

# PATTERNS OF GEOGRAPHICAL MOBILITY OF RESEARCHERS FROM SIX WESTERN BALKAN COUNTRIES IN REGIONAL AND EUROPEAN MOBILITY BASED TRAINING PROGRAMMES

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## 1. ABSTRACT

The aim of this paper is to analyse the mobility of researchers from the six Western Balkan Countries, Albania, Bosnia and Herzegovina, Kosovo\*<sup>1</sup>, Montenegro, North Macedonia, and Serbia (abbr. WB6) within structured regional and European mobility programmes. We want to identify geographical patterns with a view on mobility-based training from the WB6 region to the EU, but also within the WB6 region.

The following structured regional European programmes provide the basis for this comparative analysis

- CEEPUS
- ERASMUS +
- Marie Skłodowska-Curie Actions (MSCA)
- COST

Mobility of researchers is regarded as one of the most powerful approaches for integrating WB6 researchers into the European Research Area. Since more than one decade different considerations have been pondered as to which measures could best support researcher mobility in the region as well as in exchange with the EU. On the other hand, the Western Balkan region has suffered from migration of large numbers of scientists, engineers, and technicians for decades. Structured mobility schemes, which enable knowledge exchange and knowledge inclusion processes through non-permanent stays abroad are often considered as adequate tools for mitigating the integration challenge and to contribute rather to 'brain circulation' than 'brain loss'.

The results show that all WB6 make intense use of the scrutinised programmes. Although participation in MSCA is low in absolute numbers, this programme is also well used when put in relation to the existing scientific human capacities in the countries studied. The available data also show that all programmes are used for both trans-European and intra-regional research mobility. However, outgoing mobility from

the WB6 is almost consistently higher than incoming mobility, which may be a lag effect on the one hand, but also an indication of underdeveloped regional attraction conditions.

The results presented here are from a study conducted by the author for the CEEPUS Secretariat in 2019. The data, insofar as it was publicly available, was subsequently updated until the summer of 2020. No evaluative assessment is undertaken within the framework of the study.

## 2. INTRODUCTION

Four structured mobility programmes are scrutinised in this paper: CEEPUS, ERASMUS +, Marie Skłodowska-Curie Actions (MSCA) and COST. We use the term 'structured mobility programmes' for RTI policy measures targeted at (mostly but not exclusively younger) researchers, who go abroad for a limited time for training or professional advancement. The research stay takes place through a structured integration into at least partially organized training or further education programmes (e.g. doctoral programmes; laboratory training; training schools) or joint research activities, which often take place within the framework of temporarily established (mostly university) network partnerships. Another structural feature is, that the return of the researcher is planned or at least explicitly requested. This fulfils the requirement of the so-called 'brain circulation' opposed to 'brain drain'.

The selection of programmes and schemes does not claim to provide a complete picture on mobility-based training in the region, although it covers the most important structured mobility programmes available. The WB6 have also unilateral mobility programmes, but often they are not limited to the EU or the WB6 region, but are open to world-wide mobility. Additionally, they are often quite limited in terms of the number of available fellowships or grants. Unilateral mobility programmes of non-WB6 countries open to incoming researches from abroad, such as the ones

<sup>1</sup> This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence. We use \* after the name Kosovo throughout the text to indicate this circumstance.

provided by the German DAAD or the Humboldt Stiftung are excluded as well. Short-term mobility exchanges within bilateral intergovernmental agreements or Memoranda of Understanding concluded between the WB6 governments or their main agencies and research organisations with their counterparts are neither considered.

After an overview in section 3 on the role of researcher mobility within regional and European integration processes, our empirical analysis starts with CEEPUS in section 4. CEEPUS was the first regional programme with a focus on supporting network-based mobility exchanges of students and researchers in the region of Central and soon Southeast Europe. CEEPUS has leveraged impressive numbers of mobility exchanges from January 1995 until today. We have analysed data from the academic year 2005/2006 until 2019/2020 provided by the Central CEEPUS Office to the author.<sup>2</sup>

Then, in section 5, we analyse the geographic patterns supported by European programmes. First, we analyse ERASMUS+, the most powerful European mobility exchange programme, which has opened up and remarkably increased its outreach towards the WB6 during the last couple of years. Data were provided by Austria's Agency for Education and Internationalisation (oead) covering the academic years 2014/2015 until 2016/2017. In addition, data between 2015 and 2019 were analysed based on information provided through country fact sheets published by the European Commission.

Marie Skłodowska-Curie Actions (MSCA), which are analysed in section 6, comprise the main schemes to support structured mobility of researchers within the European Research Programme HORIZON 2020. Data on MSCA are taken from country sheets provided by the European Commission covering the duration from 2014 until 2020.<sup>3</sup>

At European level, the COST programme also organises research-based mobility exchanges within organised networks. The most recent 2019 data published by COST in country fact-sheets are analysed<sup>4</sup>. These data, however, do not contain the target countries of the mobility. Thus, only the participation of WB6 in COST actions are analysed in section 7.

We finally make a summary and draw conclusions in section 8.

In order to better position the WB6 participation within the structured mobility schemes and to trace mobility exchanges within the WB6 neighbourhood, we also recorded some comparative data for Austria, Bulgaria, Croatia, Greece, Hungary, Romania, and Slovenia. All these countries, plus the Czech Republic, Moldova, Poland, Slovakia and the WB6 are member countries of CEEPUS. With the exception of Austria, the countries covered are characterised by somewhat weaker research

and innovation systems compared to developed EU countries (European Commission, 2020b). Whenever it was possible, we carried out gender-specific analysis as well.

### 3. RESEARCHER MOBILITY AS A STARTING POINT FOR SYSTEM INTEGRATION

Increasing the connectivity of researchers within the region but also between WB6 and European research communities is a long-term process that requires multiple efforts on different levels. In the specific case of WB6, this integration effort is embedded in a number of policy agendas including

- the process of EU accession, which is most profoundly characterised by the adoption or adaptation of regulations with a view on the *acquis communautaire*;<sup>5</sup>
- the reform and strengthening of national and regional research systems, which require strategic policy-making to set enabling framework conditions;
- the implementation of various policies, programmes and instruments facilitating the integration challenge and
- the establishment of databases and statistics for monitoring purposes.

For the cooperation of WB6 researchers with European counterparts, mobility of researchers is regarded as one of the most powerful integration approaches. The integrative power of mobility was prominently featured in the processes of the formation of the European Research Area<sup>6</sup>, (ERA) (European Commission, 2020a). In the Green Paper "The European Research Area (ERA): new perspectives", published by the European Commission in April 2007, an adequate flow of competent researchers was mentioned as a first priority. Today, one of six current priorities of ERA, i.e. priority 3 ('an open labour market for researchers') is directly related to mobility, while others, such as priority 5 ('optimal circulation, access to and transfer of scientific knowledge including knowledge circulation and open access'), indirectly relate to it.<sup>7</sup> To better coordinate and forward the ERA priorities, ERAC (the European Research Area and Innovation Committee) dedicated one of six of its permanent working groups to this priority: the ERAC Working Group on Human Resources / Mobility (SWG) (European Commission, 2019).

2 CEEPUS requested a study on the „Uptake of European Programmes in the CEEPUS Cooperation Area“ in 2019 (Schuch, 2019), which provides a sound basis for this analysis.

