STUDY ON MACROREGIONAL STRATEGIES AND THEIR LINKS WITH COHESION POLICY

Data and analytical report for the EUSDR

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Contact: Jean-Marc Venineaux

E-mail: *REGIO-TRANSNATIONAL-AND-INTERREGIONAL-COOPERATION@ec.europa.eu*

European Commission
B-1049 Brussels

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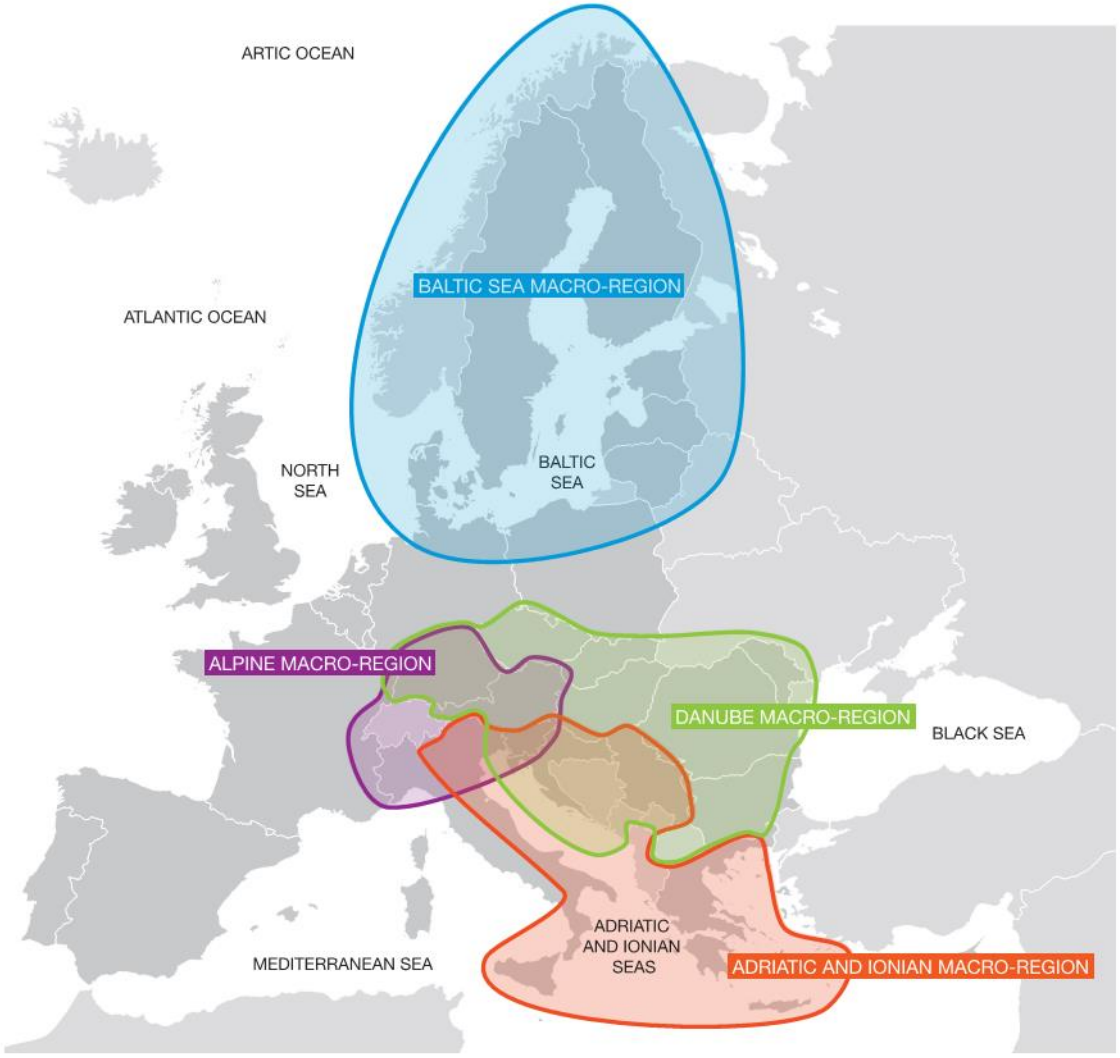

INSTITUT FÜR HÖHERE STUDIEN
INSTITUTE FOR ADVANCED STUDIES
Vienna
m&e factory
COWI

COWI

ADDRESS COWI A/S
Parallelvej 2
2800 Kongens Lyngby
Denmark

TEL +45 56 40 00 00
FAX +45 56 40 99 99
WWW cowi.com

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CONTENTS

APPENDICES

List of Abbreviations

Abbreviation	Stands for
AG	Action Group
AP	Action Plan
BSAP	Baltic Sea Action Plan
BSLF	Baltic Sea Labour Forum
BSN	Baltic Science Network
BSR	Baltic Sea Region
BSR Stars	PA Innovation (EUSBSR) flagship
BUP	Baltic University Programme
CBC	Cross Border Cooperation
CBSS	The Council of the Baltic Sea States
CEF	Connecting Europe Facility
CF	Cohesion Fund
CISE	Common Information Sharing Environment
DG	Directorate-General
EAFRD	European Agricultural Fund for Rural Development
EC	European Commission
ECTS	European Credit Transfer System
ECVET	European Credit system for Vocational Education and Training
EFTA	European Free Trade Association
EMFF	European Maritime and Fisheries Fund
ERASMUS+	EU Programme for Education, Training and Sport
ERDF	European Regional Development Fund
ESF	European Social Fund
ESIF / ESI funds	European Structural and Investment Funds
ETC	European Territorial Cooperation
EU	European Union
EUSAIR	European Union Strategy for the Adriatic-Ionian Region
EUSALP	European Union Strategy for the Alpine Region
EUSBSR	European Union Strategy for the Baltic Sea Region
EUSDR	European Union Strategy for the Danube Region
EWTCA	East West Transport Corridor Association
HAC	Horizontal Action Coordinator (EUSBSR)
HELCOM	Baltic Marine Environment Protection Commission
HLG	High Level Group
IALA	Navigation in the IMO, International Association of Marine Aids to Navigation and Lighthouse Authorities

ICPDR	International Commission for the Protection of the Danube River
IHO	International Hydrographic Organisation
IMO	International Maritime Organisation
MA	Managing Authority
MRS	Macro-regional strategy/-ies
MS	European Union Member States
MSFD	Marine Strategy Framework Directive
NCs	National Coordinators
NCM	Nordic Council of Ministers
NDEP	Northern Dimension Environmental Partnership
NEFCO	Nordic Environment Finance Corporation
NGO	Non-governmental organisation
NUTS	Nomenclature of territorial units for statistics
OP	Operational Programme
OVI	Objectively Verifiable Indicators
PA	Policy Area / Priority Area / Pillar / Action area
PA Education	Policy Area Education (EUSBSR)
PA Innovation	Policy Area Innovation (EUSBSR)
PA Nutri	Policy Area Nutrition (EUSBSR)
PA Safe	Policy Area Safety (EUSBSR)
PA Transport	Policy Area Transport (EUSBSR)
PAC	Policy / Priority Area Coordinator
RDP	Rural Development Programme
S2W	School to Work (PA Education (EUSBSR) flagship)
SG	Steering Group
SME	Small and medium-sized enterprises
SWD	Commission Staff Working Document
TEN-T	The Trans-European Transport Networks
TO	Thematic objective
TNK	Transnational Component
TSG	Thematic Steering Group
VET	Vocational Education and Training
WFD	Water Framework Directive

1 Introduction to the Report

Data and analysis report for Task 1 and Task 2

The 'Study on macro-regional strategies and their links with cohesion policy' consists of four task, which are summarised and concluded upon in the Final Report. The first two tasks (**Task 1** and **Task 2**) have been reported on individually, and the present report contains the **data and analysis** for these two tasks for the European Union Strategy for the Danube Sea Region (**EUSDR**).

Structure of the report

This report begins with a brief section presenting the EUSDR, followed by

the first major part (section 2) of the report, which contains the data and analytical report for **Task 1**, i.e. a description and an analysis of the overall context of the Danube macroregion;

thereafter, the second major part (section 3) contains the data and analytical report for **Task 2**, analysing the overall achievements of the EUSDR and an evaluation of its contribution to strengthening the territorial cohesion objective of the EU. Task 2 is divided into the following four sub-tasks:

Task 2a: Review of the EUSDR

Task 2b: Achievements of the EUSDR

Task 2c: Comparison of objectives of the EUSDR with achievements

Task 2d: EUSDR and ESIF

1.1 The EUSDR – Background

European Commission prepared the EU Strategy for the Danube Region (EUSDR), in cooperation with the fourteen countries and stakeholders in the region. Based on the experience from the Baltic Region, the EUSDR addresses the common challenges related to the region and the Danube River in particular.

The EUSDR members include nine EU Member States, three (potential) candidate/pre-accession countries, and two neighbourhood countries. The strategy builds on previous regional cooperation and aims at contributing to develop this cooperation and strengthen the regional integration across all member countries.

The EUSDR's four main objectives (called pillars) concern the 'connection of the region', 'protection of the environment', 'building prosperity' and 'strengthening the region'. These pillars cover a range of topics with a geographical focus on the Danube Basin and the regional and transnational issues related to it. Consequently, the priority areas and projects encourage and strengthen cooperation on issues such as water quality, navigation systems, or training of personnel for inland navigation.[1]

The Danube Region has 14 member states, which are part of the EUSDR.

Table 1-1 Countries and key features of the EUSDR

Countries and regions	Key features
EU countries • Germany (Baden-Württemberg, Bayern) • Austria • The Slovak Republic • The Czech Republic • Hungary • Slovenia • Croatia • Romania • Bulgaria Non-EU countries • Serbia • Bosnia and Herzegovina • Montenegro • The Republic of Moldova • Ukraine	• Representing 115 million inhabitants or more than 22% of the EU population • 9 EU Member States as well as 5 non-EU members

[1] http://www.danube-region.eu/about and COMMISSION STAFF WORKING DOCUMENT ACTION PLAN, Accompanying document to the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS European Union Strategy for the Danube Region {COM(2010) 715}, SEC(2010) 1489.

