizon-Europe from EaP countries would also be much welcome as a means to contribute to the Eastern Partnership policy.	EC
B2	<u>Specific actions supporting participation of partners from EaP countries in EU consortia</u> Among more specific actions in Horizon Europe, ways to overcome the aforementioned barrier to meet and enter EU consortia could be envisaged including, e.g.: <ul style="list-style-type: none"> • Means and incentives supporting attendance in proposal preparatory steps; • Possibilities to join successful consortia through ‘toping-up’ funding; • Inclusion of topics with recommended or mandatory participation of EaP partners in consortia, as it was sometimes the case in targeted calls in Horizon 2020 and even more in FP7. 	EC
B3	<u>Continuation of policy towards the Near Neighbour Countries of COST</u> In Horizon- Europe the policy towards the Near Neighbour Countries of COST should continue and provisions for a stronger participation of EaP countries should be made.	COST, EC
B4	<u>Promoting the participation in COST actions</u> The participation in COST Actions (new and ongoing) should be broadly promoted in the EaP countries as a means for increased networking that can pave the way for more applications in the Framework Programme. In that respect, COST National Coordinators should be nominated in every EaP country and the procedures for joining COST Actions should be streamlined.	EaP countries, COST, EC
B5	<u>Extending EU-EaP collaboration on topics in the field of citizen science</u> It is recommended that EU-EaP collaboration is extended to topics in the field of citizen science since they contribute to open science and responsible research and innovation that are far only emerging in the EaP.	EaP countries, EC

B4. Programme Committee Members in EaP countries	Targeted to
<p>B6 <u>Importing best practices for an efficient representation in FP Programme Committees</u> The Ministry/Department responsible for the Association to H2020 should have a full responsibility for coordination of the national PC system as well as overseeing and assisting the PC members since this constitutes a key element of the association process. Best practice examples from EU Member States should be copied. This could be done through a study on EU MS best practices; a study visit of EaP stakeholders to EU MS administrations; bilateral exchanges (TAIEX); etc. The output of that should be proper Terms of Reference for the delegates (adapted to the local conditions and expectations) as well as a minimum support package from the Ministry towards the PC members (budget for travel; smoothing the administrative procedure; support to consultation processes; etc.).</p>	<p>EaP countries (policy level)</p>
<p>B7 <u>Training at regional EaP level for nominated PC representatives</u> For the Associated EaP countries (but also for the non-Associated ones), acquiring in a structured way information on the way the FP is managed and on the role the PC delegates have to play can only be beneficial for avoiding false expectations and perceptions, allowing a more effective participation in H2020, Horizon Europe and in the ERA. Such a training could be organized at regional EaP level. An example is the workshop organized in March 2018 in Kiev under the ‘EaP PLUS’ project that proved to be very pertinent and unique in its kind so far.</p>	<p>EaP countries (policy level); EC</p>
<p>B8 <u>Assessment of the performance of the national PC system coordination and of the nominated PC members</u> Before taking any initiative to reconfirm or change the PC representatives, an assessment of their performance should take place, based on criteria that will arise from the experience of EU MS. - In terms of the PC system coordination such assessment should review and improve the process of nomination of PC delegates and the procedures for participation in PC meetings participation. - In terms of nominated PC delegates the assessment should identify the representatives that were not able (for any reason) to properly fulfil their tasks until now and the ones that successfully played their role and merit not only a re-confirmation but also an investment for their training and for assisting them in their task. Such assessment (in 2019 – 2020) should be considered as preparatory work for Horizon- Europe, where continuity for the active PC representatives should be ensured while timely replacing by adequate ones the non-performing.</p>	<p>EaP countries (policy level); EC</p>

B.5 Recommendations towards NCPs		Targeted to
B9	<u>Participation of NCPs from all EaP countries in NCP support projects</u> Consider the opening up of the NCP support projects for participation of NCPs from all EaP countries regardless the status of a country in HE, as part of the EaP policy.	EC
B10	<u>Access to information and experience for NCPs</u> Providing better access to information and experience for EaP NCPs and promoting EU – EaP people-to-people contacts at the level of NCPs could constitute an important concrete activity within the Eastern Partnership Platform 4.	EC; Eastern Partnership Platform 4
B11	<u>Addressing the needs of EaP NCP systems</u> Wherever applicable, address the needs of EaP NCP systems for training and skills improvement that will be vital during the transition phase from H2020 to HE, as well as during the first years of HE. Such support could take the form of bilateral cooperation actions between the EU and the respective EaP countries, managed by EC delegations in EaP countries.	EC
B12	<u>Providing access to statistics on Framework Programme performance also to NCPs in non-associated countries</u> NCPs and especially NCP coordinators in the EaP countries often report to the national governments on the programme implementation, develop recommendations and provide analytical evidence. This task is hardly possible without an access to statistics that are currently available only to NCP coordinators from EU MS and AC, while for the non-associated EaP countries, the statistics are provided on case by case basis in a less relevant aggregated form. In order to influence policy making related to participation in the Framework Programmes, the possibility to provide to all EaP NCP coordinators adequate statistics on applications regardless the status of a country in HE should be considered.	EC
B13	<u>Investing in NCP systems in EaP countries</u> Regardless the status in HE, the EaP national governments should recognize that by investing in NCP systems they are supporting their own national innovation ecosystems. Therefore, it is within the national interests to create favorable conditions for the effective functioning of NCPs and sustainably improve them in line with the best EU MS practices. Transferring these practices can take place using TAIEX, instruments of bilateral cooperation with certain EU MS, twinning of NCPs supported in the NCP networking projects, etc.;	EaP countries (policy level)

