



Roadmap for EU – Enlargement Countries S&T cooperation

1. ENLARGEMENT COUNTRIES as partners of the EU

The EU's enlargement policy deals with the countries currently aspiring to become members of the European Union. There are strict conditions for membership to ensure that new members are admitted only when they are fully able to take on the obligations of EU membership. This includes compliance with all the EU's standards and rules. For the purpose of accession negotiations, these are divided into 35 different policy fields (chapters). Chapter 25 deals with Science and Research policy aspects covering Horizon 2020, the European Research Area and Innovation policies. Accession negotiations with Montenegro on the acquis on science, research and innovation (Chapter 25) were opened and provisionally closed in December 2012; accession negotiations with Serbia on Chapter 25 were opened in January 2014 and provisionally closed in December 2016. Accession negotiations with Turkey started in 2005. Chapter 25 on "Science and Research" has been provisionally closed in 2006. Exploratory talks to explain the Acquis with Albania and North Macedonia are being prepared.

Good neighbourly relations and regional cooperation are essential elements of the Enlargement Process, as well as of the Stabilisation and Association Process, and contribute to prosperity, stability, reconciliation and a climate conducive to addressing open bilateral issues and the legacies of the past. In general, continued efforts are needed to tackle outstanding bilateral disputes, including border disputes, in order to ensure that they do not have a detrimental effect on the accession process.

EU-ENLARGEMENT – Research and Innovation Dimension

The integration of the Western Balkan Countries (WBCs) into the European Union (EU) is a major political and economic project designed to assure stability and development in the region. From the very beginning, cooperation on research and innovation has been stimulated as a tool to facilitate integration into the European Union. The Council meeting in June 1993 endorsed an Action Plan in Science and Technology aiming at contributing to the reinforcement of the S&T capacities of each country and of the region as a whole. To raise the EU's political commitment towards the Balkans, a Steering Platform on Research was launched in June 2006 by the European Commission together with the Austrian Presidency of the European Union and the Ministers from the region. The Platform brings stakeholders from the Balkan Region and international donors aiming at creating more synergy between the many actions and instruments in support of re-building the research and innovation capacity in the region. In 2018 the European Commission presented a strategy for 'A credible enlargement perspective for and enhanced EU engagement with the Western Balkans'. Six flagship initiatives are being launched. These are specific actions that the EU will take over the next years to support the transformation efforts of the Western Balkans in areas of mutual interest.

EU-ENLARGEMENT - non-S&T cooperation agreements

Since 2015, all candidate countries and potential candidates (i.e. Montenegro, Serbia, North Macedonia, Albania, Bosnia and Herzegovina, Kosovo*¹, and Turkey) submit annual Economic Reform Programmes (ERP) to the European Commission. The ERPs contain medium-term macroeconomic projections (including for GDP growth, inflation, trade balance and capital flows), budgetary plans for the next three years and a structural reform agenda. The structural reform agenda includes reforms to boost competitiveness and improve conditions for inclusive growth and job creation in the following areas:

- Public finance management
- Energy, transport and telecommunications markets
- Sectoral development
- Business environment and reduction of the informal economy
- Research and innovation
- External trade and investment facilitation
- Education and skills
- Employment and labour markets
- Social inclusion, poverty reduction and equal opportunities

The work on ERPs is of varying detail concerning research and innovation. Specific measures are being undertaken to improve the quality of the ERPs, and to share best practices from the experience gained. Several efforts are ongoing to establish national ERA Action Plans and Smart Specialisation Strategies. Many of the countries are in the process of designing or updating a national strategy on research, science and innovation. At the same time, all enlargement countries have, in the context of the Economic Reform Programme (ERP) process which was started with them to prepare for the European Semester exercise, recognised that research and innovation are drivers of economic reform and competitiveness.

R&I landscape in ENLARGEMENT COUNTRIES

The R&I landscape in the region is very heterogeneous. In all these countries, the level of public and private sector investment in research, development and innovation (RDI) is low, below the level needed to enable the economies to move up the ladder of the value chains. Turkey and Serbia are the most advanced in the region with Albania on the other end of the scale. Spending on research and development in Turkey has been increasing but is still rather low and the cooperation between research institutions and economic operators is often weak, hampering innovation and productivity. All countries are far behind the EU objective to devote 3% of its GDP to R&D activities and they have also not yet reached their national objectives. In the future, higher investments in R&D activities – in the case of the WBC especially from private entities – in alignment with reforms towards more open and competitive research systems - will be necessary.