Figure 1-1 The EUSDR by NUTS2/Statistical Regions

The EUSDR strategy includes four pillars, which are implemented through eleven priority areas (hereafter PAs).

Table 1-2 EUSDR: pillars and priority areas

Pillars	Priority Areas
Connecting the Region	1. Mobility and multimodality 1A. Waterways mobility 1B. Rail-Road-Air mobility 2. Sustainable energy 3. Culture and tourism, people to people
Protecting the Environment	4. Water quality 5. Environmental risks 6. Biodiversity, landscapes, air and soil quality
Building Prosperity	7. Knowledge society 8. Competitiveness 9. People and skills
Strengthening the Region	10. Institutional capacity and cooperation 11. Security

Strategy and action plan

The strategy and the related action plan were endorsed by the Council in April 2011. The action plan is 'rolling', i.e. it will be regularly reviewed and updated[2].

Governance

[2] COMMISSION STAFF WORKING DOCUMENT, ACTION PLAN, Accompanying document to the COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS; European Union Strategy for the Danube Region; SEC(2010) 1489.

Governance of the EUSDR consists of a number of actors and institutions as listed in **Error! Reference source not found.**. The Steering Groups of the individual priority areas, led by the PACs, are the key implementers of the strategy.

Table 1-3 Roles and responsibilities in the EUSDR[3]

Actors/roles	Description
National Coordinators	Core strategic body – Coordinate and keep overview of strategy implementation at national/regional level and serve as links between political level and PAs.
Priority Area Coordinators (PACs)	Leaders of the thematic fields and the Steering Groups – Officials of national/regional administrations, experts in their areas, drivers of operational implementation of the strategy.
Steering Groups	Ensure implementation of the strategy – Members from all involved countries, as well as representatives of civil society, support the PACs in day-to-day implementation.
Managing Authorities	Mangers of ESIF programmes
European Level (DG Regio and High Level Group (HLG))	Help ensure the connection between the strategy and EU policies – Provide links with EU decision makers and institutional support through EU funding.
Danube Strategy Point (DSP)	Supports the actors implementing the strategy and takes care of communication activities.

Steering group

Priority Areas are implemented by Priority Coordinators supported by the Steering Group (SG). Furthermore, the SG should also make decisions regarding the future development of the area, its objectives, co-operations and guidelines. The SG is responsible for the labelling of projects to receive a Letter of Recommendation, but not for the operational initiation, administration, organization or execution of such projects. The tasks of the SGs are to ensure that suitable actions are anchored all over the region and in all participating states.

Thematic or working group

Many priority areas use thematic Working Groups for the coordination and discussion of existing and proposed projects. In order to base the Strategy's implementation on the latest available knowledge, regional and international experts may be consulted and invited to the sessions of the Working Groups.

[3] "Governance – How is the Strategy run?" (http://www.danube-region.eu/about/governance) and COMMISSION STAFF WORKING DOCUMENT, Accompanying the document: REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on the implementation of EU macro-regional strategies (SWD(2016) 443 final).

STATE OF THE MACRO-REGIONS

EUSDR (TASK 1)

2 State of the Macro-Regions (Task 1)

2.1 Introduction to Task 1

This report presents the results of Task 1 of the 'Study on Macro-Regional Strategies and their links with cohesion policy' for the Danube Macro-regional Strategy. Three other reports of the same structure cover the remaining three macro-regions: the Baltic Sea, the Alpine and the Adriatic and Ionian Sea Strategy.

This report provides an '*indicator-based description and analysis of the overall context of [the] macro-regions*'[4]. This report aims further to provide a context that is detached from the Macro-regional Strategy concept and does not provide an evaluation of the Macro-regional strategies objectives; which is addressed in the Task 2 report. The description and analysis is structured along four specific headlines: macro-economic overview; macro-regional integration; competitiveness; and the political, institutional and governance context. There is a chapter on each of these dimensions, followed by a synthesised meta-analysis. Prior to these indicator-based chapters, the report provides a brief methodological overview.

For each indicator that is described, the report first provides a graphical illustration of the indicator values. This is followed by a description and analysis of the indicator values in question.

[4] The study Specifications

2.2 Methodological Framework for Task 1

2.2.1 Macro-regions

The Macro-Regional Framework

The concept of Macro-regions refers to a grouping of regions that principally share a common functional context, such mountains, sea-basins, or river-basins, and '*in which the priorities and objectives set out in the corresponding strategy can be properly addressed*'[5]. While this grouping of territories into macro-regions thus follows a functional logic, it remains an artificial construct in terms of a governance or territorial unit. Therefore, contextual information for a macro-region as a whole is not readily available. This is reflected in the fact that no selection of relevant information is available on an aggregated level.

The family of reports under Task 1 aims at filling this gap. They seek to provide a set of relevant information that closes this gap and draws valid inferences on the overall context of the macro-region in question.

Indicators to provide an overall context of the Macro-regions

More specifically, the context of the macro-regions is described through a set of indicators on four dimensions (macroeconomic overview, integration, competitiveness and the institutional / governance context). The four types of indicators provide a research framework upon which the Task builds, and essentially reflect the EU's principal policy of Economic-, Social-, and Territorial Cohesion as follows:

- **Macroeconomic indicators** reflect the (socio) economic context of the individual economies as well as the macro-region as a whole. Further, they also serve as overview indicators on the overall social- and economic cohesion.

- **Macro-regional economic integration indicators** describe the intensity of cooperation, integration and (economic, cultural) exchange among the countries of a macro-region, and essentially reflect the state of territorial cohesion.

- **Competitiveness indicators** provide a more detailed insight into the (broadly defined) competitiveness of countries and macro-regions on various aspects. These indicators provide inference on factors that affect the three Cohesion objectives.

- **Political, institutional and governance indicators** mirror the political state of a macro-region in terms of governments' accountability or effectiveness of legislation. These indicators mirror the likely capacity to effectively pursue interventions on the economic, social as well as territorial cohesion.

[5] Study specifications

The reports provide a picture of the status of the macro-region in question, of the developments inside the macro-regions and when possible (i.e. data allows) a comparison of the current results with the results of the past. The family of Task 1 reports thus explores and analyses the overall context of the four existing Macro-Regional Strategies (MRS), namely the EU Strategy for the Baltic Sea Region (EUSBSR), the EU Strategy for the Danube Region (EUSDR), the EU Strategy for the Alpine Region (EUSALP) and the EU Strategy for the Adriatic and Ionian Region (EUSAIR). The analysis is thus as such detached from the contents of each of the macro-regional strategies. Rather, it focuses on the comparable assessment of the socioeconomic and macro-regional integration status within the macro-regions, as well as on the comparable investigation of their performance regarding competition and efficient institutions and governance.

2.2.2 Indicator Analysis

Choosing macro-regionally relevant indicators

A first step of Task 1 focused on the construction of a set of indicators which are relevant to macro-regions on a macro-regional level. For this, indicators were first identified by the consultant, and the final selection was done in close cooperation with DG REGIO. Consultations with DG REGIO and members of the Steering Committee served to ensure an eventual comprehensive and relevant picture of the macro-regions.

Emphasis on regional indicators where possible

For the identification of indicators statistical units had to be considered. Given that the macro-regions in some cases consist of regions and not entire countries, the geographical level of the analysis is principally conducted at level 2 of the Nomenclature of territorial units for statistics (NUTS-2), as defined by the EU. However, in some cases data are not available at NUTS-2 level of aggregation but at NUTS-1 level or country level only. In these cases the missing information for the NUTS-2 level has been substituted by data from the first available aggregation level above it, i.e. if statistical information on a measure was available at NUTS-1 level, the same performance measure was assumed to apply at the NUTS-2 level. For some variables only country-specific information was available. This applies for example to the macro-regional integration indicators.

The statistical units for regions outside the EU were chosen according to the countries' own aggregation at NUTS-2 level (equivalent to SR3[6]) as defined by the EU. Only very few data were available at a level comparable with the NUTS-2 level of the EU. Furthermore, most analysed countries outside the EU are quite small, and most data for the regions outside the EU have therefore been chosen at country level of aggregation.

[6] The NUTS classification is defined only for the Member States of the EU. Eurostat, in agreement with the countries concerned, also defines a coding of statistical regions (SR) for countries that do not belong to the EU but are either candidate countries, potential candidate countries or countries belonging to the European Free Trade Association (EFTA). Eurostat and Serbia have not yet agreed on statistical regions for the country.

The main sources of data used in this report are the Eurostat-Database supplemented with data from the World Bank Database, OECD, UNCTAD, COMTRADE, EEAA, ESPON project. Most NUTS-2 data are published with a time lag of one or two years. In order to create a common basis across the macro-regions and the themes, the description and analysis are generally based on data available for the year 2015 or the latest available data for all considered regions. When possible, a comparison is provided between the latest available year data and the data for 2008 for the Baltic Sea and Danube macro-regions. The year 2008 also is the year just before the creation of these two macro-regional strategies. For the two newer macro-regions, the Alpine and Adriatic Ionian macro-regions it is the year 2011 that is compared to 2015. The year 2011 is the year just before the creation of the Alpine and Adriatic Ionian macro-regions and it offers a timespan long enough in order for changes to become visible.