B14	<u>Financial support from EaP authorities to their respective NCP systems</u> The core task of the national EaP authorities is to timely set up a robust national NCP system and ensure financial support for it. The latter should include personnel costs, as well as budget for travels and promotional events, with each of these lines being equally important for an efficient NCP system. When prioritization for funding will be needed, preferential support should be given to National NCP Coordinators, Legal and Financial NCPs (as mostly demanded ones) and NCPs in the areas (programmes) of highest national interest and potential.	EaP countries (policy level)
B15	<u>Using EU cooperation instruments for financial support to NCPs</u> In terms of financial support to NCPs, apart from the national sources, the EU instruments of bilateral cooperation administered by the EU delegations to the EaP countries could be used in some cases, as well as specific projects (e.g. 'MOST' in Belarus).	EaP countries (policy level); EC
B16	<u>Transparent procedures and criteria for EaP NCP systems</u> The organizational set-up of the national NCP system should be based on a transparent call and clear list of requirements. Each of the NCP candidates should be informed in advance about the NCP tasks and financial conditions in order to avoid false expectations and to ensure a conscious decision. The size of the NCP system is an individual choice of a country, however in case of limited financial means concentrating the resources following the principle 'less is more' seems reasonable. In case of several NCPs nominated for one area, it is necessary to elaborate the guidelines for communication between them: how the NCP tasks will be distributed (e.g. geographically or by type of clients), how the information will be shared, who will represent the area at the NCP meetings (ideally, by rotation), etc. It is also important that all of them have equal access to information, trainings and finances and are backed up by the administration of their host organisations;	EaP countries (policy level)
B17	<u>Assessment and evaluation of NCPs</u> It is highly recommended that the NCP system for HE combines the most experienced and effectively working H2020 NCPs and enthusiastic newcomers. In that respect it is essential to implement an assessment of the H2020 NCPs for defining leaders who will make a nucleus of HE NCP network. For ensuring the quality of NCP services and compliance with the minimum standards, an evaluation of NCP performance should be implemented on regular basis.	EaP countries (policy level)

B18	<u>Timely nomination and funding of NCPs</u> The timely nomination of NCPs and availability of funds for travels are the preconditions for: <ul style="list-style-type: none"> o taking part in the annual EU NCP meetings; o participation of EaP NCPs in the trainings organized in the EU; o entering the NCP networking projects and taking part in trainings provided by them; o twinning with NCPs from EU member states, etc. 	EaP countries (policy level)
B19	<u>Improving the organisational set-up of NCPs</u> As soon as the basic financial support for NCPs is provided, it might be worth to improve the organizational set-up: the most efficient NCP networks in EU Member States have a centralized architecture which provides lots of benefits in terms of: internal networking, transferring experience and skills from more experienced to less experienced NCP staff, enriching the services, organizing promotional events, etc. Moving towards the professionalization of the NCP system often implies its centralization.	EaP countries (policy level)
B.6 Major barriers from the researchers' perspective		Targeted to
B20	<u>Information and training regarding Horizon Europe</u> An efficient national NCP network should organise regular information events and trainings in preparation towards the new HE Framework Programme, focusing in particular on: Overall structure of HE; sources of information; Legal and Financial issues, how to write a proposal, reporting, etc. They should address several focus groups (academic researchers, SMEs, young researchers, experienced researchers with exceptional research outcomes ("national stars"), etc.).	EaP countries (policy level)
B21	<u>Mobility support for researchers from EaP countries</u> Since there are limited resources and possibilities for researchers in EaP countries to get travel grants to attend H2020 networking events in EU countries the national authorities should introduce travel grant schemes (like the ones implemented under the EaP PLUS) to support participation of EaP researchers in brokerage events in EU countries and proposal preparatory meetings as integral part of the overall strategy to increase participation in HE.	EaP countries (policy level)
B22	<u>Promoting participation in EU partnership platforms</u> The National authorities in EaP countries should promote participation in various EU partnership platforms, like European Technology Platforms, Knowledge and Innovation Communities, COST Actions, etc., as a means of integration of EaP researchers, including the young ones, in the EU research networks for developing new partnerships and increasing visibility.	EaP countries (policy level)