Table 1: Enlargement Countries – Overall R&D Landscape

Country	Population ¹	GDP ² (per capita)	GERD ³ (as % of GDP)	R&D personnel per million habitants ⁴ (researchers per million habitants)
Albania	2.93	13.0 (4,537)	39.8 (0.40%)	262 (157)
Bosnia & Herzegovina	3.84	18.2 (5,180)	93.7 (0.22%)	600 (404)
North Macedonia	2.07	11.3 (5,442)	134.3 (0.43%)	1012 (854)
Kosovo*	1.79	- (-)	- (0.10%)	- (-)
Montenegro	0.62	4.8 (7,669)	38.0 (0.37 %)	1071 (833)
Serbia	7.04	41.4 (5,900)	925.5 (0.89%)	3,069 (2,132)
Turkey	79.81	851.1 (10,540)	16,604.5 (0.88%)	1,562 (1,216)

¹ In millions; values for 2017: Albania, North Macedonia, Montenegro, Serbia, Turkey; 2012: Bosnia & Herzegovina, Kosovo*

² GDP in billion current \$; values for 2017. GDP per capita in current \$, values for 2017.

³ In million current PPP \$. Values for 2016: Bosnia & Herzegovina, North Macedonia, Serbia; 2015 for Montenegro, Turkey; 2008: Albania.

⁴ In FTE. Values for 2016: Bosnia & Herzegovina, North Macedonia, Serbia; 2015 for Montenegro, Turkey, 2008: Albania

Source: DG Research and Innovation - International Cooperation

Data: Eurostat, UNESCO Institute for Statistics, OECD. Extraction date: 19/10/2018

Assessing the region is often challenging due to the lack of up-to-date or accurate data. In addition to the very low national research budgets, the allocation of funding lacks also competitiveness (ERA priority 1) and strategies setting clear sectoral priorities in which to concentrate efforts on research and contribute to Europe's scientific excellence and critical mass to address the societal challenges (ERA priority 2). Montenegro and North Macedonia are doing quite well in terms of citation impact and international collaboration. However, this data is not weighted by the size of the countries – there appears to be skewedness towards smaller countries concerning impact and international collaboration. Access to national and international research infrastructures in line with the ESFRI Roadmap is gaining importance. The human capital building is also weak and effective compliance with the Charter and Code of Conduct for recruitment principles is very low. On gender equality all countries are close to gender parity but lack gender equality plans. Women are still underrepresented in the management functions.

On the principles of open science and access to data, the WBCs just started embracing the principles. Turkey is quite advanced and most universities apply the principles of open access to data. Further efforts are necessary for the Western Balkan countries on Open Science skills such as data management and re-use and open collaboration on PhD training.

Table 2: Enlargement Countries – Scientific Publications

Country ¹	Citation Impact ² (world average = 1)	International Collaboration ³	Scholarly Output ⁴ (world total = 8,458,603)
Albania	0.48	41.6%	1509
Bosnia & Herzegovina	0.78	52.0%	2549
North Macedonia	1.08	45.5%	2655
Montenegro	1.17	58.1%	1088
Serbia	0.98	38.0%	22390
Turkey	0.80	19.4%	123557
EU28	1.25	35.9%	2609780

¹No data for Kosovo*.

²Citation Impact is the actual citation count relative to the world citation count. For example, Citation Impact = 0.91 means that the publication output is 9% less cited than expected according to the global average. Citation Impact = 1.16 means that the publication output is 16% more cited than expected according to the global average.

³The number of international co-publications divided by the total number of publications. International co-publication is a publication that has at least one author affiliated to an institution outside the country.

⁴Scholarly Output includes articles, reviews, conference papers, editorials and surveys.

Source: DG Research and Innovation - International Cooperation

Data: SCOPUS/Scival. Publications' window: 2013-2015. Data extraction date: 19/10/2018.