Each of the quantitative and qualitative indicators identified as best describing the socio- economic context, integration, as well as the competitiveness, institutional and governance situation of the four macro-regions was subject of an assessment against the RACER framework. RACER stands for "Relevant, Acceptable, Credible, Easy, Robust" and enables a judgement on each indicator's properties and qualities. Each RACER criterion has been assessed on a three-level scoring scale (green: criterion completely fulfilled; orange: criterion partly fulfilled; red: criterion not fulfilled). Based on the strengths and weaknesses of each of the quantitative and qualitative indicators across all the RACER criteria, a list of indicators was selected out of a pool of indicators considered.

The indicators which complied with all RACER criteria (green overall) have been definitely included into the set of selected indicators; those, which did not comply with all RACER criteria (a mix of green, red and yellow) and were not of high importance for the considered macro-region have been left outside.

2.2.3 Composite Benchmarks

As it is not possible to monitor all dimensions of a macro-region with one single indicator, a larger number of indicators has been selected. An additional challenge is that a macro-region's picture comprises the four dimensions (macro-economic, macro-regional integration, competitiveness and political-institutional- governance) but each dimension cannot be captured by one single quantitative indicator.

Composite Indices

In order to cope with this challenge, all indicators with a common theme have been aggregated into composite indices. Composite indices bundle separate (component) indicators into one index which allows the values of the whole bundle expressed as only one measure[7]; examples of such indices are the Human Development Index, Environmental Sustainability Index, and stock indices like the NASDAQ Index. In the course of gathering indicator data, the data have been grouped into sets of related indicators according to appropriately

[7] See http://www.investopedia.com/terms/c/compositeindex.asp

identified themes. Themes have been chosen so that the indicators together represent an "essential feature" of and within a macro-region. The individual indicators have been aggregated without any weights and each composite index hence represents the unweighted average of all indicators.

Composite Benchmarks

Different indicators generally apply different scales, such as percentages, currencies or categorical data (e.g. chemical status of waterbodies). The aggregation of such different scales only makes sense for comparable variables. Each indicator therefore needs to be normalised (to a common scale) before these can be combined into a composite index. For this aggregation, the proprietary '*emb*' model (*equilibrated medial benchmarking*) has been applied[8].

The benchmarking analysis focuses on the four macro-regions and the four dimensions inside each macro-region compares countries and/or NUTS-2 regions inside the individual macro-region based on a common reference framework of EU countries. The reference framework for each component indicator or composite index is delineated by the "top performer" of EU28 countries (benchmarked at 150), the "lowest performer" (50) and the median performer(s) at 100[9]. A high benchmarking score always reflects a more "desirable" situation. Taking unemployment rates as an example, higher scores reflect lower unemployment rates. In this way, the benchmarking results can always be read as showing whether – and to what extent – they are above or below the median in the EU at country level. This common framework enables observations to be made across different regions, even though the main focus remains within each macro-region.

The benchmark is always scaled on a country level against all EU28 Member States. The benchmarking score hence indicates a country's or a region's relative position to all EU28 countries. This means in turn that one can observe values above 150 and below 50 in the cases summarised in the table below.

[8] For the Proprietary Method of constructing indices from multiple indicators refer to: Fink, M. *et al.* (2011), *Measuring the impact of flexicurity policies on the EU labour market*, IHS Research Report, commissioned by DG EMPL (Employment, Social Affairs and Inclusion).

[9] The median is the point in a dataset in which a split of that dataset results in two sets with an equal number of data points. See http://www.investopedia.com/terms/m/median.asp for more details

Table 2-1: Cases with benchmarking scores above 150 and below 50

Case	Explanation
Regional analyses (NUTS-2 level)	A NUTS-2 region may out-/underperform its country. Such as Stockholm (SE), performing higher than Sweden as a whole.
Non-EU countries	A non-EU country is not included in the benchmarking scale. Thus, a country like Ukraine may score above 150 or below 50, as they are not included in the scaling.
Macro-regional Integration analyses	Countries that are stronger/weaker integrated in a macro-region than the EU's 'top performing'/'bottom performing' country is integrated in the EU28 (see paragraphs below). For example, Germany's trade integration with countries in the Danube region comprises only a small share of its trade with all EU28 countries and is at the same time lower than that of the EU's 'bottom performer'.

Integration Indices

The chapter on integration includes new integration indices. These IHS-proprietary indices cover respectively Labour Integration (three indices plus a composite of these 3 components), Capital Integration (Foreign Direct Investment (FDI), Energy Integration, and Trade Integration. Each of these seven indices is constructed on a similar principle, which is outlined as follows.

When the amount or value of labour, capital etc. supplied by a country to another country (a 'partner'), or, equivalently, received from a partner, increases, it can be said that the level of integration between the two has increased. Considering a particular group of countries, the focus is on the bilateral flows between them. For the task of estimating integration within macro-regions, i.e. between individual countries belonging to the macro-region in question, the first step is the development of a "Bilateral Flow Matrix", as shown in the table below.

Table 2-2: Energy Integration Example (Baltic Sea), energy exports (kTOE)

Partner	Denmark	Germany	Estonia	Latvia	Lithuania	Poland	Finland	Sweden
Denmark	0.0	1,917.4	0.0	0.0	0.0	0.0	505.6	3,503.5
Germany	3.5	0.0	0.0	0.0	0.0	916.5	0.0	0.0
Estonia	0.0	0.0	0.0	522.7	0.0	0.0	25.6	0.0
Latvia	0.0	0.0	0.4	0.0	293.9	0.0	0.0	0.0
Lithuania	0.0	0.0	79.7	14.4	0.0	51.4	0.0	0.0
Poland	0.0	251.7	0.0	0.0	5.6	0.0	0.0	1.7
Finland	0.0	0.2	432.8	0.0	0.0	0.0	0.0	0.1
Sweden	477.6	168.3	0.0	0.0	0.0	302.0	1,484.4	0.0

Immediately, certain strong relationships between certain country-pairs are visible. What such a table of absolute values does not make clear is the 'importance' of a bilateral relationship for a specific country. A second step

therefore converts the data to a relative share of all its exports (or foreign investments, migration flows, remittances) (in worldwide).

Table 2-3: Energy Integration Example, Share of total exports to partner country (in %)

Partner	Denmark	Germany	Estonia	Latvia	Lithuania	Poland	Finland	Sweden
Denmark	0.0	11.8	0.0	0.0	0.0	0.0	3.1	21.5
Germany	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0
Estonia	0.0	0.0	0.0	24.8	0.0	0.0	1.2	0.0
Latvia	0.0	0.0	0.0	0.0	13.8	0.0	0.0	0.0
Lithuania	0.0	0.0	0.9	0.2	0.0	0.6	0.0	0.0
Poland	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Finland	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0
Sweden	2.6	0.9	0.0	0.0	0.0	1.6	8.1	0.0

The new integration index provides a common basis for measuring integration in each of the four macro-regions, just as the case for every other indicator considered in this study. Given that the number of countries in the macro-regions vary, the total share of e.g. energy exports to the macro-region would grow with the number of member countries. Therefore, to provide a measure of integration that is not affected by the size of a macro-region, the chosen measure for each country's degree of integration within its macro-region is its per partner share (ppShare); i.e. the average flow to a destination country.

Table 2-4: Energy Integration Example, resulting per partner share

Partner	ppShare
Denmark	5.21
Germany	0.22
Estonia	3.72
Latvia	1.98
Lithuania	0.23
Poland	0.18
Finland	0.83
Sweden	1.90

Benchmarking Integration Indices

In the case of integration indices, the procedure to establish the benchmark is identical in formation as for the other indices, except that in this case the bilateral flow matrix is 28 x 28 for the EU28. Thus, the benchmark is defined by the average share that each Member State exports to the EU28 countries. This results in a per partner share of each Member State, but to the whole EU28, instead of a macro-region.

In other words, using the per partner share as a unit of measure enables the degree of integration within each macro-region to be benchmarked against the degree of integration in the EU as a whole. This provides a deep insight into the question of whether the common geographical basis (and more) for the macro-regions is actually, and to what extent, of particular relevance compared to the

entire setting of all EU countries, which may in general cover a more or less contiguous area, but which course also comprise (even more) multiple regional contexts.

As mentioned in Table 3-43 above, there are many cases found to score well below 50 or well above 150. This is entirely consistent: The reason, expressed mathematically, is that the two-dimensional flow matrices gives rise to country index values in macro-regions that are not subsets of the EU index; for non-integration indices, in contrast the (EU) country indicator values form by definition a subset of the EU28.

Illustrative Maps

Each composite index is accompanied by a figure that consists of two maps and one bar chart. Both maps show the composite index values for each NUTS region in differing colour schemes. The first map provides a coloured illustration of the scores on a scale from 50-150 and reflects how a given region performs on the EU28-wide level (i.e. 100 reflects the EU28 median). Any regions scoring outside this defined range are displayed as 50 or 150.
The scale of the second map is in turn defined by the lowest and highest composite index scores found for the macro-region and seeks to highlight the differences between the high and low performing regions of that macro-region more clearly. As a result, the range of this scale depends on the maximum and minimum scores for each individual composite index in a given macro-region.
The bar chart identifies the two regions with the highest and lowest composite index scores in each country, accompanied by the (benchmarked) scores of the index's components. The colouring scale ranges from 50 to 150.

Digital Toolbox

Synchronous to this report, a digital toolbox has been developed. The digital toolbox comprises a set of data files for each of the four macro-regions. Each file contains data sheets for each indicator used to assess the context of the macro-regions. As mentioned above, data has been organised separately for the appropriate NUTS regions and countries in each of the four macro-regions, and each indicator, or composite, corresponds to an excel sheet for each macro-region. The excel sheets have been grouped according to the four dimensions (macro-economic, macro-regional integration, competitiveness and political-institutional- governance). Furthermore, within each dimension, sheets have been grouped according to agreed aggregated compositions i.e. as composite indices).

An index page (usually on the first data sheet of each file) will enable users to directly find the data sheet for a named indicator (by clicking on an excel hyperlink).