B23	<u>Using bilateral cooperation as first steps for multilateral cooperation</u> Consider the bilateral cooperation between EaP and EU Member States and related instruments as a step towards multilateral cooperation in the Framework Programmes, by introducing the appropriate conditions in the terms of reference of the bilateral calls for R&D projects.	EaP countries and EU MS (policy level and funding organisations)
B24	<u>Improving framework conditions for participation in EU programmes</u> In some cases, participation of EaP research organizations in EU programmes is problematic due to inadequacy in procurement procedures, IPR, transfer of funds and research equipment. Removing such barriers could promote international cooperation and participation in EU programmes.	EaP countries (policy level)
B25	<u>Introducing incentives for participation in EU cooperation</u> Overall, the integration to the European Research Area (ERA) or a closer cooperation with EU is a strategic policy objective present in policy documents of EaP countries, especially those associated to H2020. However, in most cases concrete measures and mechanisms are still absent. Some EaP countries have introduced incentives (additional bonuses from national funds) for research institutes whose applications are mainlisted for funding or scored above the threshold (Moldova, Armenia). This practice should be further enhanced and continued for HE.	EaP countries (policy level)
B26	<u>Promoting the participation of EaP researchers in project evaluation</u> A wider promotion at all relevant levels of the possibility for EaP researchers to register as experts for evaluation of H2020 and HE proposals is necessary, as an excellent mean to gain experience on project preparation and writing.	EaP countries (policy level, funding organisations, HEIs, and RIs)

B.7 Recommendations towards participation in CO-FUND activities		Targeted to
B27	<p><u>Using ERA-NET Cofunds as support for national research</u></p> <p>National research funding agencies in EaP countries should more closely consider ERA-NET Cofunds as a way of supporting national research. Participation in ERA-NET Cofunds is a first step for joining research consortia applying for various H2020 and in the future Horizon-Europe calls and allows networking with leading research organizations in the EU and beyond.</p>	EaP countries (funding organisations)
B28	<p><u>Using upcoming calls for MSCA-COFUND</u></p> <p>There are still two calls under Horizon 2020 for MSCA-COFUND (closing in September 2019 and September 2020). Institutions funding the research and international exchange as well as higher education institutions should be aware about such an opportunity and be encouraged by NCPs and national ministries to apply to these calls.</p>	EaP countries (policy level, NCPs, funding organisations and HEIs)
B29	<p><u>Making use of existing experience for participation in MSCA-COFUND</u></p> <p>The experience of institutions which were successful in receiving MSCA-COFUND funding could be shared between EU and EaP countries in order to prepare EaP institutions for similar calls within the upcoming Horizon Europe programme. In parallel, guidelines and documents prepared within the Net4Mobility project could be used as a basis for educating EaP institutions about the MSCA-COFUND.</p>	EaP countries (policy level, NCPs, funding organisations and HEIs)
B30	<p><u>Providing training activities for EaP research funding agencies</u></p> <p>Training activities on working with various EU funding schemes should be organized for representatives from EaP research funding agencies. In particular, trainings or internships for young EaP specialists working in the field of international research cooperation could be organized in the EC units, allowing them to use the acquired knowledge while serving in their national R&D agencies.</p>	EC
B31	<p><u>Engaging in JPI activities</u></p> <p>Agencies from the EaP countries could initiate engagement in JPI activities as observers while their participation could be supported by national travel grants.</p>	EaP countries (policy level, funding organisations) EU MS

B.8 Recommendations towards need of support actions (“EaP PLUS type”)		Targeted to
B32	<u>Need for a support action</u> A support action from the EU side will be needed, in agreement with the European Neighbourhood Policy, in order to provide the necessary assistance to the EaP countries for a successful participation in Horizon-Europe and the ERA.	EC
B33	<u>Appropriate and sustainable design of support actions</u> For shaping such a support, the concepts of coherence and continuity should be taken into account: ad-hoc activities will not be able to provide the necessary support, especially when considering that despite the importance of the Association, too few persons at the level of authorities/ministries in the EaP countries are assigned to its promotion.	EC
B34	<u>Setup of an active and committed network</u> Connected to the aforementioned concepts (B32) is the need of an active network working closely with the national authorities and the research communities. Such in-situ and committed network is of paramount importance in order to convey information and expertise from the EU side and to stimulate the organization of events locally allowing to discuss common challenges and to share best practice examples. Such a role could eventually be taken by the NCPs network but for the time being, the frequent changes in the nominated NCPs, the (minor) share of the time they devote to that role and the lack of benefits or remuneration as NCPs, cannot guarantee an effective support toward the STI community and policymakers, when compared to a network setup in the context of a support action.	EC

C. IMPROVING THE EaP STI SYSTEMS	Targeted to
<p>C1 <u>Consolidating (or initiating) the reforms of the STI systems in the EaP countries</u></p> <p>The present report is reconfirming the conclusions and recommendations of the series of support activities implemented by the EU towards the EaP countries and acknowledges that several EaP countries, and in particular the ones associated to H2020, are already engaged at various degrees in reforming their STI systems to meet the standards of the ERA. The cooperation with the EU and its MS is instrumental in that process and there are further broad possibilities for extending this cooperation as it is described here below in that section.</p> <p>In that respect, the reforms of the STI systems in the EaP countries should further move forward, consolidating and accelerating the process in the countries already engaged in that, or initiating it in the other.</p> <p>In the latter case, and especially in the cooperation of the EU with AZ and BY, the instigation of a more structured policy dialogue in STI could be instrumental not only for improving the national STI systems but also for removing barriers that may exist in the cooperation with EU.</p>	<p>EaP countries (policy level); EC</p>
<p>C2 <u>Monitoring the implementation of the recommendations from Peer Reviews</u></p> <p>Since reforms recommended by Peer Reviews in most of the cases need lengthy processes involving several stakeholders for their implementation, it is important to monitor that process and to assess the progress made. This can consolidate the whole process, showing that ‘things are moving’ in a sound and well thought way.</p> <p>Such monitoring could be implemented in the future by any similar to RI-Links2UA project, or by the International Cooperation Service Facility, ENI projects, etc. Involving at least one international expert in such reviewing will increase the necessary independence from the local authorities.</p>	<p>EC; EaP countries (policy level)</p>
<p>C3 <u>Reporting and exchanging good practices at the ‘EaP Panel on R&I’ meetings</u></p> <p>Since improving the STI systems in the EaP countries constitutes a decisive step for an enhanced participation in the ERA, it is recommended to regularly report about the progress achieved at the annual Panel meetings or at dedicated to reforms annual Panel events. Such reporting will stimulate the exchange of good practices among the EaP countries, showing at the same time the impact and outcomes of the actions under the PSF.</p>	<p>EC; EaP countries (policy level)</p>