3 [https://ec.europa.eu/research/mariecurieactions/resources/document-libraries/h2020-marie-sklodowska-curie-actions-msca-country-factsheet-associated\\_en](https://ec.europa.eu/research/mariecurieactions/resources/document-libraries/h2020-marie-sklodowska-curie-actions-msca-country-factsheet-associated_en); accessed on 31 July 2020 and [https://ec.europa.eu/research/mariecurieactions/resources/document-libraries/h2020-marie-sklodowska-curie-actions-msca-country-factsheet-third\\_en](https://ec.europa.eu/research/mariecurieactions/resources/document-libraries/h2020-marie-sklodowska-curie-actions-msca-country-factsheet-third_en); accessed on 31 July 2020.

4 <https://www.cost.eu/wp-content/uploads/2020/07/COST-Country-Fact-Sheets-2018.pdf>; accessed on 31 July 2020.

5 All WB6 have a perspective to accede to the European Union and hence are also called „enlargement countries“ and COST Annual Report 2020a.

6 The Lisbon Treaty defines the European Research Area (ERA) as a unified research area open to the world and based on the Internal Market. The ERA enables free circulation of researchers, scientific knowledge and technology. The initial political concept of the ERA was launched by the publication of the Communication Towards a European Research Area in 2000 (European Commission 2000). The main objectives of this initiative were to boost Europe's competitiveness, to improve the coordination of research activities on national and European level, to develop human resources, and to increase the attractiveness of European research to the best researchers from all over the world.

7 The other four priorities are

- More effective national research systems
- Optimal transnational cooperation and competition, including optimal transnational cooperation and competition and research infrastructures
- Gender equality and gender mainstreaming in research
- International cooperation.

Although ERA and the European mobility programmes were created by and for the European Member States, it is also of importance for the WB6, because the integrative ERA understanding was soon enlarged towards accession countries and countries associated to the respective European Framework Programme for Research and Innovation (currently HORIZON 2020 lasting from 2014 to 2020). All WB6 with exception of Kosovo\* are associated to HORIZON 2020 and all associated countries can participate as observers in ERAC. This enables them to take part in the discussions (but not in decision-making) and to prepare for further integration in the European Research Area. All WB6 have committed themselves to work on the current ERA priorities (World Bank, 2013). In 2016 the innovation dimension was added to the initial focus on research<sup>8</sup> and enlargement countries were to indicate via the Economic Reform Programme which reforms they envisage on research and innovation.<sup>9</sup>

Under Pillar 2 'Smart Growth', mobility to enhance quality in education and competences is explicitly featured in the regional growth strategy 'SEE 2020 – Jobs and Prosperity in a European Perspective', which the Regional Cooperation Council (RCC) worked out upon the request of the Southeast Europe cooperation Process (SEECP) and the European Commission (EC) in 2013. Mobility is also highlighted in the Western Balkans Regional R&D Strategy for Innovation (Correa, 2013), published in the same year, where it is suggested that "reforms promoting the mobility of researchers, within the region and between the region and other countries, both in Europe and elsewhere ... should be advanced" (p. 8) to assist with counteracting brain drain and promoting 'brain circulation'. The RCC commissioned a study published in 2016 to take stock of the situation with regards to the mobility of researchers in the Western Balkan economies (Covey, 2016). Since then, different considerations have been pondered as to which measures could best support researcher mobility in the region as well as in exchange with the EU.

So far, recommendations for the further development of the scientific systems of the Southeast European region have attracted the most attention, which were made by the "Joint Science Conference" of the Austrian Academy of Sciences (ÖAW) and the National Academy of Sciences Leopoldina in the run-up to the Paris "3rd Western Balkans Summit" (2016) of the heads of state and government. Among others, it called for enhanced international mobility at all levels of the scientific careers in order to counteract the migration of qualified scientists abroad in the long term. In particular, a brain circulation scheme was demanded for junior scientists from the Western Balkan Countries to work at state-of-the-art institutions and companies abroad (Western Balkans Process/Berlin Process, 2016). Since then, discussion with the EC are going on as regards the shaping and financing of such scheme(s).

The notion of mobility for international interaction purposes is not confined to the WB6. National R&D strategies for international cooperation from many European countries strongly push the idea of international mobility of researchers, based on the assumption that 'brain circulation' contributes to leveraging the quality of the top-end human capital and thus contributes to enhancement of excellence (Schuch, 2019a; SFIC

2018; Özolat and Harrap, 2018; ERWATACH 2013; Schwaag Serger and Remoe, 2012; Boekholt et al. 2009; CREST, 2007). The justification for this claim stems to a large degree from the argument that the availability of qualified human capital belongs to the most important location factors for economies. The Western Balkan region, however, suffered from the migration of large numbers of scientists, engineers, and technicians for decades. With the exception of Croatia and Serbia, where some authors assume that these trends could be reversing (while others such as Vracic [2018] are opponent to this assessment), brain drain is likely to affect generations of young researchers, compromising research capacity in the longer term (World Bank, 2013). Governments in the region are aware of the challenges of brain drain and have undertaken a number of initiatives to address the issue (Varzari et al, 2013). Structured mobility schemes, which enable knowledge exchange and knowledge inclusion processes through non-permanent stays abroad are often considered as adequate tools for mitigating the integration challenge and to contribute rather to 'brain circulation' than 'brain loss'.

## 4. PARTICIPATION OF WB6 COUNTRIES IN CEEPUS

CEEPUS (Central European Exchange Programme for University Studies) is an important structured regional mobility programme to support academic mobility and cross-border cooperation between higher education institutions (HEI) in the region of Central and Southeast Europe (except Greece). At present, CEEPUS unites universities from 16 Central and Southeast European countries (Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Hungary, Kosovo\*<sup>10</sup>, North Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, the Slovak Republic and Slovenia) within networks consisting of at least three higher education institutions from at least two different CEEPUS treaty countries. Mobility of students and researchers<sup>11</sup> takes place primarily in the framework of such CEEPUS networks, which are competitively awarded through annual calls.

On average, a CEEPUS network consists of around 14 participating HEI (i.e. the so-called participations). CEEPUS cumulated 13,366 participations of HEI from the academic year 2005/2006 until 2019/2020 (see Tab. 1). An overview on the yearly development of the number of CEEPUS networks over time is provided in Schuch (2019b).

The highest share of participation has been achieved by Poland (1,490 or 11.15% of all participations in CEEPUS). Poland is positioned in a cluster of CEEPUS countries (plus Romania, Czech Republic, Slovakia and Hungary), whose universities frequently participate in CEEPUS networks. A second cluster consists of Croatia, Austria and Serbia (between 8.10% and 7.92% participation rate), followed by Slovenia (6.24%). The next cluster consists of Bulgaria, North Macedonia, Bosnia and Herzegovina (between 4.73% und 3.37%), followed by the CEEPUS countries Albania, Montenegro, Moldova and Kosovo\*.

8 As of 2015, all candidate countries and potential candidates submit annual Economic Reform Programmes (ERPs) that mimic the European Semester process.

9 [https://ec.europa.eu/research/iscp/index.cfm?pg=west\\_balk](https://ec.europa.eu/research/iscp/index.cfm?pg=west_balk); accessed on 29 July 2020.

10 CEEPUS refers to the status of Kosovo according to UN Security Council Resolution 1244/99 in its Ministerial Conference as Prishtina et al.

11 CEEPUS uses the term 'teachers' instead of 'researchers'. We equate the term 'teachers' in this study with 'researchers', because CEEPUS does not limit the mobility of the non-student faculty to perform only teaching functions, but allows also conduct of research. In reality, there is a high degree of overlap.