A second set of excel files has been established for documenting the results of the benchmarking process. There is a file for each individual macro-region. This contains datasheets corresponding to indicators, grouped according to the above-mentioned four dimensions. Within these, they are further grouped according to the agreed aggregated composition of composite indices.

2.3 Macroeconomic Overview

In this chapter the overall macroeconomic state of the macro-region is assessed through analyses focused on three major themes: economic performance, employment, and social equality. The macroeconomic indicators are used to reflect the (socio) economic context of the individual economies as well as of the macro-region as a whole.

The table below provides an overview of the indices that are presented in this chapter:

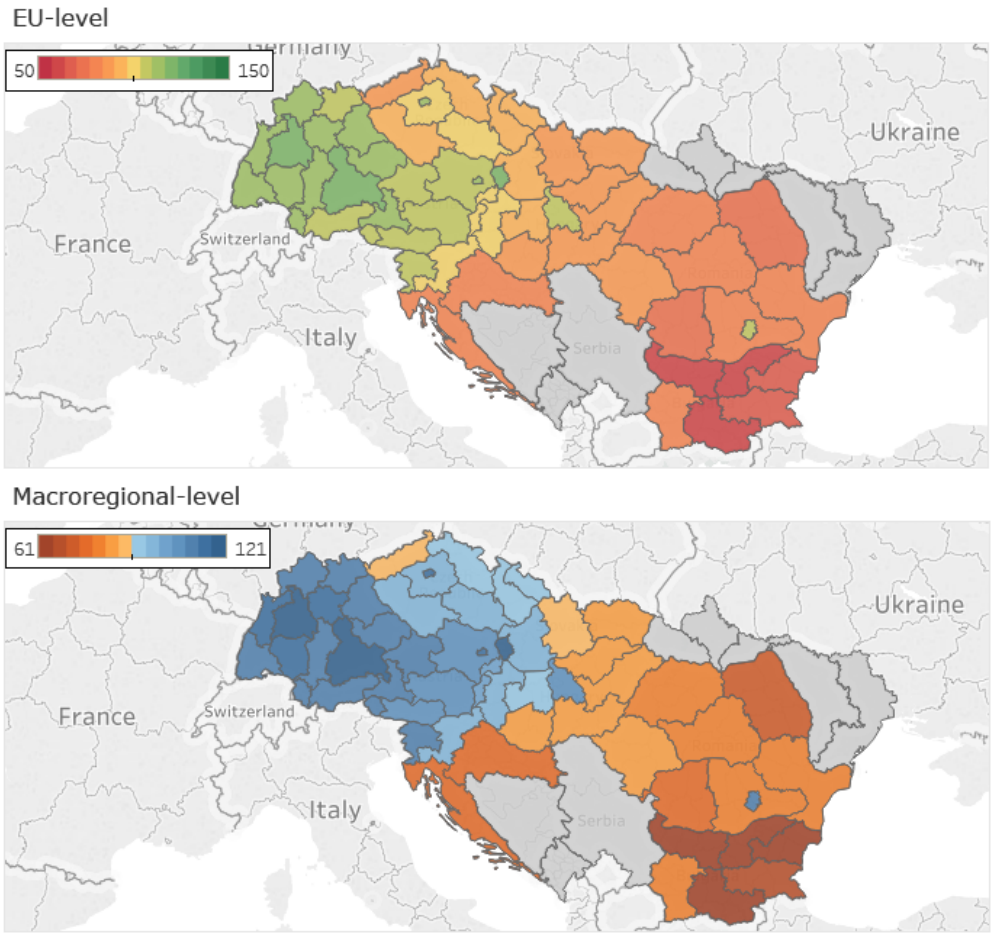
Table 2-5: Overview of macro-economic overview indicators

Composite	Economic performance indicators	Employment indicators	Social progress indicators
Components	GDP/capita	Employment index	Social progress index[10]
	GDP growth	Unemployment rate	
	Labour productivity	Youth unemployment	
		Long term unemployment	
		Economic activity rate	
		Employment rate	

[10] A composite index based on 53 indicators covering basic human needs, conditions for well-being and opportunity to progress

2.3.1 Economic Performance

Figure 2-1: Economic Performance by NUTS-2 in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Upper/Lower Regions of the Composite

CO..	NUTS LABEL	Economic Performance Index	GDP per Capita (at PPP)	GDP Growth	Labour Productivity
AT	Wien	114	120	99	123
	Burgenland	103	100	99	110
BG	Yugozapaden	82	84	107	56
	Severozapaden	61	30	107	47
CZ	Praha	115	125	126	95
	Severozápad	89	71	126	70
DE	Oberbayern	121	126	111	126
	Oberfranken	109	107	111	109
HR	Kontinentalna Hrvatska	78	66	91	77
	Jadranska Hrvatska	77	62	91	77
HU	Közép-Magyarország	106	105	143	70
	Észak-Magyarország	83	46	143	61
RO	Bucuresti - Ilfov	109	112	131	84
	Nord-Est	71	35	131	47
SI	Zahodna Slovenija	109	103	131	93
	Vzhodna Slovenija	98	77	131	85
SK	Bratislavský kraj	118	128	125	102
	Východné Slovensko	86	58	125	76

Text Box 2-1: Explanation of the indicator: 'Economic Performance'

To assess the economic performance on NUTS-2 regions inside the macro-region three indicators: regional Gross Domestic Product (GDP) per capita (at purchasing power parity), Real GDP growth rate and Labour Productivity have been bundled into one composite indicator: Economic performance index.

Regional gross domestic product (GDP) is used for the measurement and comparison of the economic activity of regions. It is the most important indicator used in the EU's regional policy for the selection of regions eligible for support under the „investment for growth and jobs goal" of the EU. GDP is the standard measure of the value of the production activity (goods and services) of resident producer units.[11] For this indicator regional data are available with a time lag of two years. Thus regional GDP data for the reference year 2015 have been released at the beginning of 2017. Real GDP is usually a proxy for economic prosperity. GDP per capita, however, does not reflect the equality of distribution of that prosperity, so it is not representative for many social issues.

The real percentage-growth rate of gross value added (i.e. Real GDP growth) allows the identification of the most and less dynamic regions in the EU and the non-EU regions inside the macro-region.

Labour Productivity has been calculated as Regional Gross Value Added (GVA) per employee. According to the OECD, Labour Productivity measures "how efficiently production inputs, such as labour and capital, are being used in an economy to produce a given level of output." Productivity is considered a major source of economic growth and competitiveness. It is used as a main indicator to assess a country's performance and to perform international comparisons. Over time a country's ability to raise its standard of living depends to a great extent on its ability to raise its output per worker. There are different measures of productivity.

An analysis of the composite indicator Economic Performance in the Danube macro-region shows a mixed picture regarding economic development of its regions. This diversity is given by the composition of the macro-region which includes some of the EU's traditionally weakest and strongest regions. For the years 2008 and 2014 the composite indicator exhibits the highest values for the most NUTS-2 regions in Germany and Austria, as well as those countries with capital cities as a separate NUTS-2 region, i.e. the Czech Republic (Praha), Slovakia (Bratislavský kraj), Romania (Bucuresti-Ilfov), Hungary (Közép-Magyarország), and Slovenia (Zahodna Slovenija). These regions show a high GDP per capita and a high productivity. The figure above clearly highlights that the internal difference in these countries towards its rural regions is significant. The highest GDP per capita and productivity in the Danube macro-region is to be found in the regions of Praha, Stuttgart, Karlsruhe, Oberbayern, Wien, Salzburg,

[11] https://www.oenb.at/en/Statistics/Standardized-Tables/Economic-and-Industry-Indicators/Economic-Indicators/nominal-gpd-growth-expenditure-side.html

Bratislavský kraj, and Bucuresti-Ilfov. These are urban centres characterised by qualified workforce and a high quality infrastructure.

The lowest benchmarking scores are found the regions Severozapaden, Yuzhen tsentralen, and Severen tsentralen in Bulgaria, followed by Nord-Est in Romania. These are rural regions with a high share of population in agriculture. The highest number of low performers are to be found in Bulgaria, Romania, Croatia, and Hungary. These are also regions with a low GDP per capita and low productivity. However all regions in the Czech Republic, Austria, Germany, Slovakia and most regions in Romania and Hungary made considerable progress and managed to reduce their gap to the EU-average regarding the considered indicators between 2008 and 2014. An important role in this process played the investment co-financed by the EU Cohesion Funds. Downturns registered the regions in Croatia and Bulgaria. Croatia was confronted with a six year recession following the economic crisis and experienced negative GDP growth over the entire period from 2009 to 2014. The long lasting recession was due to deep structural problems and difficulties in adjusting the economy after the initial recession. A turnaround was achieved only in 2015. Following the GDP contraction in 2009 Bulgaria could not get back to the previous high GDP growth rates. After five years with modest growth rates, below 2%, Bulgaria's economic growth accelerated only in 2015 and 2016. The other countries in the region recovered relatively quickly after the recession of the year 2009 and continued their successful growth path.

As the data available for the EU candidate, potential candidate and the other non EU countries for the investigated indicators (Table 2-6) differ from the data available for the EU-countries in the macro-region, these data have not been included in the composite indicator. The data are presented and analysed below. No comparable data were available for these countries at regional level and for the indicator labour productivity.

Table 2-6: GDP per capita in (potential) candidate and neighbouring countries

	GDP per capita (current prices) (EUR)		GDP per capita in PPS (%, EU-27=100)	
	2008	2014	2008	2014
Moldova	1,153	1,691	n/a	n/a
Ukraine	2,779	2,348	n/a	n/a
Montenegro	4,908	5,436	42	39
Serbia	4,586	4,635	36	35
Bosnia and Herzegovina	3,325	3,641	26	28

Source: Eurostat.