C4	<p><u>Follow-up reviews</u> Since the Peer Reviews constitute a relatively heavy and costly process that typically cannot be implemented in less than five years intervals, organizing mid-term follow-up reviews by small international panels and lesser effort, can provide to the national authorities a clear picture of the progress achieved and orientations on the prioritization for the future. Such follow-up reviews can build on the earlier mentioned monitoring (recommendation C2), providing coherence to the whole process for reforming the STI systems.</p>	EC;EaP countries (policy level)
C5	<p><u>New Peer Reviews</u> The EaP countries should continue launching Peer Reviews, repeating the process in AM, GE, MD, and UA at approx. five years intervals, and initiating the process in AZ and BY. The cooperation with the EU can be instrumental in that process, by providing funds for such reviews (through the PSF for the associated countries or through the ENI for AZ and BY), as well as by providing qualified peers and experts for their implementation.</p>	EaP countries (policy level); EC
C6	<p><u>Knowledge transfer and training in STI policy making</u> Improving the STI systems and accelerating the reforms necessitates in addition to the aforementioned recommendations, well trained staff in state-of-the-art policy making and policy delivery. Here again, the EU-EaP STI cooperation can play a decisive role in knowledge transfer through:</p> <ul style="list-style-type: none"> • Staff exchange schemes between EU MS and EaP countries; • Training activities in the EaP countries that could be supported by the European Neighbourhood Instrument or the Service Facility in Support of the Strategic Development of International Cooperation in Research and Innovation; • Participation of the associated countries in mutual learning exercises organized in the EU; • Provision of assistance to implement the reforms by appointing EU experts in the EaP STI authorities, funded by the ENI or the Service Facility. 	EaP countries (policy level); EC

D. INNOVATION		
D.1 Strategic framework for innovation		Targeted to
D1	<u>Providing strategic foundation for innovation</u> Whilst progress in the development of a strategic framework for innovation in some countries is acknowledged, it is recommended that strategic policy objectives should be developed in all countries. At the same time, specific attention should be paid in the strategic foundation for innovation activities that might help to facilitate coherent operation of all authorities and other stakeholders involved. Action plans should help to translate strategic orientation into concrete action.	EaP countries (policy level)
D2	<u>Coherent performance of decision-making</u> Closely linked with the issue of strategic guidance is the need to better coordinate authorities and governmental actors. Thus, it is recommended that key stakeholders like ministries and agencies are enabled to act according to their roles. Coordination between and complementarity amongst these actors should be assured. Confusing decision-making on the strategic, operational and executive levels should be avoided.	EaP countries (policy level)
D3	<u>Need for effective knowledge transfer</u> A prominent policy recommendation of recent peer reviews and fact-finding activities concerns the need of assuring effective knowledge transfer. Thus, science-business links should be substantially endorsed, amongst others through establishing brokerage networks and adequate measures for the protection and management of Intellectual Property Rights. In this way, and also through adequate incentives, actors from business and especially SMEs should be induced to collaborate with the public research sector.	EaP countries (policy level)
D4	<u>Enhancing collaboration of research and business</u> Supporting mobility between research and business, as well as funding for innovation actors is another topic that has been put forward in the mentioned reports. In an economically difficult field of operation, the development of business activities is nevertheless partly dynamic in some cases (e.g. in Georgia). However, this dynamic is hardly based on research and development, and there is only low cooperation between the research and business sectors. In this situation, supporting collaboration of researchers with entrepreneurial actors is recommended.	EaP countries (policy level)