**Tab. 1:** Participation in CEEPUS networks and ratio between network coordination and network participation differentiated by CEEPUS countries (sum of the academic years 2005/2006 until 2019/2020)

Country	Networks	in %	Ratio between coordination and participation
<b>Albania</b>	239	1.79	n.a.
<b>Austria</b>	1,068	7.99	1:6
<b>Bosnia and Herzegovina</b>	451	3.37	1:150
<b>Bulgaria</b>	632	4.73	1:14
<b>Croatia</b>	1,082	8.10	1:20
<b>Czech Republic</b>	1,397	10.45	1:17
<b>Hungary</b>	1,352	10.12	1:15
<b>Kosovo*</b>	105	0.79	n.a.
<b>Moldova, Republic of</b>	140	1.05	n.a.
<b>Montenegro</b>	228	1.71	1:46
<b>North Macedonia, Republic of</b>	512	3.83	1:512
<b>Poland</b>	1,490	11.15	1:13
<b>Romania</b>	1,420	10.62	1:13
<b>Serbia</b>	1,059	7.92	1:15
<b>Slovakia</b>	1,357	10.15	1:16
<b>Slovenia</b>	834	6.24	1:8
<b>Grand Total</b>	<b>13,366</b>	<b>100</b>	<b>1:14</b>

Source: Central CEEPUS Office; own calculations. Greece is not a CEEPUS country and thus excluded.

The participation numbers are of course also influenced by the number of HEIs existing in each single CEEPUS country and by the country's size in terms of population and human research capacity. This could also provide some explanation of the high participation rates of Poland and Romania<sup>12</sup>, while in countries with a rather limited number of universities – like in Slovenia for instance – a certain degree of saturation is more easily achieved.

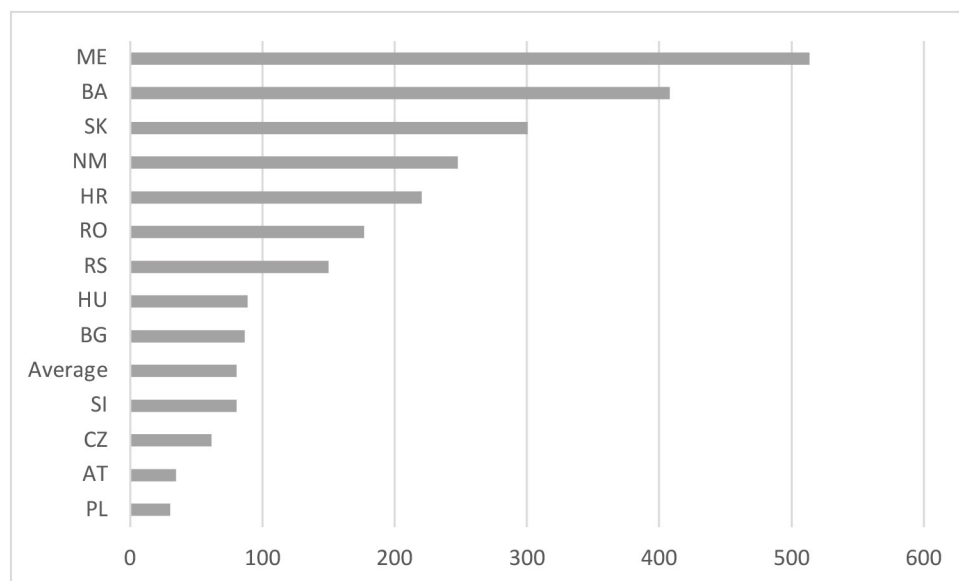
Most of the CEEPUS networks were coordinated by Austrian universities (no= 174), which had a central hub function especially in the first years of CEEPUS<sup>13</sup>. Frequent coordination was also performed by universities from Poland, Romania and Slovenia (between 113 and 104 coordinated networks). The next cluster consists of Hungary, Slovakia, the Czech Republic and – with some distance – Serbia (between 90 and 69 coordinated networks). This cluster is followed by Croatia (54) and Bulgaria (44), while the number of networks coordinated by HEI from Montenegro, Bosnia and Herzegovina and North Macedonia is comparatively very low (between 5 and 1). No coordination of CEEPUS networks from universities from Albania, Kosovo\* and Moldova could be identified in the data records.

It is interesting to look at the ratio between coordination of networks and participation in networks by CEEPUS countries, because frequent

coordination could indicate (i) a higher strategic ownership, (ii) available functional network management capacities and/or (iii) some kind of (attributed or self-imposed) leadership attribution. As shown in Tab. 1 we can identify striking differences between the CEEPUS member countries in this respect. On average the CEEPUS countries have a ratio of around 1 coordination : 14 participations, which means that out of 14 network participations of a country one participation is in the role of an overall network coordination. The countries close to average are Bulgaria, Hungary, Poland, Romania, Serbia, Slovakia and the Czech Republic. Austria and Slovenia, however, have relatively more overall network coordinations than participations. In contrast are Albania, Kosovo\*, Moldova, North Macedonia and Bosnia and Herzegovina. This latter group of countries is either less integrated in international cooperation, or these countries lack the necessary functional network management capacities and/or have less international credibility. This indicates structural problems, which have to be addressed primarily by domestic policies.

12 Although Romania, for instance, has only half the number of R&D personnel than Austria.

13 And few of these early networks are still in operation.

**Fig. 1:** Sum of inward + outward mobility in CEEPUS by 1,000 R&D personnel

Note: own calculations; R&D personnel in FTE (2018) taken from EUROSTAT (only latest available data for Bosnia and Herzegovina is from 2014).<sup>14</sup> Albania, Moldova and Kosovo\* are excluded.

Fig. 1 shows the sum of inward and outward mobility by 1,000 R&D personnel. If we normalise the CEEPUS participation data to get rid of size effects, one can compute the number of participations relative to the country's R&D capacity (expressed as R&D personnel in full-time equivalents [FTE] taken from Eurostat). Fig. 1 clearly shows that countries with lower R&D capacity benefit a lot from CEEPUS. Especially Montenegro and Bosnia-Herzegovina have a very high, above average relative participation. This would probably also be true for Kosovo\*, Albania and Moldova, if FTE researcher data were available. In addition, Slovakia, North Macedonia, Croatia, Romania and Serbia have a high above average relative participation. On the other hand, Tab. 2 also shows that the countries with the highest R&D capacity (expressed in R&D personnel in FTE), have a comparatively low relative participation (Poland, Austria, Czech Republic). The remaining countries are close to the average.

Alongside the almost 25,000 students, 20,010 researchers have also participated in mobility schemes within the CEEPUS networks since the 2005/2006 academic year (data of previous years were not available) (see Tab. 2). Thus, the number of researchers' mobility was almost as frequent as the number of students' mobility, which confirms the dual use of CEEPUS for the benefit of students and researchers.

As shown in Tab. 2, the countries with the highest numbers of outgoing researchers were Slovakia (3,146), Romania (2,647), Poland (2,599), Hungary (2,119), Serbia (2,113) and the Czech Republic (1,940). A 'middle' group consists of Croatia (1,346), Austria (1,120), and Bulgaria (1,049) followed with some distance by Slovenia (784). The highest number of incoming researchers went to Romania (2,998), Slovakia (2,945), and the Czech Republic (2,668), followed with some distance by Poland (2,290), Hungary (1,939), Austria (1,692) and Croatia (1,529).

The incoming/outgoing balance can also be seen as an indication for the attractiveness of a country's research system if we assume that researchers tend to go there where the better working conditions are. The

Czech Republic for instance has received 738 researchers more than sent abroad (see Tab. 2) and its incoming/outgoing ratio is 1.38:1. This value is only surpassed by Austria (1.51:1) and Kosovo\* (1.75:1).