As the table shows these countries exhibit much lower levels of GDP per capita compared to the EU countries in the macro-region. While the country with the lowest GDP per capita, Bosnia and Herzegovina managed to rise its GDP per

capita in the period 2008 till 2014 by modest two percentage points, the GDP per capita in Montenegro, Serbia, and the Ukraine decreased in the same timeframe.

This was due to the modest GDP performance of these countries with low and negative growth rates (Table 2-7). Although Ukraine recovered after the GDP drop in 2009 caused by the economic and financial crisis, this development did not prove to be long lasting. The Ukrainian economy stagnated in 2012 and 2013 and it registered a negative development since 2014. The conflict in the Eastern part of the country had and has a negative economic impact.

All these countries need to implement structural reforms and improve their business and investment environment in order to boost GDP growth and make progress in the convergence process.

Table 2-7: GDP Growth rates in (potential) candidate countries, in %

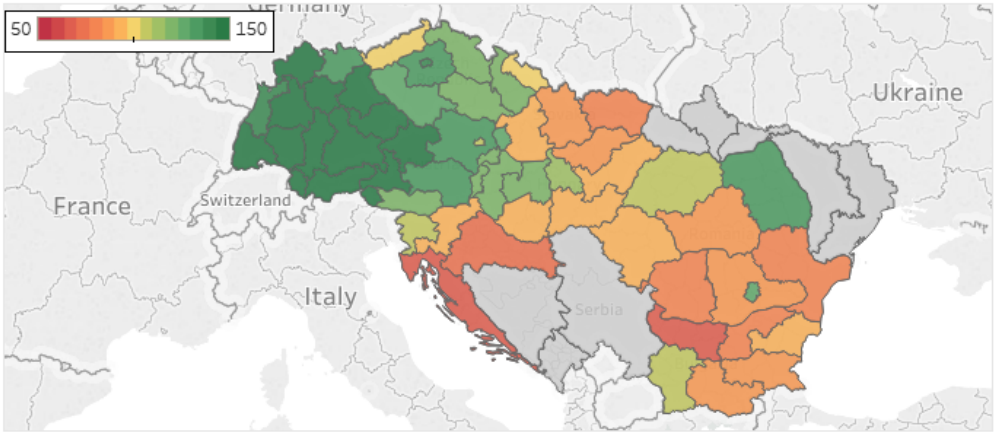
	2008	2009	2010	2011	2012	2013	2014	2015	2016
Moldova	7.8	-6.0	7.1	6.8	-0.7	9.4	4.8	-0.5	4.1
Ukraine	2.2	-15.1	4.1	5.4	0.2	0.0	-6.6	-9.8	2.3
Montenegro	6.9	-5.7	2.5	3.2	-2.5	3.3	n/a	3.4	2.5
Serbia	5.4	-3.1	0.6	1.4	-1.0	2.6	-1.8	1.8	4.7
Bosnia and Herzegovina	5.6	-2.7	0.8	1.0	-1.2	2.5	1.1	3.0	2.0

Source: Eurostat, ebrd, wiiw.

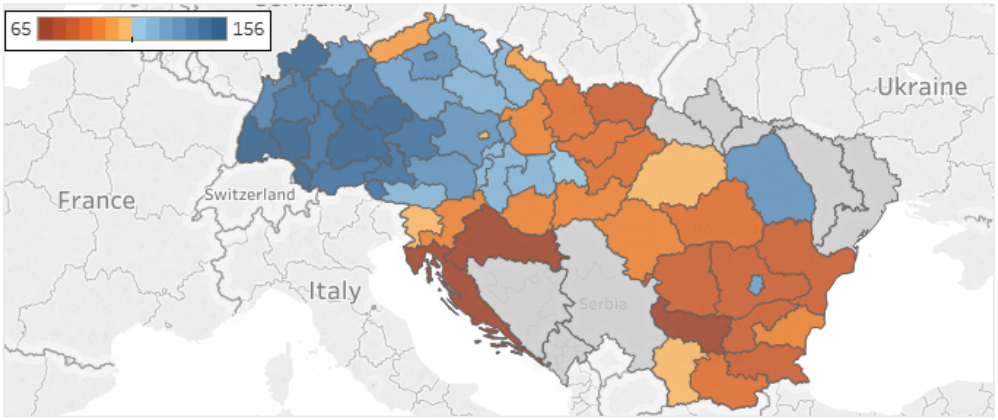
2.3.2 Employment

Figure 2-2: Employment by NUTS-2 in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components

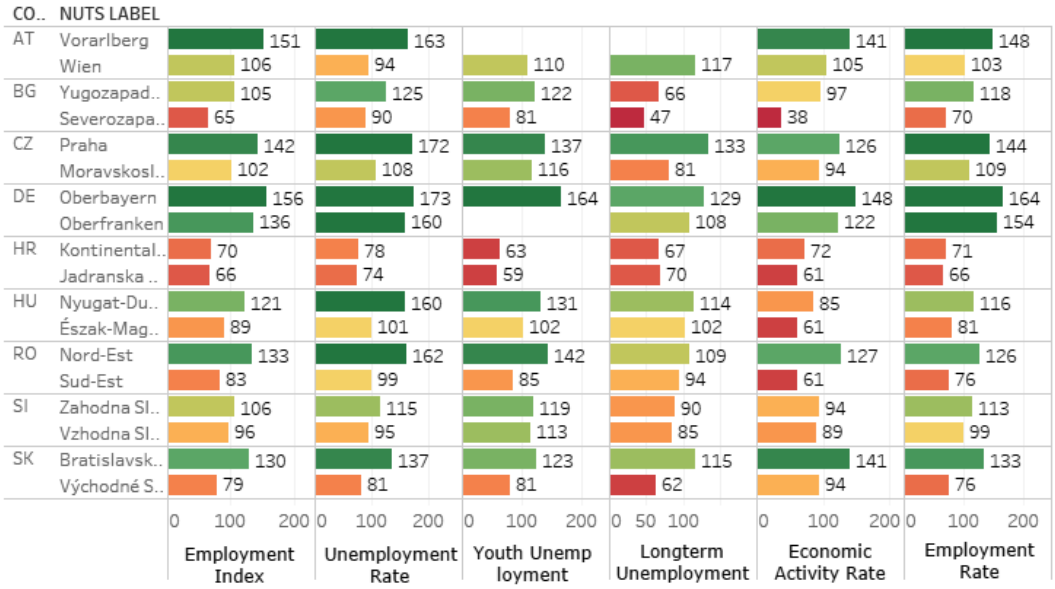
EU-level



Macroregional-level



Composites-Min/Max



Text Box 2-2: Explanation of the indicator: 'Employment'

Labour market statistics are crucial for many EU policies. There are significant labour market disparities within the EU territory as well as in candidate/neighbour countries. The first figure on the left shows the employment situation from the perspective of a composite index based on the following indicators: i) Economic activity rate, which describes an economy's ability to attract and develop a great share of human capital from its population; ii) Employment rate combined with Unemployment Rate, providing useful information about the ability to utilize available labour; iii) Youth unemployment rate, as an indicator showing the match between the existing skills within the young people and the employment opportunities offered by the regional economies; iv) and Long term unemployment rates, which indicate inefficient labour markets. More elaborate descriptions of the composite indicator can be found in the methodology.

In the Danube macro-region, Germany and Austria take the leading position on the employment composite indicator. All NUTS-2 regions in Germany and Austria lie above the EU-median. While in 2008 the NUTS-2 regions in Austria were initially leading the list, the German regions took the lead in 2015. Successful labour market policies are likely to have played a major role in delivering the good performance of the regions in these two countries including on dual vocational training, which plays an important role in reducing youth unemployment. The German regions even managed to reduce unemployment, youth unemployment and long-term unemployment rates over the period analysed. This achievement can largely be attributed to successful labour market policies that were implemented during the first five years of the first decade of the millennium.

In 2015 as well as in 2008, the lowest performers in the macro-region are the NUTS-2 regions of Croatia, Hungary, Bulgaria, and Romania. However, the regions of Hungary, Bulgaria, and Romania made considerable progress in reducing their gap to the EU-median when comparing the two years.

In 2008, a small number of regions in the new Member States performed above the EU-median (six regions in the Czech Republic and one region in Slovakia, Bulgaria, and Romania respectively). By 2015, the number of regions in the new Member States with a performance above the EU-median had increased significantly. Thus, in 2015 this group again includes all Czech regions, but also three Romanian regions, three Hungarian regions, one Slovenian, and one Bulgarian region. A look at the developments behind the data shows favourable dynamics of the employment and economic activity rates in the Czech and German regions, as well as in the most Hungarian and Romanian regions, and in half of the Slovakian regions reflecting a positive progress in the catching up process of the new EU Member States. However, an adverse development regarding these indicators is seen in half of the Bulgarian regions (due to the slow recovery following the economic and financial crisis), Croatia and Slovenia (due to the long lasting recession in both countries).

Unemployment rates declined in 2015 in the German and Hungarian regions. Although the data for 2015 show an increase of unemployment in Bulgaria, Austria, Romania, Slovenia, and Slovakia, all these countries except for Austria reduced their unemployment rate dramatically during 2016 and 2017. Moldova shows a low employment rate, but also a low unemployment rate, which may be due to the high migration rate.

As for the EU candidate, potential candidate and the other non EU countries for three of the above indicators (Table 2-8) the definitions differ from those for the indicators available for the EU-countries in the macro-region, these countries have not been included in the composite indicator. The data are presented and analysed below.

