



# 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 were opened in January 2014. Accession negotiations with Turkey started in 2005. Chapter 25 on "Science and Research" has been provisionally closed in 2006. Initial investigations prior to accession negotiations with Bosnia and Herzegovina 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.

### *Latest EU-ENLARGEMENT Summit*

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 S&T capacity in

the region. All WBCs, except Kosovo\*<sup>1</sup>, are associated to Horizon 2020. Legal entities established in Kosovo\*<sup>1</sup> are eligible to receive funding in Horizon 2020.

Turkey's involvement with European integration dates back to 1959 and includes the Ankara Association Agreement (1963) for the progressive establishment of a Customs Union (ultimately set up in 1995).

There are positive developments in South Eastern Europe and the Western Balkans in regional cooperation; in particular there is progress on connectivity within the region and with the EU. Continuous efforts are needed to avoid any source of friction or actions that could damage good neighbourly relations and the peaceful settlement of disputes, including the protection of all minorities, ensuring equal rights for all citizens, and addressing the issues of missing persons and refugee return.

#### *EU-ENLARGEMENT non-S&T cooperation agreements*

As of 2015, all candidate countries and potential candidates (i.e. Montenegro, Serbia, former Yugoslav Republic of Macedonia, Albania, Bosnia and Herzegovina, Kosovo\*<sup>1</sup>, and Turkey) submit annual Economic Reform Programmes (ERP) to the European Commission. They are an expanded version of the previous Pre-Accession Economic Programmes for candidate countries. 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 initial 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 in the European Semester. Several efforts are ongoing to establish national ERA Action Plans. Many of the countries are in the process of designing or updating a national strategy on research, science and or innovation but several miss a clear vision and the means to stimulate cooperation between Academia and Industry. At the same time, all enlargement countries have, in the context of the Economic Reform Programme (ERP) process

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<sup>1</sup> This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ opinion on the Kosovo declaration of independence.

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. Turkey and Serbia are the most advanced in the region with Albania on the other end of the scale. 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.

However, assessing the region is difficult due to the lack of up-to-date or accurate data.

Table 1a: Enlargement Countries – Overall R&D Landscape

Country	Population <sup>1</sup>	GDP <sup>2</sup> (per capita)	GERD <sup>3</sup> (as % of GDP)	R&D personnel per million habitants <sup>4</sup> (researchers per million habitants)
Albania	2.89	12.7 (4,000)	39.8 (0.40%)	262 (157)
Bosnia & Herzegovina	3.84	17.5 (4,556)	119.5 (0.33%)	366 (217)
FYRoM	2.07	9.6 (4,565)	114.0 (0.44%)	754 (676)
Kosovo*	1.79	()	(0.10%)	()
Montenegro	0.62	4.4 (7,041)	33.2 (0.36 %)	847 (647)
Serbia	7.11	37.5 (5,190)	678.0 (0.77%)	2,030 (1,381)
Turkey	77.70	789.3 (10,666)	13,315.1 (0.96%)	1,482 (1,169)

1) In millions. Values for 2015: Albania, FYROM, Montenegro, Serbia, Turkey; 2012: Bosnia & Herzegovina, Kosovo

2) GDP in billion PPP current international \$. Values for 2012. GDP per capita in PPP current international \$, values for 2012.

3) In million current PPP \$. Values for 2013: Bosnia & Herzegovina, FYROM, Montenegro, Serbia, Turkey 2008: Albania.

4) In FTE. Values for 2013: Bosnia & Herzegovina, FYROM, Montenegro, Serbia, Turkey, 2008: Albania

Source: DG Research and Innovation, International Cooperation Unit

Data: Eurostat, UNESCO Institute for Statistics, OECD. Extraction date: 1/4/2016

Montenegro and the former Yugoslavian Republic of 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.

Table 2b: Enlargement Countries – Scientific Publications

<b>Country<sup>1</sup></b>	<b>Citation Impact<sup>2</sup> (world average = 1)</b>	<b>International Collaboration<sup>3</sup></b>	<b>Scholarly Output<sup>4</sup> (world total = 8,236,840)</b>
Albania	0.37	40.2%	1343
Bosnia & Herzegovina	0.71	50.3%	2402
fYRoM	1.09	49.8%	2199
Montenegro	1.87	60.0%	959
Serbia	0.87	36.5%	22294
Turkey	0.78	20.3%	114837
EU28	1.26	35.5%	2488783

<sup>1</sup>No data for Kosovo\*.

<sup>2</sup>Citation 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.

<sup>3</sup>The 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.

<sup>4</sup>Scholarly Output includes articles, reviews, conference papers, editorials and surveys.

Source: SCOPUS Sival. Publications' window: 2012-2014. Data extraction date: 1/4/2016.

In terms of innovation, the region does not appear to have developed a lot over the last couple of years. In 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.

#### *Integration in ERA and Association to Research and Innovation Framework Programmes*

In line with the Strategy on International Cooperation "enhancing and focusing EU international cooperation in research and innovation" (hereafter the International Strategy), cooperation with the EU 'enlargement countries' has focussed on facilitating the integration into the European Research Area, inter alia, through association to the EU Research and Innovation Framework Programme 'Horizon 2020' (two-pronged approach).