However, the high incoming/outgoing value of Kosovo\* but also the low levels of for instance Slovenia and Poland show the weaknesses of a too uncritical use of this indicator as proxy for 'locational R&D attractiveness': the value for Kosovo\*, for instance, is partly a statistical artefact caused by low absolute mobility numbers, but can also be partly explained by a considerable number of expatriates who use the opportunity to temporarily return to Kosovo\*. Slovenia, which has a more competitive R&D system compared to the WB6, seems rather to be limited by its absolute low number of researchers and the relative low number of universities in the country, while in the case of Poland, for instance, size effects seem to matter. Poland attracted 2,290 researchers from the CEEPUS region during 2005/2006 until 2019/2020, which is the fourth highest value among the CEEPUS countries. This number of incoming researchers to Poland is also considerably higher than the number of researchers coming to Austria (1,692), but Poland also has a higher number of universities and researchers, which use CEEPUS for outgoing mobility (2,599).

Fig. 2 shows the incoming/outgoing imbalances of the scrutinised CEEPUS countries. Countries with a high imbalance skewed towards higher outgoing than incoming researchers' mobility are first of all Serbia, followed by Slovenia, Moldova and then Poland and North Macedonia.

As shown in Tab. 2, we can generalise that the pervasion of CEEPUS and, thus, its relative importance, is comparatively high in the WB6, which is shown clearly by the above-average relative participation figures and the strong cross-country mobility exchanges within the region. This points somehow to the heritage of the former Yugoslavia with still existing relations in the field of higher education and research, some shared cultural overlaps and a similar language space.

**Tab. 2:** Incoming and outgoing teachers within CEEPUS networks since the academic years 2005/2006 until 2019/2020 differentiated by countries (without freemovers)

Person Count	I N C O M I N G														T O				Balance
	AL	AT	BA	BG	CZ	HR	HU	MD	ME	NM	PL	RO	RS	SI	SK	XZ	Grand Total		
<b>OUT-GOING</b>																			
<b>AL outg.</b>		24	2	7	7	7	15	25		4	16	15	4	9	12	9	149	-7	
<b>AT outg.</b>	32		18	121	109	104	143	3	12	10	133	177	65	39	120	34	1120	572	
<b>BA outg.</b>	1	37		21	27	53	4	4	16	4	5	24	113	28	15	1	349	23	
<b>BG outg.</b>	7	115	16		136	48	83	13	30	29	123	220	66	23	123	17	1049	134	
<b>CZ outg.</b>	6	137	12	103		247	149	10	27	11	351	247	54	36	548	2	1940	728	
<b>HR outg.</b>	12	152	71	46	300		117	1	11	24	175	112	91	77	147	10	1346	183	
<b>HU outg.</b>	15	271	9	48	219	123	2	3	5	12	255	571	139	37	408	2	2119	-180	
<b>MD outg.</b>		6		20	18	3	3		2	5	37	125	1	1	17		238	-91	
<b>ME outg.</b>	1	8	8	9	16	13	4	1		2	2	8	11	2	6		91	179	
<b>NM outg.T</b>	2	33	9	36	28	33	15		15		11	14	22	18	22	3	261	-28	
<b>PL outg.</b>	26	219	5	186	516	205	212	32	55	20		372	71	42	618	20	2599	-309	
<b>RO out</b>	14	254	16	218	323	154	506	79	19	35	335		129	26	538	1	2647	351	
<b>RS outg.</b>	6	145	174	169	171	172	294	2	31	28	109	418		84	310		2113	-1094	
<b>SI outg.</b>	5	135	29	29	84	126	62	2	9	36	56	34	117		57	3	784	-304	
<b>SK outg.</b>	13	141	3	156	711	224	317	1	34	16	677	660	136	56		1	3146	-201	
<b>XZ outg.</b>	2	15		14	3	9	3			1	5	1		2	4		59	44	
<b>Grand Total</b>	<b>142</b>	<b>1692</b>	<b>372</b>	<b>1183</b>	<b>2668</b>	<b>1529</b>	<b>1939</b>	<b>147</b>	<b>270</b>	<b>233</b>	<b>2290</b>	<b>2998</b>	<b>1019</b>	<b>480</b>	<b>2945</b>	<b>103</b>	<b>20010</b>	<b>0</b>	

Source: Central CEEPUS Office; own calculations

**Fig. 2:** Incoming/outgoing mobility imbalance of teachers within CEEPUS networks since the academic years 2005/2006 until 2019/2020 differentiated by countries



Created with Datawrapper

Source: Central CEEPUS Office; own calculations. Map created with datawrapper.

In addition to the mobility exchange within the CEEPUS networks, also more than 6,500 so called free-movers based on Art. 2, para 6 of the CEEPUS-3 treaty, were supported since the 2005/2006 academic year. Thus, in total, around 1,571 researchers and 2,106 students (both inclusive free-movers) have gained mobility experiences per academic year from 2005/2006 to 2018/2019 at average, which is an impressive number.

## 5. PARTICIPATION OF WB6 COUNTRIES IN ERASMUS+

ERASMUS+ is the EU's major programme to support education, training, youth and sport in Europe. Its budget of €14.7 billion (2014-2020) provides opportunities for over 4 million Europeans (of which around 2 million are students and around 800,000 are lecturers, teachers, trainers, and education staff as well as youth workers<sup>15</sup>) to study, train, and gain experience abroad. The aim of ERASMUS+ is to contribute to the Europe 2020 strategy for growth, jobs, social equity and inclusion, as well as the aims of the EU's strategic framework for education and training.<sup>16</sup>

15 The others are mainly pupils and apprentices.

16 Information taken from <https://ec.europa.eu/programmes/erasmus-plus/>, accessed on 23 April 2019.



The eligible countries for ERASMUS+ are divided into Programme countries and Partner countries. Programme countries are eligible for all actions of ERASMUS+, while Partner countries can only take part in some, and are subject to specific conditions. All 28 EU Member States as well as North Macedonia and Serbia<sup>17</sup> are Programme countries. Albania, Bosnia and Herzegovina, Kosovo\* and Montenegro are Partner countries.<sup>18</sup>

ERASMUS+ is a powerful programme even if only the field of higher education, as in this paper, is concerned. Tab. 3 shows the number of

outgoing staff members<sup>19</sup> from ERASMUS+ Programme countries from the wider region in the period from 2014/15 to 2017/18. From these countries, around 51,000 staff members were going to other countries in these four years. The total incoming figure is lower: almost 45,000 staff members went to the selected countries within the four years under scrutiny. Negative balances (incoming minus outgoing) are observable for Bulgaria, Hungary, Romania and Slovenia. North Macedonia is the only WBC6 country for which corresponding data were provided in the factsheets published by the European Commission.

**Tab. 3:** Participation of selected ERASMUS+ programme countries from the wider region in ERASMUS+ (2014/15 – 2017/18) differentiated by outgoing and incoming staff

2014/2015 - 2017/2018					
	Outgoing staff	Incoming staff	Balance of staff (incoming minus outgoing)	Total R&D personnel in HES 2017 (headcount)	Outgoing staff in % of R&D Personnel in the HES (headcount) 2017
<b>Austria</b>	6.557	6.890	333	48.363	13,56
<b>Bulgaria</b>	6.662	4.074	-2.588	9.287	71,73
<b>Croatia</b>	3.161	3.921	760	11.386	27,76
<b>Greece</b>	5750	7147	1397	45.206	12,71
<b>Hungary</b>	9.620	8.580	-1.040	23.816	40,39
<b>North Macedonia</b>	269	807	538	2.853	9,43
<b>Romania</b>	15.829	9.924	-5.905	19.101	82,87
<b>Slovenia</b>	3.400	3.254	-146	5.212	65,23
<b>Sum</b>	<b>51.248</b>	<b>44.597</b>	<b>-6.651</b>	<b>165.224</b>	<b>31,02</b>

Source: country factsheets 2018 published in January 2020 at [https://ec.europa.eu/programmes/erasmus-plus/about/factsheets\\_en](https://ec.europa.eu/programmes/erasmus-plus/about/factsheets_en); accessed on 3 August 2020; EUROSTAT data on R&D personnel; accessed on 3 August 2020; own calculations.