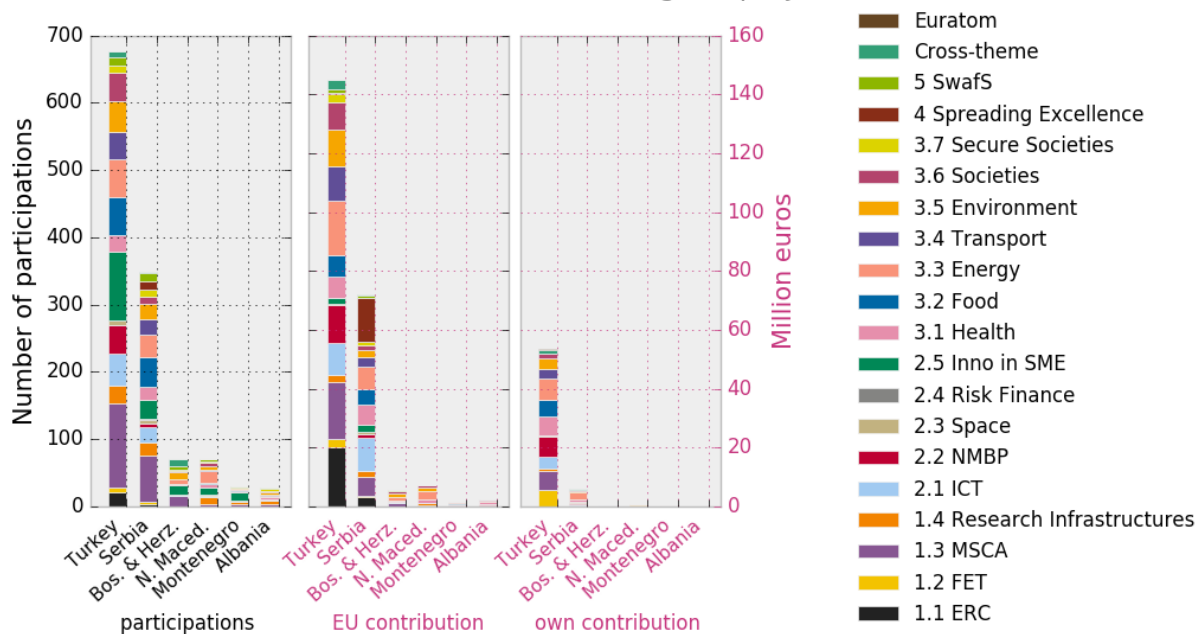
In terms of innovation and industry academia cooperation, the West Balkan region does not appear to have developed a lot over the last couple of years. Since the European Innovation Scoreboard 2016 Turkey has risen from the bottom category (modest innovator) to the 3rd category "moderate innovator" (like Serbia). To achieve this, Turkey has made progress on practically all indicators. The Republic of North Macedonia is a modest Innovator. All other Western Balkan countries struggle to collect the necessary statistical data to participate in the European Innovation Scoreboard.

2. State of play of EU-ENLARGEMENT COUNTRIES S&T cooperation

2.1. On-going FP7 and Horizon 2020 cooperation

All 'Enlargement countries' except Kosovo*¹ were associated to FP7 and renewed association to Horizon 2020. Still there remains a big need to enhance the R&I capacity at national level. The Instrument for Pre-accession Assistance (IPA) is the means by which the EU supports reforms in the 'enlargement countries' with financial and technical help. Research and Innovation capacity building is one of the measures carried out under IPA.

Figure 1: Participation of the Enlargement countries in Horizon 2020
countries: Participations, EU contribution & own contribution of most active countries in signed projects of H2020



Note: Participations of beneficiaries, third-parties and partner-organisations.
Source: DG Research and Innovation - International Cooperation
Data: CORDA (JRC, EIT and art.185 not included); extraction date: 25/02/2019

2.2. Current framework conditions for EU-ENLARGEMENT COUNTRIES S&T cooperation

In line with the Strategy on International Cooperation "enhancing and focusing EU international cooperation in research and innovation", cooperation with the EU 'enlargement countries' has focussed on facilitating the integration into the European Research and Innovation Area, inter alia, through association to the EU Research and Innovation Framework Programme 'Horizon 2020'. A substantial part of the cooperation with the Enlargement countries consists in assisting them in preparing for compliance with the EU acquis on science, research and innovation. Having a good research and innovation capacity at national level and good framework conditions will in turn increase their successful participation in Horizon 2020. The enlargement countries, except Kosovo*¹, have signed association agreements to the Horizon 2020 programme and contribute financially to the program.