D.2 Moving forward with EU4Innovation		Targeted to
D5	<p><u>Allowing bottom-up input for EU4Innovation activities</u></p> <p>EU4Innovation is mainly an internal coordination initiative at the Commission level, with DG R&I and DG NEAR having their own procedures and tools. When considering that, setting up a certain procedure allowing bottom-up suggestions for actions that could fit under the EU4Innovation umbrella could be beneficial.</p>	EC
D6	<p><u>Applying S3 in regional development</u></p> <p>Any reform process in the R&I sector should be accompanied by a reflection on S3 as a new approach on the crossroads between policy-making in R&I and regional development. As a consequence, S3 could be more integrated in the strategic long-term plans for developing national R&I capacities as well as into the “toolbox” for regional development actions. Only if the concept of S3 and the design of S3 adapted to the local circumstances of a chosen region are consequently reflected in both in R&I and regional development policy-making, substantial changes benefitting the development of regions within the Eastern Partnership can be initiated.</p>	EaP countries (policy level)
D7	<p><u>The importance of decentralised decision-making</u></p> <p>S3 are inevitably linked to a decentralised approach in the organisation of national policy-making. In other words, the successful implementation of smart specialisation as a means for regional development and against the background of an entrepreneurial spirit also applied to the local and national R&I sector, is strongly dependent on a “right” form of governmental system. As the stakeholders in the “S3 journey” are chiefly acting at the local level, the set-up of the decision-making must be able to reflect this. Power to take certain decisions must be given to the local level, in order to allow all regional stakeholders involved to make contributions according to the stakes they possess in the overall process. Therefore, S3 is powerful door-opener to long-overdue reform processes in the national governance systems of the EaP countries, since the concept is firmly anchored within decentralisation principles.</p>	EaP countries (policy level)

D.4 Promoting Clusters in EaP		Targeted to
D8	<p><u>Raise awareness amongst policymakers in the EaP countries on why cluster organisations are beneficial and needed</u></p> <p>It is recommended to raise awareness of policymakers in the EaP countries on the economic and social benefits that cluster organisations can bring and showcase successful cluster policies implemented in EU countries. It shall be explained why state support is needed, and how such investment will generate value for the government in the long-run.</p>	EaP R&I stakeholders
D9	<p><u>Encourage the exchange of good practices in terms of cluster policies and cluster development programmes between policymakers and governmental institutions from EaP countries and the EU Member States</u></p> <p>In line with the recommendation D8, it is strongly recommended for EaP R&I stakeholders to boost policymakers in their countries to engage in exchanges of good practices with EU policymakers and governmental institutions, to benefit from the EU Members states' existing experience in terms of building and implementing cluster policy programmes intended to encourage the development and excellence of clusters.</p>	EaP R&I stakeholders; EU MS R&I stakeholders
D11	<p><u>Increase visibility of EaP clusters at international and national levels</u></p> <p>EaP clusters should ensure that they are visible especially at international level. In that respect, registration to the European Cluster Collaboration Platform (ECCP) should be aimed as a first priority, complemented by registration to a national platform (if there is one) and by creating dedicated websites.</p>	EaP clusters
D12	<p><u>Harmonizing eligibility criteria for EaP clusters in EU funding</u></p> <p>It is recommended to EU policymakers to consider harmonising and clarifying the eligibility criteria for EaP countries to participate in various types of EU cluster related events, programmes, platforms and initiatives supported by EC DG's related to industry and innovation support.</p>	EC
D13	<p><u>Focus on cluster development in bilateral cooperation with EaP countries</u></p> <p>It is recommended to consider including support for EaP countries regarding cluster development in the European Commission's bilateral cooperation activities with EaP countries, as well as in the EU Member States' bilateral cooperation programmes and activities.</p>	EC; EaP R&I stakeholders

D.5 Innovation support through the Enterprise Europe Network (EEN)		Targeted to
D14	<p><u>Raising awareness towards EEN in EaP</u></p> <p>The EEN could contribute to improvement of innovation capacities of companies in EaP countries supporting engineering and innovation management, as well as quality improvement and implementing various EU standards and industry-specific international standards. To better exploit these opportunities, the network should be better promoted; national authorities should provide sufficient support for the network; wider information and awareness campaigns could be developed, with the support of entrepreneurial associations and other stakeholders, to ensure that potential beneficiaries are aware of the possible forms of support and how to access them.</p>	EaP R&I stakeholders
D15	<p><u>Strengthen cooperation between NCPs and EEN</u></p> <p>All NCPs are encouraged to establish mutually supporting relationships with EEN in their country, in accordance with the national arrangements. In particular, NCP support for SMEs (including SME Instrument) should be performed in liaison with EEN, according to the national situation. This includes provisions for a one-stop-shop service for SMEs, particularly newcomers, directing potential applicants to the most appropriate service.</p>	EaP R&I stakeholders

ANNEX II – Eastern Partnership policy

Policy issues

Evolution of the EaP

The year 2019 is an exciting year for everyone engaged in the EU's Eastern Partnership (EaP). Founded 2009 as a joint policy initiative, the Eastern Partnership is a policy framework harmonising and deepening the EU's cooperation activities with its six Eastern neighbours Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. The current EaP is structured around four priorities and one cross-cutting area as defined in the key strategy document "20 deliverables for 2020: Bringing tangible results for citizens".⁴⁶ The four priorities (stronger economy, stronger governance, stronger connectivity and stronger society) are deeply rooted within the strongest needs as expressed by the six partner countries. The cross-cutting area includes a dimension on civil society, gender and independence of media.⁴⁷ These overarching objectives pursued for the whole region are complemented by bilateral association and deep and comprehensive free trade area agreements between the EU and individual partner countries. The current status of concluded agreements can be found on the website of the European Council/Council of the EU.⁴⁸

This year the EU-EaP cooperation celebrates its 10th anniversary and this provides a certain impetus for reflection on both the past achievements and the future objectives.