<sup>a</sup>Data for Serbia was not available, because it became a Programme country on 5th February 2019.

Although the ERASMUS+ statistics use a different definition for staff than R&D personnel according to OECD/Eurostat, the ration of mobility figures vis-a-vis R&D personnel in the Higher Education Sector (HES) in headcount (2017) shown in Tab. 3 gives a first rough approximation about how intensively ERASMUS+ was used for exchange of HES personnel. By deliberately ignoring – but not forgetting - this haziness in definition one could estimate with caution that at average roughly around a fourth

to a third<sup>20</sup> of R&D personnel from the CEEPUS countries were making use of ERASMUS+ (outgoing only) between 2014 and 2017. Although the comparability used here is limited, not at least because some teachers may use ERASMUS+ several times, the leverage effect of Erasmus+ on personnel exchange can be considered as very high in general. North Macedonia, however, is the exception in this picture.

17 Serbia became Programme country on 5<sup>th</sup> February 2019.

18 Information taken from <https://ec.europa.eu/programmes/erasmus-plus/>, accessed on 23 April 2019.

19 Please take note that the definition of "staff" differs between CEEPUS and ERASMUS+.

20 One should also bear in mind that one and the same person can have more than just 1 mobility grant in the three academic years under scrutiny (2014/15 - 2016/17) and that staff in ERASMUS+ includes also administrative personnel.



**Tab. 4:** Participation of WB6 countries in ERASMUS+ (2015-2019) differentiated by outgoing and incoming students/staff

	Outgoing students and staff (2015-2019)	Incoming students and staff (2015-2019)	Balance
<b>Albania</b>	5.552	3.281	-2.271
<b>Bosnia and Herzegovina</b>	5.885	3.562	-2.323
<b>Kosovo*</b>	2.771	1.418	-1.353
<b>Montenegro</b>	2.008	1.188	-820
<b>North Macedonia</b>	1.359	1.173	-186
<b>Serbia</b>	6.913	4.319	-2.594
<b>Sum</b>	<b>23.129</b>	<b>13.786</b>	<b>-9.361</b>

Source: country factsheets published at [https://ec.europa.eu/programmes/erasmus-plus/about/factsheets\\_en](https://ec.europa.eu/programmes/erasmus-plus/about/factsheets_en); accessed on 3 August 2020; own calculations

Since similar detailed data were not available for WB6 countries, which were only ERASMUS+ Partner countries until 2019, Tab. 4 summarises basic information about the use of ERASMUS+ for WB6 countries with aggregated data from 2015 to 2019. Unfortunately, the source of these data does not allow a differentiation between students and staff. By taking the distribution between students and staff of those countries into account, which are ERASMUS+ Programme countries, we would estimate that the ratio of students and staff is around 3 : 1. From 2015 to 2018 more than 23,000 students and staff members from Albania, Bosnia and Herzegovina, Kosovo\*, Montenegro, North Macedonia and Serbia went to other ERASMUS+ countries. During the same period, these countries received almost 14,000 incoming students or staff. The balance between incoming and outgoing is clearly negative in these countries.

Unfortunately, the ERASMUS+ country sheets do not provide information about the countries of origin for incoming students/staff nor they provide information about the destination for outgoing students/staff. Schuch (2019) shows that there are pronounced mobility patterns within the region with regard to the regional neighboring countries, which are also CEEPUS countries, and for which sufficient data is available because they are ERASMUS+ programme countries. There are for instance strong outgoing staff ERASMUS+ mobility streams from Croatia to Slovenia and vice-versa as well as from North Macedonia to Slovenia. It is quite likely that the WB6 ERASMUS+ partner countries use the programme also to a good deal for mobility within the wider region. It is for instance known that the top receiving countries within ERASMUS+ for outgoing mobility from North Macedonia are Turkey, Croatia and Bulgaria.<sup>21</sup>

## 6. PARTICIPATION OF WB6 COUNTRIES IN MARIE SKŁODOWSKA-CURIE ACTIONS

Within Europe's R&D programme Horizon 2020, the Marie Skłodowska-Curie Actions (MSCA) provide several sub-instruments that support structured researcher mobility<sup>22</sup>:

1. **Co-funding of regional, national and international programmes that finance fellowships involving mobility to or from another country (COFUND):** COFUND offers additional funding to regional, national and international programmes for research training and career development. The scheme can support doctoral and fellowship programmes.
2. **Individual Fellowship (IF):** IF supports the mobility of researchers within and beyond Europe to attract the best foreign researchers to work in the EU.
3. **International Training Network (ITN):** ITNs support competitively selected joint research training and/or doctoral programmes, implemented by European partnerships of universities, research institutions, and non-academic organisations.
4. **International and inter-sectoral cooperation through the Research and Innovation Staff Exchanges (RISE):** RISE supports short-term mobility of research and innovation staff at all career levels, from the most junior (post-graduate) to the most senior (management), including also administrative and technical staff. It is open to partnerships of universities, research institutions, and non-academic organisations both within and beyond Europe.
5. **The European Researchers' Night (NIGHT):** It is a Europe-wide public event to stimulate interest in research careers, especially among young people (NIGHT is not considered in this analysis).

21 This information is available in the ERASMUS+ country factsheet of North Macedonia. [https://ec.europa.eu/programmes/erasmus-plus/about/factsheets\\_en](https://ec.europa.eu/programmes/erasmus-plus/about/factsheets_en); accessed on 7 August 2020.

22 Definitions taken from <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/marie-skłodowska-curie-actions>; accessed on 31 July 2020.

Data in Tab. 5 show several interesting aspects:

If we take the wider region as reference, we first see that participation in MSCA is uneven. We can distinguish the following clusters:

- a) Greece and Austria have the highest mobility numbers (and corresponding funding inflow). Country size factors and research capacity factors influence these numbers.
- b) In the second cluster we find a number of mid-sized “new” member states, namely Romania, Hungary, and Bulgaria, and the smaller-sized Slovenia as well as Serbia and Croatia; i.e. the most involved countries from the formerly so called “Western Balkan” region.
- c) All other WB6 show considerably lower involvement rates.

Secondly, among the entire wider region only Austria has a positive inward-outward balance. All the other countries (except Kosovo\*, which

is statistically not significant due to the very low absolute numbers) show more outgoing than incoming researchers. When considering the broad geographical coverage of MSCA with its focus on the entire EU, but also beyond, it seems that based on this indicator<sup>23</sup> only Austria is an attractive research location.

Third, the MSCA country profiles published by the EC show also data differentiated by gender. From these data we can conclude that the mobility offers under MSCA are above average used by female researchers from the WB6. Austria, by contrast, has a distinct surplus of mobile male researchers. The share of male researchers in MSCA actions is also considerably higher in Greece and Hungary. All other countries are close to a balanced participation in terms of gender.