Table 2-8: Employment and Unemployment in (potential) candidate and neighbouring countries

	Economic activity rate		Unemployment		Youth unemployment		Long term unemployment		Employment rate	
	2008	2015	2008	2015	2008	2015	2008	2015	2008	2015
Moldova	49.0	46.9	4.0	4.9	11.2	12.8	1.2	1.5	n/a	n/a
Ukraine	67.8	66.3	6.4	9.1	13.3	22.4	1.2	2.1	n/a	n/a
Montenegro	61.2	62.6	16.8	17.5	n/a	37.6	13.4	13.6	50.8	51.4
Serbia	62.7	63.7	13.6	17.6	35.2	43.2	9.7	11.3	53.7	52.1
Bosnia and Herzegovina	53.5	54.6	23.5	27.9	47.5	62.3	20.3	22.8	40.7	39.2

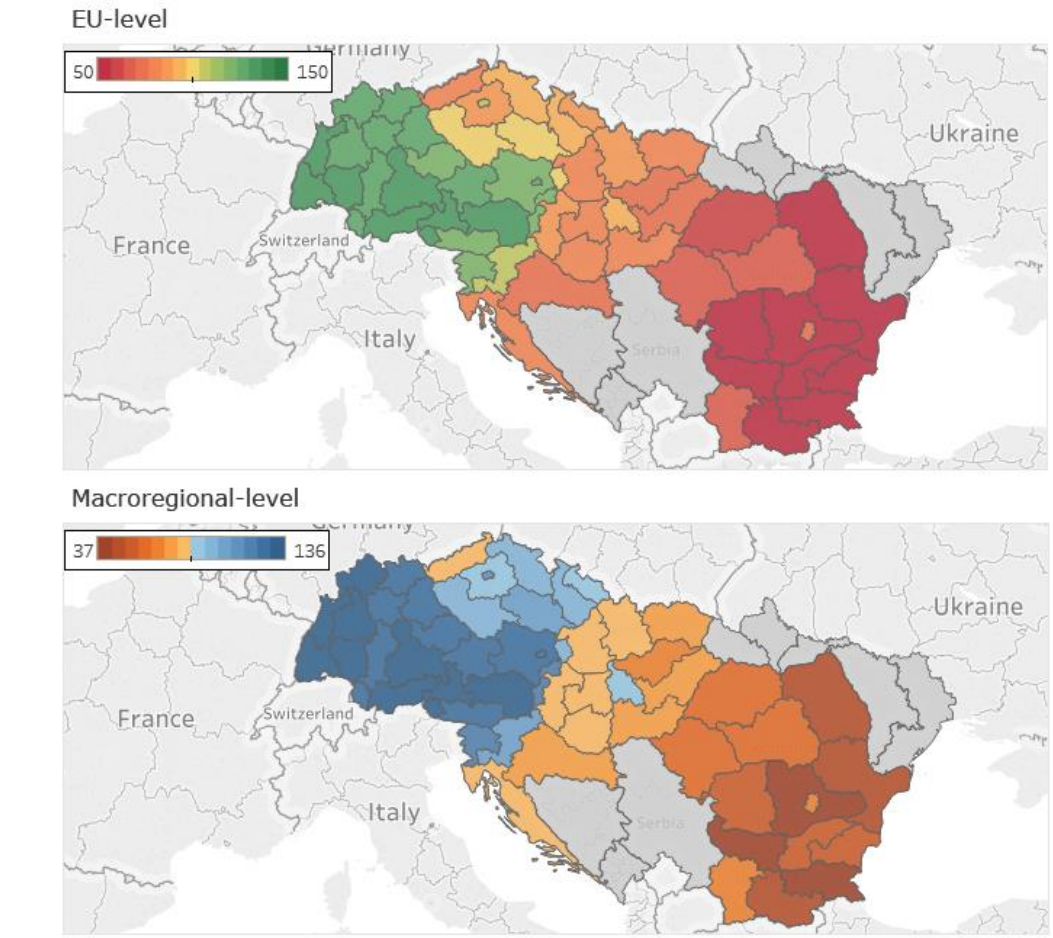
Source: Eurostat.

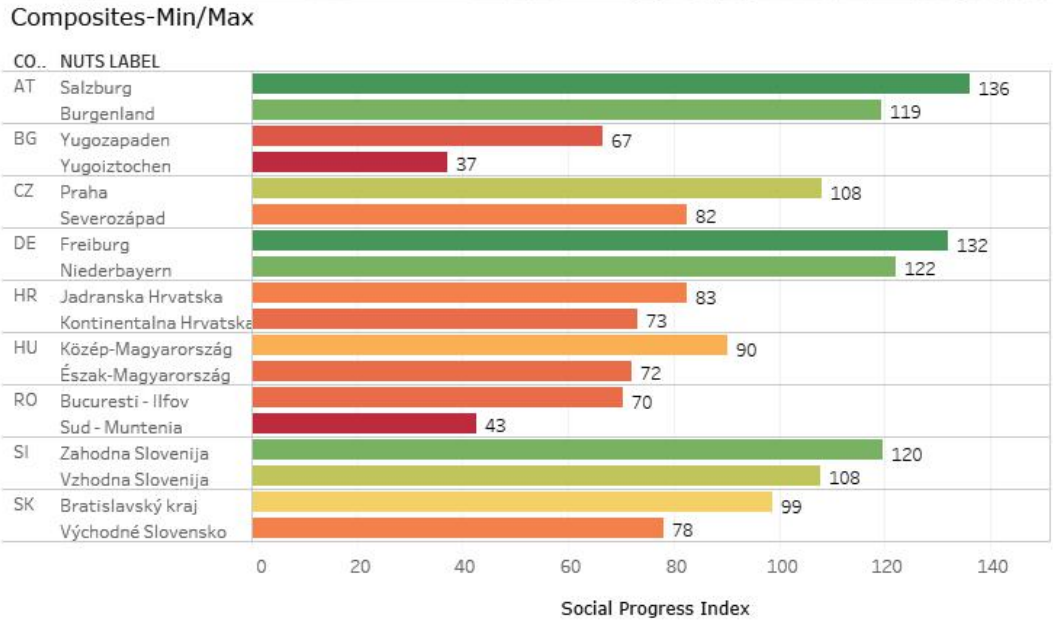
While for Moldova and the Ukraine the unemployment, youth unemployment and long-term unemployment are relatively low, for the Western Balkan countries all these three indicators show high levels. Moreover, they also show a rising trend from 2008 to 2015 which hints to persistent structural problems on the labour markets of these countries. These may be due to a mismatch between the available qualifications and the requirements of the employers and also to an active informal job market. The economic activity and employment rates are relatively low, whereas a gender gap can be observed. These rates are significantly lower for women compared to men. This is due to the traditional role of women and low availability of childcare facilities in these countries. In Moldova unemployment is low due to the high migration of work force. In all Western Balkan countries and Moldova informal employment is high accounting to at least 30%.[12]

[12] International Labour Organization (2011): A comparative Overview of Informal Employment in Albania, Bosnia and Herzegovina, Moldova and Montenegro. URL: http://www.ilo.org/wcmsp5/groups/public/@europe/@ro-geneva/@sro-budapest/documents/publication/wcms_167170.pdf

2.3.3 Social Progress Index

Figure 2-3: Social Progress by NUTS-2 in 2016, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components





Text Box 2-3: Explanation of the indicator: 'Social Progress Index' [13]

The Social Progress Index measures the extent to which countries provide for the social and environmental needs of their citizens.
The Social Progress Index from 2016 bases on fifty-three indicators that cover the fields of Basic Human Needs (Nutrition and Basic Medical Care, Water and Sanitation, Shelter, Personal Safety), Foundations of Well-Being (Access to Basic Knowledge, Access to Information and Communications, Health and Wellness, Environmental Quality), and Opportunity to Progress (Personal Rights, Personal Freedom and Choice, Tolerance and Inclusion, Access to Advanced Education). A ranking of the values of Social Progress Index shows the relative performance of the countries included. For the purpose of this Task, this index has been re-scaled this report's format.

There is a correlation between the level of economic development and social progress. Thus the regions with the highest GDP per capita such as NUTS-2 regions in Austria and Germany are also the regions where the Social Progress Index takes the highest scores. The best performers are the NUTS-2 regions Salzburg and Tirol in Austria, with the highest scores (benchmarks above 130). They are followed by the other Austrian regions and the German NUTS-2 regions with scores above 119 points. The high performance of these regions is explained by high scores on 'Basic Human needs'. Additionally, Austrian regions show a high performance also for the area 'Opportunity'.

The lowest performers are found in Bulgaria (Severozapaden, Yugoiztochen, Yuzhen tsentralen) and Romania (Nord Est, Sud Est, and Sud Muntenia) with benchmarking below or about 65 points. The low performance in Romania can be tracked to the low values for all components of the composite index, of which particularly 'Environmental quality', 'Access to information and communication' as well as for 'Access to advanced education'. The low performing areas in Bulgaria register the lowest values for areas such as 'Personal Rights', 'Access to advanced education', and 'Access to information and communication'. These NUTS-2 regions are also the least developed regions in their countries.

A slight better performance regarding social progress than the Romanian and Bulgarian NUTS-2 regions show the NUTS-2 regions in Hungary, Croatia and Slovakia with scores between 72 and 99 benchmarking points). Czech Republic and Slovenia as the most advanced countries among the new Member States perform better with scores above 80 points. The results on social progress reveal a gap between the performance of urban centres and especially of the capital cities, such as Praha, Wien, Bucuresti Ilfov, and Közép Magyarország, and the rest of the country, where again, the correlation to economic growth is evident. The Regional Social Progress Index exists also in a global form and on a country basis. The global and regional version are however not comparable, and

[13] The index is published by the nonprofit organization Social Progress Imperative. A custom version for the EU regions has been developed in cooperation with the European Commission. See http://www.socialprogressimperative.org/custom-indexes/european-union/

the scores base further on a different scale. [14] Serbia and Montenegro score 72.42 and 70.69 (out of 100 points) on the Social Progress Index respectively. Moldova and the Ukraine show a lower performance compared to the above candidate countries with a value of the Social Progress Index of 66.63 and 68.17. For these countries the performance on the component Opportunity is significantly lower compared to the performance on the other two components, Basic Human Needs and Foundations of Wellbeing.