Creation of the ENP – European Neighbourhood Policy

In order to sketch the possible directions of the EaP for the upcoming decade, it is necessary to understand where it comes from and how it has developed until now. In 2004, the European Commission (EC) launched the so called ENP – European Neighbourhood Policy as a way to structure the relations with 16 of its Eastern and Southern neighbouring countries. From the very beginning, the ENP was coined by two overarching goals, namely to achieve the closest possible political association of these countries towards the EU and create some form of deep economic integration between the EU Member States (Member States) and the region. Based on two major reviews of the strategy in 2011 (following the so called 'Arab spring') and in 2015, with time, the aims of the ENP became more manifold. But also the "ownership" of the ENP has changed over time, moving from a rather centralistic EU approach (policy-making process chiefly within the Brussels environment) towards more accountability and a shared responsibility between all the stakeholders involved in the policy-making and policy-implementation process in both regions.

The ENP, as an umbrella policy framework for the EU's relations with its Eastern and Southern Neighbours is complemented by two regional policy strategies designed for each of

⁴⁶ The outline of the policy document can be found here:

https://eeas.europa.eu/sites/eeas/files/20_deliverables_for_2020.pdf (12.04.2019)

⁴⁷ <https://www.euneighbours.eu/en/east/eu-in-action> (accessed 05.03.2019)

⁴⁸ <https://www.consilium.europa.eu/en/policies/eastern-partnership/> (12.04.2019)

the regions specifically. As mentioned, the Eastern Partnership for the Eastern Partner countries since 2009 and the Union for the Mediterranean for the neighbouring countries in the south since 2008.

Key milestones of the EaP

Since its creation 2009, the EaP has experienced both dramatic backlashes as well as considerable achievements. Amongst the publicly most recited failures in the advancement of the EaP there was the EU-EaP high-level summit in Vilnius in November 2013, when Ukraine's then President Viktor Yanukovich refused to sign the long negotiated and eventually successfully prepared Association Agreement between his country and the EU. As a consequence, the Euromaidan revolution sparked in February 2014, which led to a civil war in Eastern Ukraine and the occupation of the Crimea peninsula by Russia.

Conversely, one of the most important milestones bringing the EaP forward was the EU-EaP summit in November 2017, when the "20 deliverables for 2020" were re-endorsed by the leaders from the EU and the EaP countries, following an intensive revision. The 20 deliverables for 2020 are an attempt to organise the EaP policy in a more tailor-made way, allowing the EU to define its cooperation priorities with each of the six partner countries individually and along those areas which were selected as most important in the respective relation to each country. The earlier mentioned priority areas (and the 20 deliverables grouped around them) are a direct result of the 2017 summit.

Among the '20 deliverables' there is one (the 20th) dedicated to the "Integration of the Eastern Partnership and EU research and innovation systems and programmes". Along this goal a major tangible achievement is the association to the EU's Framework Programme for Research and Innovation Horizon 2020 of four out of the six EaP countries (Armenia, Georgia, Moldova, Ukraine).

The 20 deliverables for 2020 constitute the main guidelines according to which the EaP policy is still implemented until the next year. As there is only little time left until the end of the existing timeframe, it is time now to draw conclusions about the impact achieved and the issues still open in order to feed them into a new strategic framework for the post-2020 period.

The EaP beyond 2020 – a possible new era of cooperation?

Until now, the EU's key actors involved in drafting the EaP initiative for the period beyond 2020 have been rather reserved in announcing any new approach or declaring whether the implementation of the 20 deliverables will just continue. It can be assumed though that the European Commission, i.e. the European Union External action services (EEAS) and DG NEAR (Directorate General for Neighbourhood and Enlargement Negotiations) as the EU's key actors dealing with the EaP have already started reviewing the Eastern Partnership and considering future goals and actions.

This report aims to contribute to this open issue and to provide input on the ways to further stimulate the ‘Integration of the Eastern Partnership and EU research and innovation systems and programmes’, i.e. the 20th Deliverable for 2020, beyond the 2020 timeline. It is based on the lessons learnt within the EaP PLUS project which was dedicated to supporting the EaP countries from 2016 to 2019 in their efforts to participate in Horizon 2020 and in the ERA in the broader sense.

ANNEX III – Statistics on EaP participation in Horizon 2020

Source: Horizon 2020 eCORDA data bases v.13.2 after 702 concluded calls
(extraction date: 05.06.2019)

Table 1: Participation of EaP countries in FP7 and Horizon 2020 (number of retained projects, number of participating entities and funding)

EaP Country	No of projects in FP7	No of participations in FP7	Funding received in FP7 M€	No of projects in H2020 (05.06.2019)	No of participations in H2020 (05.06.2019)	Funding received in H2020 M€
Armenia	36	42	3,11	30	37	2,7
Azerbaijan	21	25	1,5	9	10	0,5
Belarus	43	55	3,9	44	48	2,3
Georgia	49	62	4,9	35	41	3,5
Moldova	45	57	4,0	50	63	5,9
Ukraine	160	219	24,1	159	218	26,2
Total		460	41,5		417	40,9

Source: FP7 Dashboard⁴⁹ and Horizon 2020 eCORDA (extraction date: 05.06.2019). In Bold: above FP7

Table 2: Number of Horizon 2020 projects with at least 1 participant from the country