**Tab. 5:** Participation, success rates, networks and EU contribution received in MSCA by WBC6 and countries of the wider region

Countries	No. of domestic re-searchers funded by MSCA (2014-2019)	No. of re-searchers going to ...	Inward-outward difference	EU contribution to domestic organisations (in mio. €)	Share of female researchers involved in MSCA actions in %	Success rate in % (no of funded projects div. by no. of submitted projects *100)
AL	32	4	-28	0,08	63	9,09
AT	322	808	486	123,81	36	13,55
BA	41	10	-31	0,98	54	25,00
BG	169	125	-44	6,83	49	18,83
GR	1397	868	-529	77,37	42	12,37
HR	158	59	-99	7,46	47	10,62
HU	244	105	-139	17,90	43	9,82
ME	12	0	-12	0,08	67	11,54
NM	30	4	-26	0,28	67	5,26
RO	346	147	-199	12,22	52	13,38
RS	246	61	-185	7,76	58	15,54
SL	199	160	-39	17,87	45	7,86
XK	3	4	1	N/A	100	6,67
<b>Total</b>	<b>3199</b>	<b>2355</b>	<b>-844</b>	<b>272,64</b>	<b>56</b>	<b>12,27</b>

Source: data published in country sheets by EC: [https://ec.europa.eu/research/mariecurieactions/msca-numbers\\_en](https://ec.europa.eu/research/mariecurieactions/msca-numbers_en). Last refresh date: 25/11/2019. R&D personnel in FTE (2018) taken from EUROSTAT (only latest available data for Bosnia and Herzegovina is from 2014).<sup>24</sup>

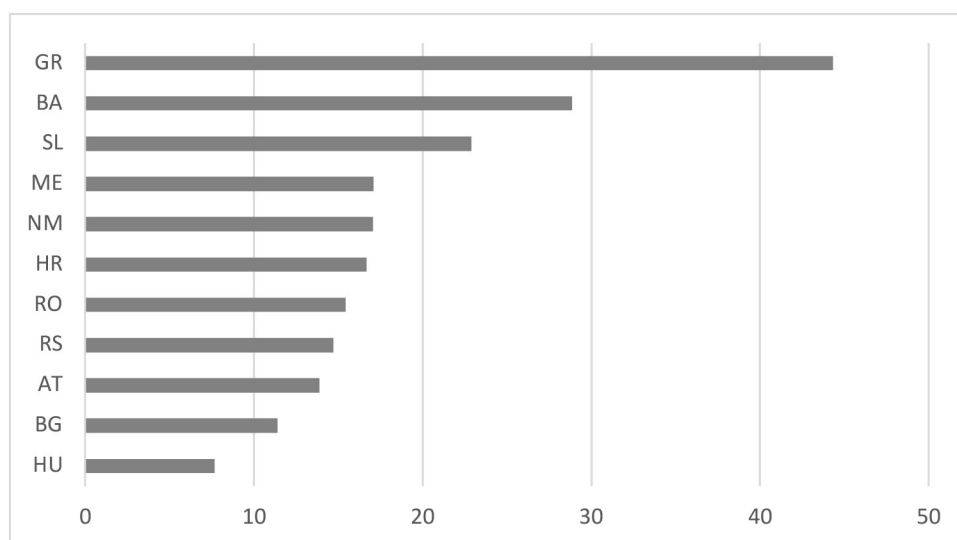
<sup>23</sup> We have already noted before that this is a too simple interpretation of this indicator. Greece or Slovenia, for instance, are also known for several pockets of excellence on their territory.

<sup>24</sup> [https://ec.europa.eu/eurostat/web/products-datasets/product?code=rd\\_p\\_perssci](https://ec.europa.eu/eurostat/web/products-datasets/product?code=rd_p_perssci); accessed on 31 July 2020.

Fourth, we observe very large differences as regards the MSCA success rates between the countries. The average success rate in MSCA among the EU Member States is 12.71%, among the Associated Countries 12.38% and among the Third Countries 19.04%. Considerably higher success rates have been achieved by Bosnia and Herzegovina and Bulgaria and considerably lower ones by Slovenia, North Macedonia, and Kosovo\*. All the other countries from the wider region meander around the average rates.

If we relate the sum of inward and outward mobility of each country to its capacity approximated by the number of R&D personnel in full-time equivalents, then we can see in Fig. 3 that Greece, Bosnia and Herzegovina and Slovenia are those countries from the wider region, which relatively make the most efficient use of MSCA. They are followed by Montenegro, North Macedonia and Croatia. In relation to its number of R&D personnel in full-time equivalents, especially Hungary is positioned on the other side of the spectrum.

**Fig. 3:** Sum of inward + outward mobility in MSCA by 1,000 R&D personnel



Note: own calculations; R&D personnel in FTE (2018) taken from EUROSTAT (only latest available data for Bosnia and Herzegovina is from 2014).<sup>25</sup> Albania, Moldova and Kosovo\* are excluded.

Albania, Bosnia and Herzegovina, Croatia, Greece, Hungary, North Macedonia, Romania, and Slovenia list Austria among their 10 top destination countries in MSCA. If we look on the origin of inward mobility of researchers to the WB6 we can identify a different picture.<sup>26</sup> The regional component is much more expressed. This is especially true for Bosnia and Herzegovina and Croatia where 3 out of 10 top countries for incoming MSCA mobility are from the scrutinised wider neighbourhood region. Despite the expressed EU-wide claim of MSCA, for several of the countries examined, the regional cooperation component is important and accordingly in demand too.

Overall we can conclude that the MSCA could be especially for PhD students and post-docs partially an alternative to the other scrutinised structured mobility programmes, although it is one of the most competitive sub-programmes in Horizon 2020. The absolute participation numbers are still marginal in the smaller WB6, which is mostly caused by their limited capacities. Within these limited absorption capacities,

however, the WB6 are doing quite well as regards the use of MSCA, especially in comparison to the scrutinised Central European countries. The overall claim raised by some politicians from the EU-13 that the European Framework Programme for RTD is made for those ('old' or Western) EU countries, which have stronger R&I systems in place, needs to be challenged. Countries show their own individual patterns and generalisations and assignments of guilt do not match the reality (as already argued by a number of other studies such as Quaglio et al. (2020), Pazour et al. (2018), Ukrainiski et al. (2018a), Ukrainiski et al. (2018b), Harrap and Doussineau (2017), Makkonen and Mitze (2016), MIRRIS (2016), Schuch (2014) and Schuch (2005)). The comparatively lower income attractiveness, however, remains a striking problem among all the scrutinised countries (with the exception of Austria), which can probably only be solved in the long run by considerable more investments in R&I infrastructures and increasing salaries.

<sup>25</sup> [https://ec.europa.eu/eurostat/web/products-datasets/product?code=rd\\_p\\_perssci](https://ec.europa.eu/eurostat/web/products-datasets/product?code=rd_p_perssci); accessed on 31 July 2020.

<sup>26</sup> Data published in country sheets by EC: [https://ec.europa.eu/research/mariecurieactions/msca-numbers\\_en](https://ec.europa.eu/research/mariecurieactions/msca-numbers_en). Last refresh date: 25/11/2019

## 7. PARTICIPATION OF WB6 COUNTRIES IN COST ACTIONS

COST is the oldest established European research programme and contributes actively to the 'Spreading Excellence and Widening Participation' goal of HORIZON 2020 with a strong focus on the so called COST Inclusiveness Target Countries (ITC). The ITC subsume the EU Member States and countries associated to HORIZON 2020 less developed in terms of research and innovation. COST has 39 member states including all WB6 countries with exception of Kosovo\* which is not a COST mem-

ber. Half of COST's total budget should be of direct benefit to the ITC. A strong focus is on the inclusion of early-stage researchers.