[14] The Global Social Progress Index has the same methodological framework as its regional counterpart used for the EU Member States. The scoring of the Regional and Global version are however not comparable due to a different normalisation. The provided values are therefore in the original Social Progress format, and not comparable to the benchmarked results. The scale of the original format is 0-100.
https://www.socialprogressindex.com/;
http://ec.europa.eu/regional_policy/sources/information/maps/methodological_note_eu_spi_2016.pdf

2.4 Macro-regional Integration

The emergence of the "new trade theory" (Krugman, 1979)[15] in late 1970 with its emphasis on economies of scale put economic integration in the centre of economic debate. According to this theory, companies in small countries tend to exhibit relatively high average costs, while companies in large countries can profit from lower average costs due to size advantages. [16]

As a result, regional integration represents an important national policy alternative for small economies in order to overcome the small size handicap. By joining a regional integration agreement, companies from a small domestic economy may enlarge and be better prepared to face competition from countries with larger domestic economies.[17]

However, while regional integration gives rise to new opportunities, new challenges may appear. These may take the form of strong restructuring at microeconomic level, with some companies disappearing and other companies growing bigger and becoming successful in international competition.[18] In the restructuring process, relatively large and strong companies overtake their weaker competitors. An important role in this respect play mergers and acquisitions involving companies from different countries. Foreign direct investment (FDI) represents thus a channel in the integration process. Companies with foreign participation, which are usually involved in vertical production networks, are also responsible for a large share of exports and imports. Integration may also lead to trade diversion and erosion of sovereignty.[19]

In the context of the EU's long-term objectives, this chapter provides a context on the territorial cohesion of the macro-region, which is one of the three cornerstones of Cohesion Policy next to economic and social cohesion[20] , as well as the degree to which the Single Market[21] is fulfilled within the macro-region.

For this analysis, various indicators have been chosen to provide a context of integration. The table below lists the chosen indicators. The macro-regional economic integration indicators chosen describe the intensity of cooperation,

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[15] Krugman, Paul R. (1979): Increasing returns, monopolistic competition, and international trade, URL: http://www.sciencedirect.com/science/article/pii/0022-1996(79)90017-5.

[16] Gustavson, Patrick & Koko, Ari (2004): "Regional Integration, FDI and Regional Development. European Investment Bank". In: *Papers of EiB-Conferences*, Vol. 9, No. 1, pp. 122, Luxembourg.

[17] Gustavson, Patrick & Koko, Ari (2004): "Regional Integration, FDI and Regional Development. European Investment Bank". In: *Papers of EiB-Conferences*, Vol. 9, No. 1, pp. 122, Luxembourg.

[18] Gustavson, Patrick & Koko, Ari (2004): "Regional Integration, FDI and Regional Development. European Investment Bank". In: *Papers of EiB-Conferences*, Vol. 9, No. 1, pp. 122, Luxembourg.

[19] https://www.globalpolicy.org/nations-a-states/political-integration-and-national-sovereignty-3-22.html

[20] Territorial Cohesion, http://ec.europa.eu/regional_policy/en/policy/what/territorial-cohesion/

[21] The European Single Market, https://ec.europa.eu/growth/single-market_en

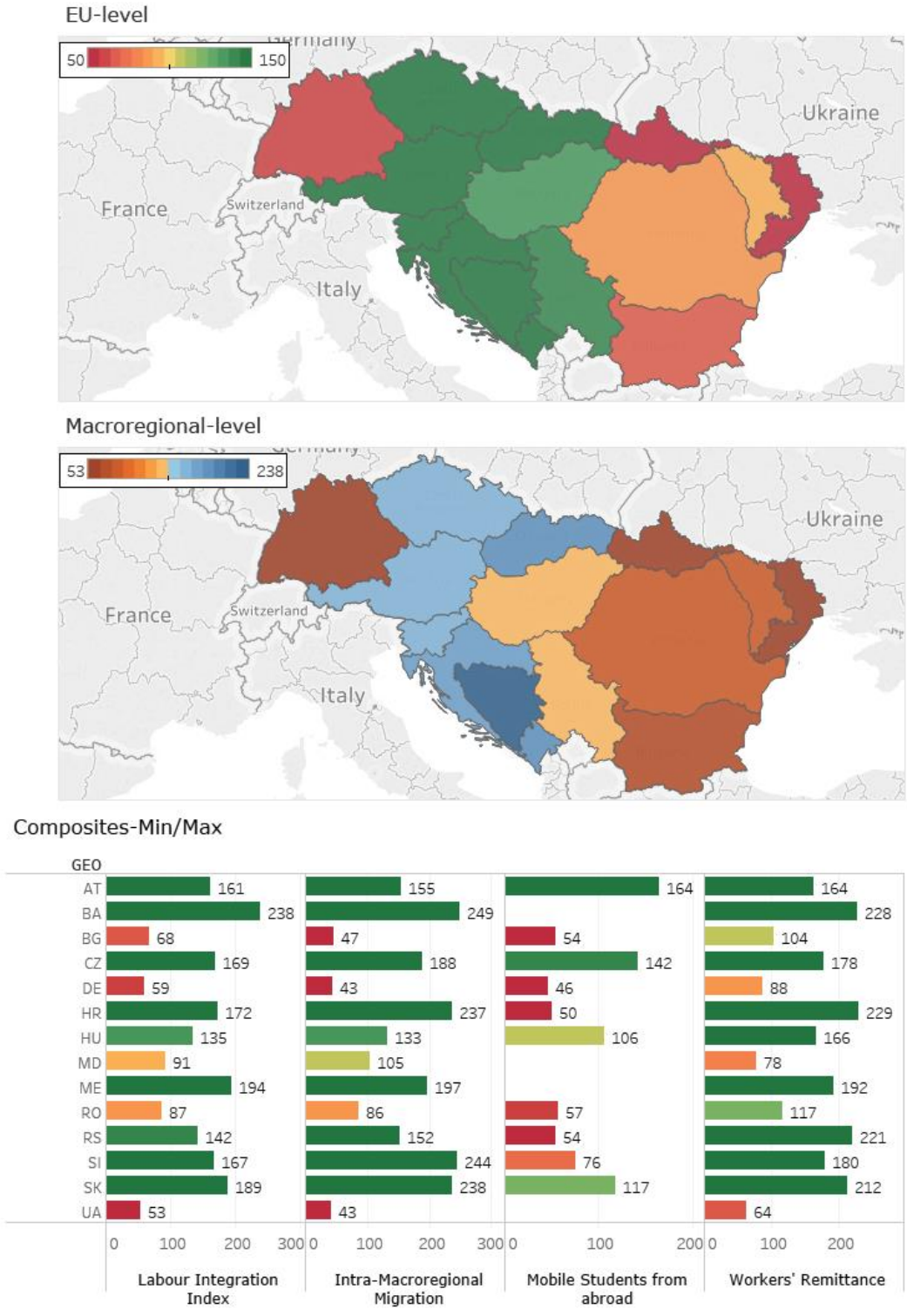
integration and (economic, cultural) exchange among the countries of the macro-region.

Table 2-9: Overview of Macro-regional economic Integration indicators

Composite	Components
Labour Integration	Intra macro-regional migration
	Mobile students from abroad
	Workers' Remittance
Trade Integration	Share of exports to macro-region out of total exports
Capital Integration	Inward FDI stocks
Energy Integration	Exports of energy
Accessibility	Multimodal
	Road
	Rail
	Air
Territorial Cooperation	Number of organisations participating in INTERREG IV-B

2.4.1 Labour Integration

Figure 2-4: Labour Integration by country in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components.



Text Box 2-4: Explanation of the indicator: 'Labour Integration'

To get a picture on the status of labour integration in the macro-regions three indicators are selected: a) Bilateral estimates of migrant stocks in 2013, b) Bilateral Remittance Estimates for 2015 using Migrant Stocks, Host Country Incomes, and Origin Country Incomes (millions of US$) (October 2016 Version) both indicators provided by the World Bank and the c) Share of mobile students from abroad by education level, sex and country of origin, provided by Eurostat have been used to create a composite indicator.

Data on Migration and remittances are based on the Migration and Remittances Factbook 2016 published by the World Bank. It provides a comprehensive picture of emigration, immigration, and remittance flows for 214 countries and territories, and 15 country groups, drawing on authoritative, publicly available data. The data are collected from various sources, including national censuses, labour force surveys, and population registers.

According to the "Recommendations on Statistics of International Migration" by the United Nations Statistics Division (1998), "long-term migrants" are persons who move to a country other than that of their usual residence for a period of at least one year, so that the country of destination effectively becomes their new country of usual residence. "Short-term migrants" are persons who move to a country other than that of their usual residence for a period of at least three months but less than one year, except for the cases where the movement to that country is for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment, or religious pilgrimage (UN Statistics Division 1998).

A new notion of remittances introduced in the sixth edition of the IMF Balance of Payments and International Investment Position Manual (BPM6)[22] is starting to be used by many countries (IMF 2010a). According to the new definition, personal remittances are the sum of two main components: "compensation of employees" and "personal transfers". Personal remittances also include a third item: "capital transfers between households," but data on this item are difficult to obtain and hence reported as missing for almost all countries.

Compensation of employees[23], unchanged from BPM5, represents "remuneration in return for the labour input to the production process contributed by an individual in an employer-employee relationship with the enterprise." The definition of "personal transfers," however, is broader than the old "worker's remittances" – it comprises "all current transfers in cash or in kind made or received by resident households to or from non-resident households." Therefore, "personal transfers" include current transfers from migrants not only to family members but also to any recipient in their home country. If migrants live in a host country for one year or longer, they are considered residents, regardless of their immigration status. If the migrants have lived in the host country for less than one year, their entire income in the host country should be classified as compensation of employees.[24]

[22] IMF (2013): Sixth Edition of the IMF's Balance of Payments and International Investment Position Manual (*BPM6*). URL: https://www.imf.org/external/pubs/ft/bop/2007/pdf/appx5.pdf

[23] *See footnote above*

[24] IMF (2013): Sixth Edition of the IMF's Balance of Payments and International Investment Position Manual (*BPM6*). URL: https://www.imf.org/external/pubs/ft/bop/2007/pdf/appx5.pdf

Share of mobile students from abroad enrolled by education level, sex and field of education refers to students from abroad enrolled in tertiary education (level 5-8) in percentage of all students.