The enlargement countries (currently the seven candidate and potential candidate countries: six Western Balkan Countries and Turkey) have, given their pre-accession status, a special place and importance in the EU with respect to research and innovation. All enlargement countries, except Kosovo\*<sup>1</sup>, have signed association agreements to the Horizon 2020 programme and are eligible to funding and contribute financially to the program.

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 Steering Group on Human Resources and Mobility (SGHRM); 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 seven enlargement countries. This allows also creating synergies with the funding under the Pre-Accession Instrument (IPA II) as indicated in the International Strategy. 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.

The objective of the Western Balkans Innovation Strategy Exercise Facility (WISE Facility) is to promote policy stability and continuity of reform in the Western Balkans' research and innovation sector. This sector-wide

approach helps to improve the quality of public expenditures on research and innovation and thereby increases the sector's contribution to economic growth and job creation. The WISE Facility (1) advocates the implementation of the policy reform agenda for the research and innovation sector and (2) manages the implementation of regional programs in collaboration with national partners. In addition, the WISE Facility provides a platform for the coordination, monitoring, and evaluation of donors' support to research and innovation in the region.

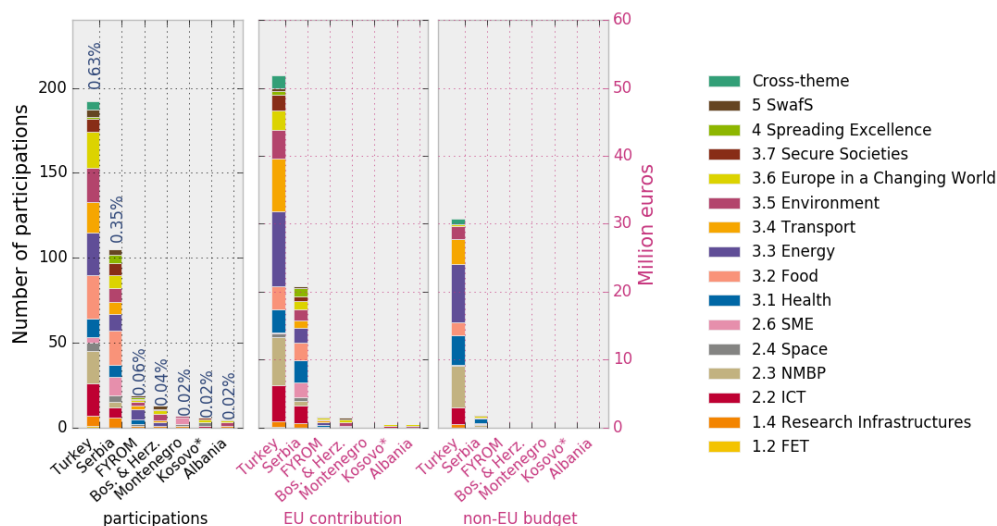
With job creation stagnant and economic growth stalled, the Western Balkans region faced an intensifying need to create knowledge-based economies that can generate higher-value-added jobs and stronger growth. Fostering synergies among their similar interventions and building on a growing collaboration, 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. These Smart Specialisation Strategies (S3) complement the work of the RCC and the WISE facility. 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. So far Serbia has developed a Smart Specialisation Strategy for the Vojvodina; and Turkey has developed such a strategy for the East Marmara, Konya, Karaman, and Manisa, Afyonkarahisar, Kütahya, Usak regions.

## **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\*<sup>1</sup> were associated to FP7 and renewed association to H2020. Despite being by now familiar with the participation in the framework programme, based on success rate the performance is not so good. This can be explained in particular by the need to enhance the R&I capacity at national level.

Figure 1: Enlargement Countries - Participation in Horizon 2020



Note: Data for signed projects of Horizon 2020. JRC, EIT, art.185, MSCA and ERC not included.  
 Source: DG Research and Innovation - International Cooperation  
 Data: CORDA, extraction date: 1/10/2016

Note: The percent share denotes the country's participations over the total participations in Horizon 2020. 'EC budget' is the EC contribution to the participants' costs and 'non EC budget' is the contributions from other sources.

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

As mentioned above, 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.

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. In its 2013 and 2014 enlargement strategies, the Commission outlined a new approach to economic governance. In September 2015 the Commission once again invited enlargement countries to submit their Economic Reform Programmes. 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. In the region as a whole, GDP is forecast to rise by 2.8% in 2016, 3.2% in 2017 and 3.9% in 2018. Encouragingly, there are signs of an emerging new investment cycle: most countries expect gross fixed capital formation to become an important growth driver. 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. In all these countries, the

level of public and private sector investment in research, development and innovation (RDI) is very low and far below the level needed to enable the economies to move up the ladder of the value chains. 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.

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). Only Montenegro has a national roadmap on research infrastructures in line with the ESFRI Roadmap (Turkey has one under preparation).

The human capital building is also very weak and effective compliance with the Charter and Code of Conduct for recruitment principles is very low. Only one Institute in Serbia and two institutes in the former Yugoslav Republic of Macedonia have obtained the Human Resources Logo on Excellence. On gender equality all 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 considering the principles. Turkey is doing better and most universities apply the principles of open access to data but further efforts are necessary on Open Science skills such as data management and re-use and open collaboration on PhD training. To underline the importance of compliance with the ERA principles, the EC, together with six leading Turkish universities aims at putting Turkish Universities more on the European scientific map through ERA compliance.