Armenia	Azerbaijan	Belarus	Georgia	Moldova	Ukraine
30	9	44	35	50	159

Source: Horizon 2020 eCORDA (extraction date: 05.06.2019)

Table 3: Success rate of the EaP applications for the Horizon 2020 funding

Country	Number of participations in proposals	Number of participations in projects (GA)	Success Rate %
Armenia	216	37	17,1%
Azerbaijan	64	10	15,6%
Belarus	298	48	16,1%
Georgia	333	41	12,3%
Moldova	416	63	15,1%
Ukraine	1864	218	11,7%
TOTAL	3191	417	
		Average Success Rate:	14,67%

Source: Horizon 2020 eCORDA (extraction date: 05.06.2019)

⁴⁹ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard>

Table 4: Gained EC contribution for the EaP participants in the Horizon 2020

COUNTRY	Requested financing, M€	Gained EC contribution, M€	Success Rate
Armenia	56,2	2,7	4,7%
Azerbaijan	6,9	0,5	7,0%
Belarus*	55,0	2,3	4,1%
Georgia	100,1	3,5	3,5%
Moldova	92,6	5,9	6,3%
Ukraine	538,1	26,2	4,9%
		Average Success Rate	5,1%
	Total Gained EC contribution, M€	40, 9	

Source: Horizon 2020 eCORDA (extraction date: 05.06.2019)

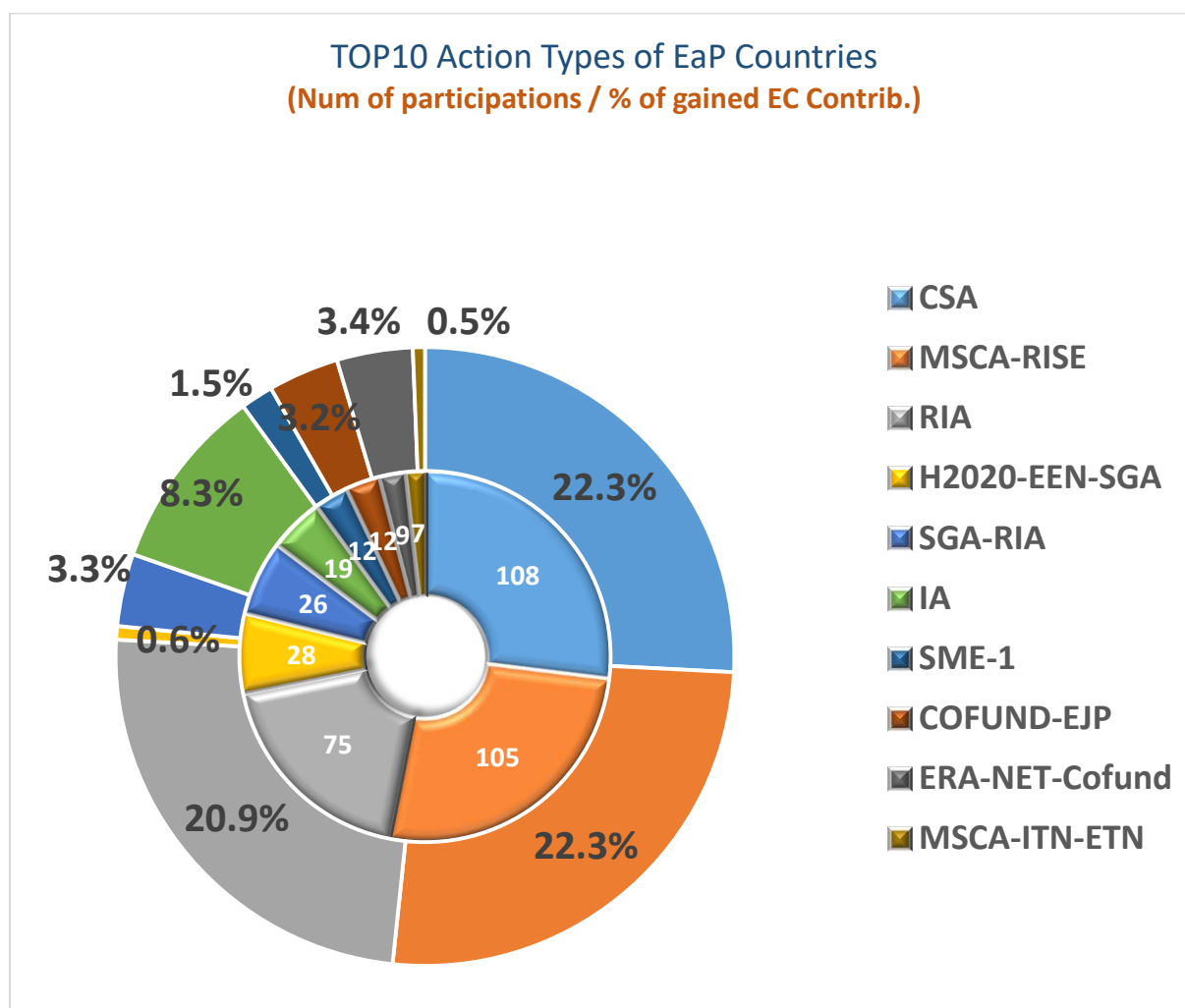
**Note: Since in the RISE scheme the budget foreseen for partners in Third countries that are not formal beneficiaries is hidden in the budget of the partners from EU Member States /AC, the figures for EC contribution to Belarus in reality are higher.*