Integration in ERA and Association to Research and Innovation Framework Programmes

Association to Framework Programmes of the EU is the deepest form of cooperation and offers the same research and innovation opportunities as for Member States. Through their association, the enlargement countries are also invited to nominate observers in the different Horizon 2020 programme committees allowing them to become familiar with the EU decision-making and values. Given the strong correlation between cooperation under the framework programme and a good research and innovation capacity, representatives of the associated enlargement countries are also invited to nominate observer delegates in the policy bodies and notably in the European Research Area Committee (ERAC), the ERAC Standing Working Group on Human Resources and Mobility; the Strategic Forum on International cooperation (SFIC) and in the European Strategy Forum on Research Infrastructures (ESFRI). All this has to be seen in the pre-accession context aiming at preparing this group of countries to take up effectively the EU Acquis by the time they become a Member State. In addition, preparations for complying with the acquis on research and innovation (Chapter 25), takes place in close cooperation with the DG NEAR (Directorate-General on European Neighbourhood Policy & Enlargement Negotiations).

Progress is being monitored on a regular basis with all enlargement countries. This allows also creating synergies with the funding under the Pre-Accession Instrument (IPA-II) as indicated in the International Strategy and in the Global Strategy for the European Union. On the regional level, a Western Balkans Regional R&D Strategy for Innovation (with support from IPA), has been adopted in Zagreb in October 2013 to encourage regional integration in a number of key areas. Under the EU Macro-Regional Strategies with respectively the Danube countries and the Adriatic countries, cooperation on research and innovation in a number of specific areas, has also been included as a way to foster socio-economic relations and create growth and jobs.

The Regional Cooperation Council (RCC) was officially launched at the meeting of the Ministers of Foreign Affairs of the South-East European Cooperation Process (SEECP) in Sofia, 2008. Through a regionally owned and led framework, the RCC focuses on promotion and enhancement of regional cooperation in South East Europe and supports European integration. The RCC provides operational capacities to and works under the political guidance of the SEECP. The main tasks of the RCC are to represent the region, assist the SEECP, monitor regional activities, exert leadership in regional cooperation, provide a regional perspective in donor assistance – notably the EU's Instrument for Pre-accession Assistance (IPA) programme – and support increased involvement of civil society in regional activities. The RCC functions as a focal point for regional cooperation in SEE and its key role is to generate and coordinate developmental projects of a wider, regional character, to the benefit of each individual participant, and create an appropriate political climate susceptible to their implementation.

Industry – Academia Cooperation

With job creation stagnant and economic growth stalled, the Western Balkans region faced an intensifying need to create knowledge-based economies that can generate higher-value-added jobs and stronger growth. Economic governance has become one of the three fundamental pillars in the enlargement process over the past years, mirroring moves in the EU to strengthen economic policy monitoring and multilateral surveillance under the European Semester. Economic growth prospects of the Western Balkans are improving mainly as a

result of strengthening domestic demand. The economic reform programmes expect a further steady acceleration of growth in the medium term. Increasing FDI is projected to support investment across the region. This reflects efforts to improve the business climate. The use of outdated technologies lowers the productivity of the sector in the whole region.

Fostering synergies among their similar interventions and building on a growing collaboration, governments from the economies in the Western Balkans have developed — with the assistance of the European Commission, the Regional Cooperation Council and the World Bank — a regional strategy for research and innovation. Its objective is to increase the impact of research and innovation on economic growth and employment opportunities. The strategy combines the advocacy of policy reforms at national level and joint investments in selected regional initiatives. These joint investments finance regional programs and institutions, pooling regional resources to create a critical mass for promoting smart specialization in the Western Balkans. For example, the countries could benefit from focusing on research areas of common interest with partners from the Danube and Adriatic-Ionian EU macro-regions also actively preparing Smart Specialisation Strategies. On the latter, expertise of the EC and in particular of the JRC in designing and implementing Smart Specialisation Strategies contributes to a better governance and coordination of the R&I activities and in turn to a better participation in the EU research programmes.

Research and Innovation capacity building has been identified across the region as one of the key elements that need to be urgently addressed. Efforts like establishing a catalogue of research capacities and expertise available will help towards an increased R&I efficiency. The ongoing development of Smart Specialisation Strategies (S3s) underpins national research and innovation strategies and policies. These S3s will help to prioritise national research efforts and to allocate the resources needed. They will also help to identify regional centres of excellence as cross-regional initiatives promoting science and innovation.