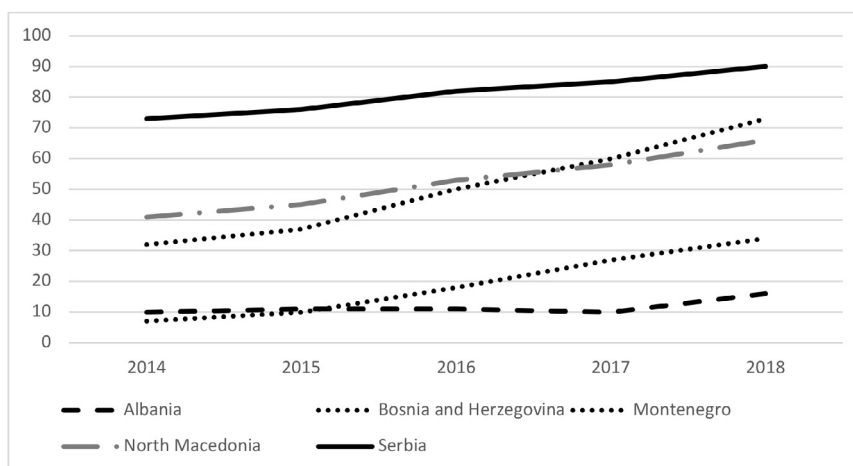
The COST programme funds thematic networks, which enable cooperation among scientists and researchers (including early-stage career researchers) across Europe. COST is 'bottom-up' and funds thematic networks in all research areas. Scientists and researchers can participate in science and technology networks known as COST Actions through either being part of a new proposal or joining an existing COST Action. COST Actions are basically networking instruments with a strong training component to co-operate and co-ordinate nationally-funded research activities. COST, however, does not fund research itself.

**Tab. 6:** Participation of WB6 countries except Kosovo\* and comparison countries from the neighbourhood in running COST actions in 2019 and 2018

Countries	2019			2018		
	Participations	Chairs	Vice-chairs	Participations	Chairs	Vice-chairs
Greece	285	6	14	285	3	15
Serbia	271	1	6	261	0	3
Croatia	270	1	7	260	3	6
Slovenia	248	4	3	236	1	4
Romania	244	0	3	237	0	2
Austria	243	11	4	247	8	7
Bosnia and Herzegovina	240	1	0	207	1	1
Hungary	227	1	6	223	1	4
Bulgaria	218	0	0	197	0	0
North Macedonia	210	1	2	188	0	3
Montenegro	121	0	0	92	0	0
Albania	105	0	0	27	0	0

Source: Data from COST (2020) Annual Report 2019, and from COST (2019) Annual Report 2018.

Tab. 6 shows the participation of WB6 and the comparison countries from the wider region in the 294 running COST actions in 2019 respectively the 291 running COST actions in 2018. The high involvement of WB6 is visible. Serbia and Croatia are within the first quartile of all COST member countries in terms of participation in running COST actions (COST, 2020). Bosnia and Herzegovina and North Macedonia are in the 3rd quartile. Only Montenegro and Albania have comparatively lower participation numbers, which is partly caused by the size of their research capacities.

**Fig. 4:** WB6 country representation in % of all running COST actions from 2014-2018 (except Kosovo\*)

Source: COST (2020b). Country Fact Sheet; <https://www.cost.eu/wp-content/uploads/2020/07/COST-Country-Fact-Sheets-2018.pdf>

However, as regards the number of chairs and vice-chairs, which is a proxy for recognition for scientific leadership, all WB6 score very low. Chairs of COST actions are still to a very large extent from the 'old' EU Member States (i.e. the so-called EU-15), in particular Italy, Spain, UK, Germany, France and the Netherlands (COST, 2020). The same is true for the co-chairs, who come from institutions located in UK, Italy, Spain, France, Germany and Portugal (COST, 2020).

Fig. 4 shows the development of representation of researchers from WB6 (except Kosovo) in COST actions from 2014 to 2018 taken from COST (2020b). The results clearly demonstrate that COST fulfils its intention to 'spreading excellence and widening participation', because more and more partners from the so called widening countries participate in the programme.<sup>27</sup> The WB6 countries, which are COST members, clearly in-

creased their participation in COST over time. Also Montenegro and Albania, the countries with the lowest overall participation numbers, show an observable increase in participation, too.

As highlighted in Tab. 7 participation of researchers from the countries under scrutiny differentiated by gender show very uneven patterns, although there is a balance with regard to the entire study region, because the countries with a high surplus of men (Austria and Hungary) balance each other out with the countries with a positive surplus of women (especially Albania; but also Bulgaria and Serbia). In general, all WB6, except North Macedonia show a tendency towards higher female participation in COST action initiatives in 2019. The situation in North Macedonia is statistically very balanced.

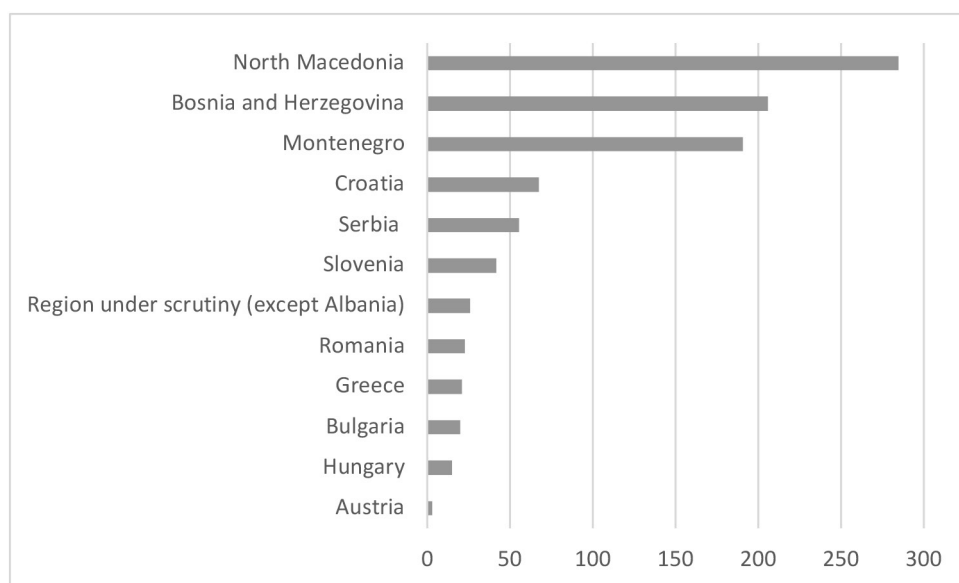
**Tab. 7:** Individual participation in all COST action initiatives by gender in 2019

Countries	Women	Men	Both Total	Gender balance
<b>Albania</b>	<b>36</b>	<b>16</b>	<b>52</b>	<b>very unbalanced</b>
<b>Austria</b>	286	491	777	very unbalanced
<b>Bosnia-Herzegovina</b>	<b>194</b>	<b>170</b>	<b>364</b>	<b>balanced</b>
<b>Bulgaria</b>	289	221	510	slightly skewed
<b>Croatia</b>	469	412	881	balanced
<b>Greece</b>	467	604	1071	slightly skewed
<b>Hungary</b>	243	444	687	very unbalanced
<b>Montenegro</b>	<b>73</b>	<b>61</b>	<b>134</b>	<b>balanced</b>
<b>North Macedonia</b>	<b>283</b>	<b>285</b>	<b>568</b>	<b>balanced</b>
<b>Romania</b>	386	336	722	balanced
<b>Serbia</b>	<b>676</b>	<b>483</b>	<b>1159</b>	<b>slightly skewed</b>
<b>Slovenia</b>	308	350	658	balanced
<b>Region under scrutiny</b>	<b>3710</b>	<b>3873</b>	<b>7583</b>	<b>balanced</b>

Source: Data from COST (2020) Annual Report 2019; own calculations

Fig. 5 shows that in relation to the available research capacity (approximated by the number of R&D personnel in full-time equivalents), COST is comparatively most intensively used by North Macedonia, Bosnia and Herzegovina and Montenegro, followed with considerable distance by a second cluster consisting of Croatia, Serbia and Slovenia. We can therefore draw the conclusion with some certainty that COST is a popular networking programme for the WB6 countries (even if the data for Albania and Kosovo are not available). Unfortunately, the data tells us nothing about the associated geographic mobility flows.