Table 5: EaP countries participation in the Horizon 2020 by action type

Action Type	Number of Participations	% in terms of EC NET CONTRIBUTION
CSA	108	22,28%
MSCA-RISE	105	22,33%
RIA	75	20,89%
H2020-EEN-SGA	28	0,61%
SGA-RIA	26	3,27%
IA	19	8,32%
SME-1	12	1,47%
COFUND-EJP	12	3,20%
ERA-NET-Cofund	9	3,42%
MSCA-ITN-ETN	7	0,54%
JTI-CS2-RIA	6	6,59%
MSCA-COFUND-DP	2	0,00%
SME-2	2	5,42%
MSCA-ITN-EID	2	1,18%
MSCA-ITN-EJD	1	0,00%
JTI-FCH2-CSA	1	0,13%
MSCA-IF-EF-ST	1	0,34%
MSCA-IF-GF	1	0,00%
Total	417	100%

Source: Horizon 2020 eCORDA (extraction date: 05.06.2019)

Figure A: EaP countries participation in the Horizon 2020 by action type



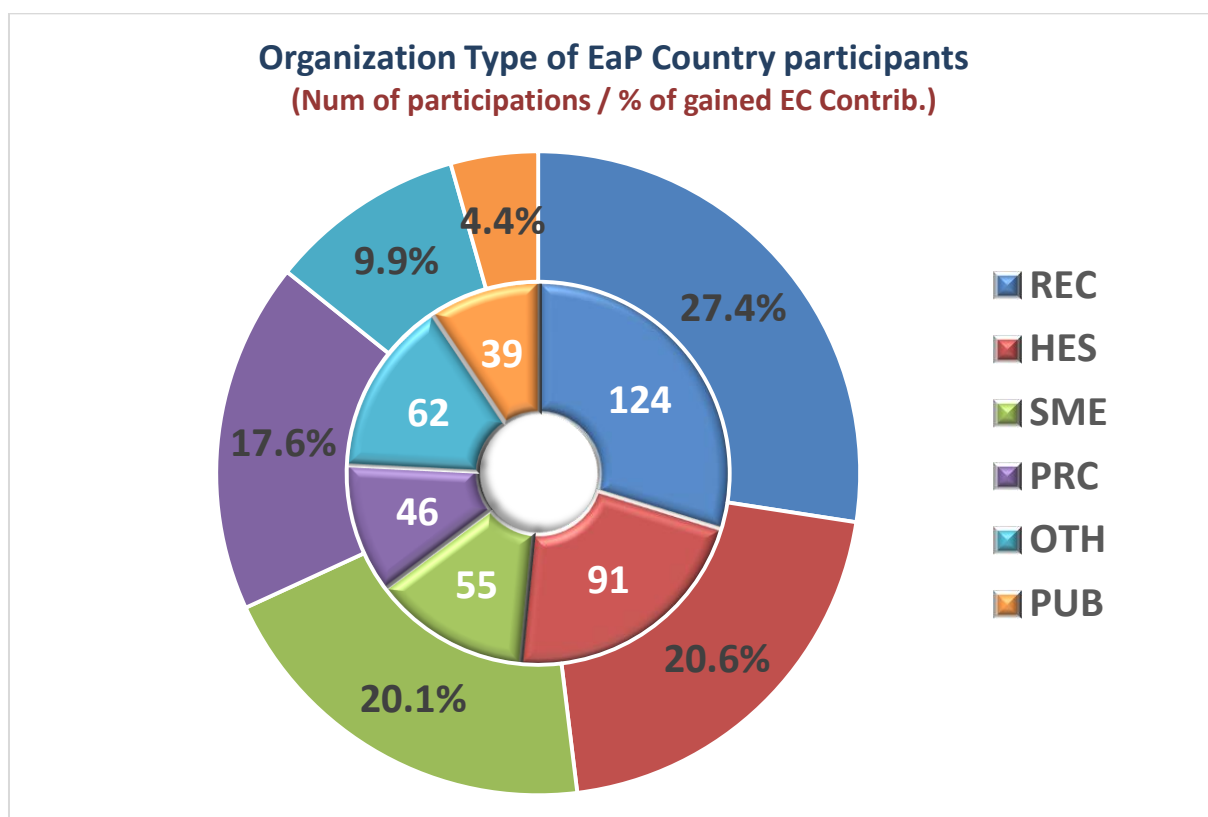
Source: Horizon 2020 eCORDA (extraction date: 05.06.2019)

Table 6: Institutions from EaP countries participating in Horizon 2020

Organization Type	Num of Participations	% of granted EC contribution
REC	124	27%
HES	91	21%
SME	55	20%
PRC	46	18%
OTH	62	10%
PUB	39	4%
Total	417	100%

Source: Horizon 2020 eCORDA (extraction date: 05.06.2019)

Figure B: Institutions from EaP countries participating in Horizon 2020 by organization type



Source: Horizon 2020 eCORDA (extraction date: 05.06.2019)