**Fig. 5:** Individual participation of researchers in COST actions 2019 differentiated by country per 1000 R&D personnel



Source: Data from COSTS (2019) Annual Report 2018. FTE of researchers (2018) are taken from EUROSTAT.<sup>28</sup>

## 8. SUMMARY AND CONCLUSIONS

1. The inclusion and participation of WB6 researchers in major structured regional and European mobility and training support programmes can be overall qualified as a success. Over the last 25 years, CEEPUS has had a great impact on capacity development in the field of higher education in Central and Southeast Europe. ERASMUS+ is also intensively used by the WB6 and participation in COST has increased remarkably. This trend should continue if all WB6 become ERASMUS+ Programme Members and if COST can maintain or even enlarge its functionality, scope and size in Horizon Europe.
2. CEEPUS is actively utilised by all CEEPUS countries, including the WB6 economies<sup>29</sup> and there are no obvious outsiders. The ratio between the country with the lowest network participation (Kosovo\*) and the country with the highest network participation (Poland) is only 1:14. The use of CEEPUS thus confirms a rather compact pattern given the very different sizes and R&D capacities of the CEEPUS member countries. Participation patterns in CEEPUS also show that within CEEPUS *“no one has been left behind”*. The number of researcher’s mobility was almost as frequent as the number of students’ mobility, which confirms the dual use of CEEPUS for the benefit of students and researchers.
3. If we consider network coordination as a proxy for a higher level of integration into academic internationalisation processes, than Albania, Kosovo\*, Moldova, North Macedonia and Bosnia and Herzegovina, seem to be still less vertically (or hierarchically) integrated in international cooperation, which could refer back to issues such as lack of available functional network management capacities or less international credibility. These lower levels of hierarchical integration, which we also observe for instance in the assumption of management functions in the COST programme, indicate structural problems, but could also be a typical feature of the *‘stairway to integration’*.
4. Another issue that points to structural weaknesses is the incoming-outgoing ratio of researchers within the scrutinised mobility programmes. In CEEPUS, for instance, countries with a high imbalance skewed towards higher outgoing than incoming

<sup>28</sup> [https://ec.europa.eu/eurostat/web/products-datasets/product?code=rd\\_p\\_perssci](https://ec.europa.eu/eurostat/web/products-datasets/product?code=rd_p_perssci); accessed on 31 July 2020.

<sup>29</sup> Albania, Bosnia and Herzegovina, Kosovo\*, Montenegro, North Macedonia and Serbia.

researchers' mobility are first of all Serbia, followed by Slovenia, Moldova and then Poland and North Macedonia.

5. The participation numbers are of course also influenced by the number of higher education institutions existing in each single country and by the country's size in terms of population and research capacity. If we normalise the CEEPUS participation data to get rid of size effects, for instance by relating the number of participations measured in terms of incoming and outgoing researchers of a country with its R&D capacity (expressed in R&D personnel in full-time equivalents [FTE]), we see that Montenegro and Bosnia-Herzegovina, Slovakia, North Macedonia, Croatia, Romania and Serbia have a high above average relative participation in CEEPUS. We can further generalise that the pervasion of CEEPUS and, thus, its relative importance, is comparatively high in the Western Balkans region. This points somehow to the heritage of the former Yugoslavia with still existing relations in the field of higher education and research, some shared cultural overlaps and a similar language space. Unfortunately, the accessible ERASMUS+ country sheets do not provide information about the countries of origin from incoming students/staff nor do they provide information about the destination for outgoing students/staff. But there are indications (Schuch, 2019) of strong outgoing staff ERASMUS+ mobility streams from Croatia to Slovenia and vice-versa as well as from North Macedonia to Slovenia. It is quite likely that the WB6 ERASMUS+ partner countries use the programme also to a good deal for mobility within the wider region.
6. While both CEEPUS and ERASMUS+ are strongly used by students and researchers from the WB6, the situation as regards the Marie Skłodowska-Curie Actions (MSCA) looks different. Although Serbia has participation numbers comparable with Croatia, Romania, Hungary, and Bulgaria, as well as the smaller-sized Slovenia, all other WB6 show considerably lower involvement rates. Moreover, among the entire wider neighbourhood region analysed, only Austria has a positive incoming-outgoing balance. All the other countries (except Kosovo\*) show more outgoing than incoming researchers. A positive or balanced inward-outward balance is usually an indication of an attractive research location. If we look on the origin of inward mobility of researchers to the WB6 we can identify a strong regional component also in MSCA. This is especially true for Bosnia and Herzegovina and Croatia where three out of 10 top countries for incoming MSCA mobility are from the scrutinised wider neighbourhood region. Therefore, we can conclude from this observation that despite the expressed EU-wide claim of MSCA, the regional cooperation component is important too and accordingly in demand for several of the countries examined.
7. MSCA is one of the most competitive sub-programmes in Horizon 2020. The absolute participation numbers are still very marginal in the smaller WB6, which, however, is mostly caused by their limited capacities. Within these limited absorption capacities, however, the WB6 are doing quite well as regards the use of MSCA, especially in comparison to the scrutinised Central European countries. The comparatively lower income attractiveness, however, remains a striking problem, which most probably can only be solved in the long run by considerably more investment in R&I infrastructures and increasing salaries.

8. The WB6 are very well integrated into COST actions. Serbia and Croatia are within the first quartile of all COST member countries in terms of participation in running COST actions (COST, 2020). Bosnia and Herzegovina and North Macedonia are in the 3rd quartile. Only Montenegro and Albania have comparatively lower but remarkably rising participation numbers, which is partly caused by the size of their research capacities. Overall, we can conclude with some certainty that COST is a popular networking programme for the WB6 countries (even if the data for Albania and Kosovo are not available). Unfortunately, the published data tells us nothing about the associated geographic mobility flows.
9. As regards the gender distribution, we can see differences among the scrutinised countries, but usually WB6 participation of females in structured mobility-based training programmes is higher than for men.

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# FTEVAL WORKING GROUP ON IMPACT DIMENSIONS OF R&I POLICY BEYOND SCIENTIFIC IMPACT

In summer 2020 the fteval community launched three internal working groups for capturing the state of the art of assessment of social impacts influenced or effected by R&I policy. International developments of social impact pathways of R&I were screened and reflected against the Austrian context. The working groups comprised more than 45 representatives of the fteval member organisations including funding agencies, research institutions, consultancies, ministries, and also the *Verein ScienceCenter-Netzwerk*.



The three groups analysed specific aspects of the impact of R&I and R&I policy on social innovations, on science-society relations and on a sustainable "green" economy. They were led by Joanneum Research, the OIS Center at Ludwig Boltzmann Gesellschaft and the Austrian Institute for SME Research. The results of the three groups were published in web-post format and can be viewed on the fteval website: [https://fteval.at/content/home/news/ag\\_impact\\_results/](https://fteval.at/content/home/news/ag_impact_results/)

Nurtured by further elaboration, these results were developed into articles that reflect the context more deeply and link to the relevant discourses. The concrete measures proposed by the three groups have the potential to unfold the understanding of the role that R&I policies can play in the Austrian context and beyond. By publishing the results, we hope to support the development towards a shared understanding on the assessment of social impact of R&I policies, and therefore further fuel the debate among policy makers in research, technology and innovation but also individual evaluators.