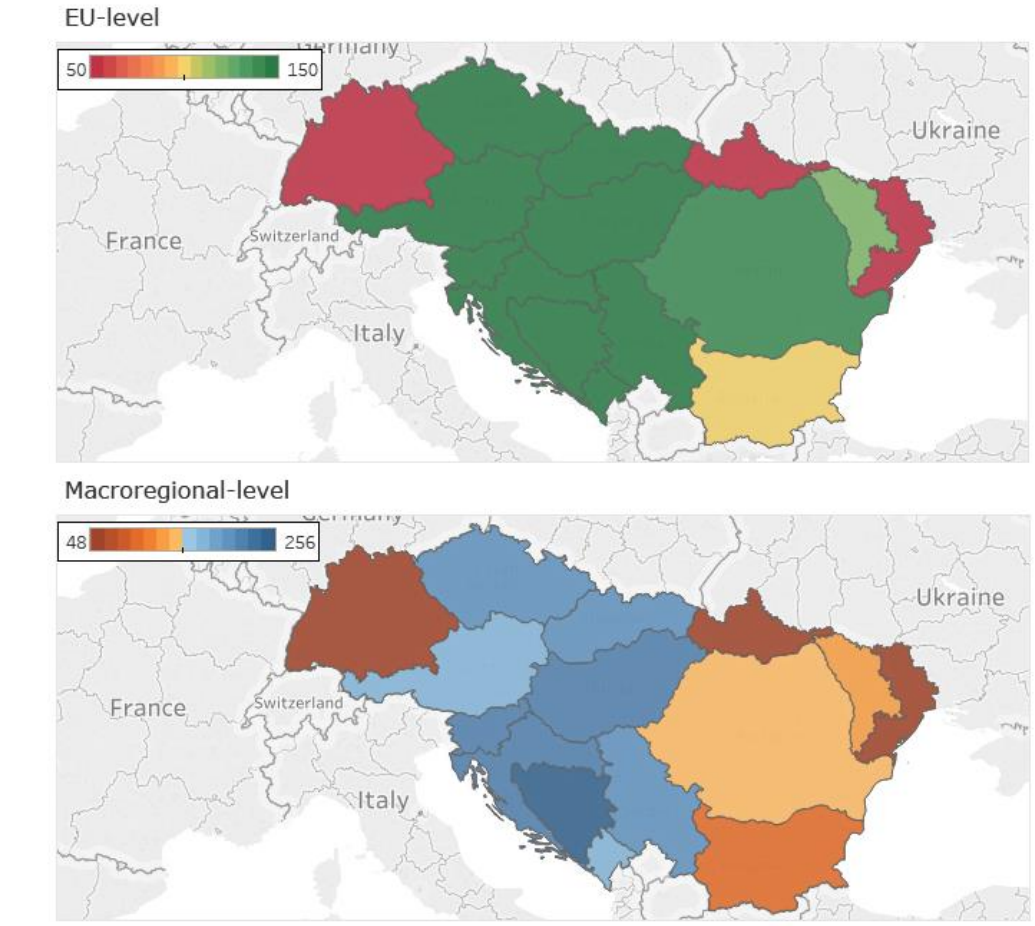
In the Danube macro-region the highest labour integration within the countries in the macro-region can be observed for Bosnia and Herzegovina, Slovenia, Croatia, Slovakia, Czech Republic, and Montenegro with values of the integration index above the average for the macro-region and well above the EU-median. Moldova and Romania register index values that are below that of the macro-region as a whole but still above the European median. The lowest labour integration with other countries in the macro-region is seen in Germany, Bulgaria and the Ukraine. Given that only a small share of both countries are part of this macro-region and that country-level data is used, the actual labour integration in the applicable regions may be higher.

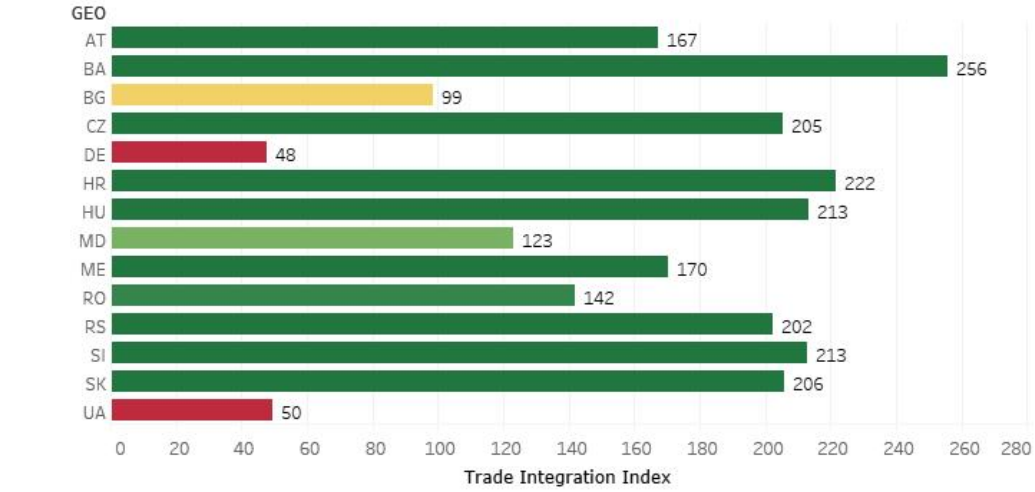
A close look at the migration, remittances and students' mobility flows inside the macro-region, discloses some interesting integration patterns. Statistical evidence shows that geographical proximity, historical and cultural ties and language advantages play an important role for labour integration. Family and friends networks that migrants already have in the destination country is another contributing factor (Taylor, 1986)[25]. Thus, there is a high degree of integration between the Czech Republic and Slovakia and to a lower extent between the Czech Republic and Germany; there is a high degree of labour integration between Germany and Austria and to a lesser extent between Germany and the Ukraine; integration is the highest between Hungary and Germany and to a lower extent between Hungary and Austria. Moldova is highly integrated with Romania and to a lower extent with Germany. Labour integration is high between Romania and Germany and to a lower extent also for Romania and Austria. Slovenia registers a high labour integration with Croatia, Germany and Austria. There is a high labour integration between Bosnia and Herzegovina and Montenegro on one hand and Serbia on the other hand. Serbia is at the same time highly integrated with Austria and Germany. Most labour migrants from the Ukraine work in Germany and to a lower extent in the Czech Republic and Moldova. The data show that the flow of migrants takes place to a larger extent from East (Hungary, Romania) to West (Germany, Austria) or from the new EU Member States to the old EU Member States, the flow of remittances follows an opposite direction. However, as the statistical evidence shows, in some cases historical and family ties and language advantages prevail in the migration decision. Examples in this respect are the Czech Republic and Slovakia, Moldova and Romania, Slovenia and Croatia and Austria and Germany. For Moldova and the Ukraine a high labour integration can be observed with the Russian Federation.

[25] Taylor, J. Edward, 1986. Differential migration, networks, information and risk. In: Stark, Oded (Ed.), Migration, Human Capital and Development. JAI Press, Greenwich, CT

2.4.2 Trade Integration

Figure 2-5: Trade Integration by country in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components.





Text Box 2-5: Explanation of the indicator: 'trade integration'

To measure Trade Integration, the analysis benchmarks a country's share of exports to the macro-region out of its total exports. The result of the benchmark thus indicates the degree to which a country is able to sell its goods in the macro-region, and what importance the single market concept has on a macro-regional scale.

Next to the high economic importance of the macro-region associated with a high indicator score, the 'functional' definition of a macro-region through a common geographic feature is manifested through economic evidence.

The data was obtained from the COMTRADE Database of the United Nations, which provides comprehensive trade data.[26]

Bosnia and Herzegovina, Croatia, Hungary, and Serbia present the highest trade integration within the countries in the Danube macro-region, with a share of the macro-region in total exports of these countries amounting to more than 50% in case of Bosnia and Herzegovina or close to 50% for the other countries. A similarly large share of the macro-region in total exports of 45% or more register the Czech Republic, Slovakia and Slovenia. All these countries are notably part of the supply chain for the German automobile industry.

A medium degree of integration can be observed for another group of countries (Bulgaria, Romania, and Moldova) with shares of macro-region's exports in total exports ranging from 30% in Bulgaria to about 37% in Romania. Germany is a main trade partner, for each country in the macro-region. Additionally, Czech Republic and Slovakia, Austria and Germany, Romania and Hungary, Serbia, Croatia and Montenegro on one hand and Bosnia and Herzegovina on the other hand, as well as Slovenia and Croatia exhibit a big weight in each other's exports. Romania has a big share in Moldova's exports. This is due to the traditional relations between these countries. Only about 8% of the German and 13% of Ukraine's exports go to the other members of the macro-region (each scoring below 50 on the benchmark). In 2015 compared to 2008, the degree of trade integration increased for both countries. Due to its large size, the German economy has a more diversified pool of trade partners compared to the small countries. Ukraine on the other hand is more integrated with the Commonwealth of Independent States (CIS). Trade integration within the macro-region increased in 2015 compared to 2008 in all countries except for Bosnia and Herzegovina, Montenegro, Serbia and Moldova. This points to a positive impact of EU accession (in 2007 for Romania and Bulgaria and 2013 for Croatia) on trade integration.

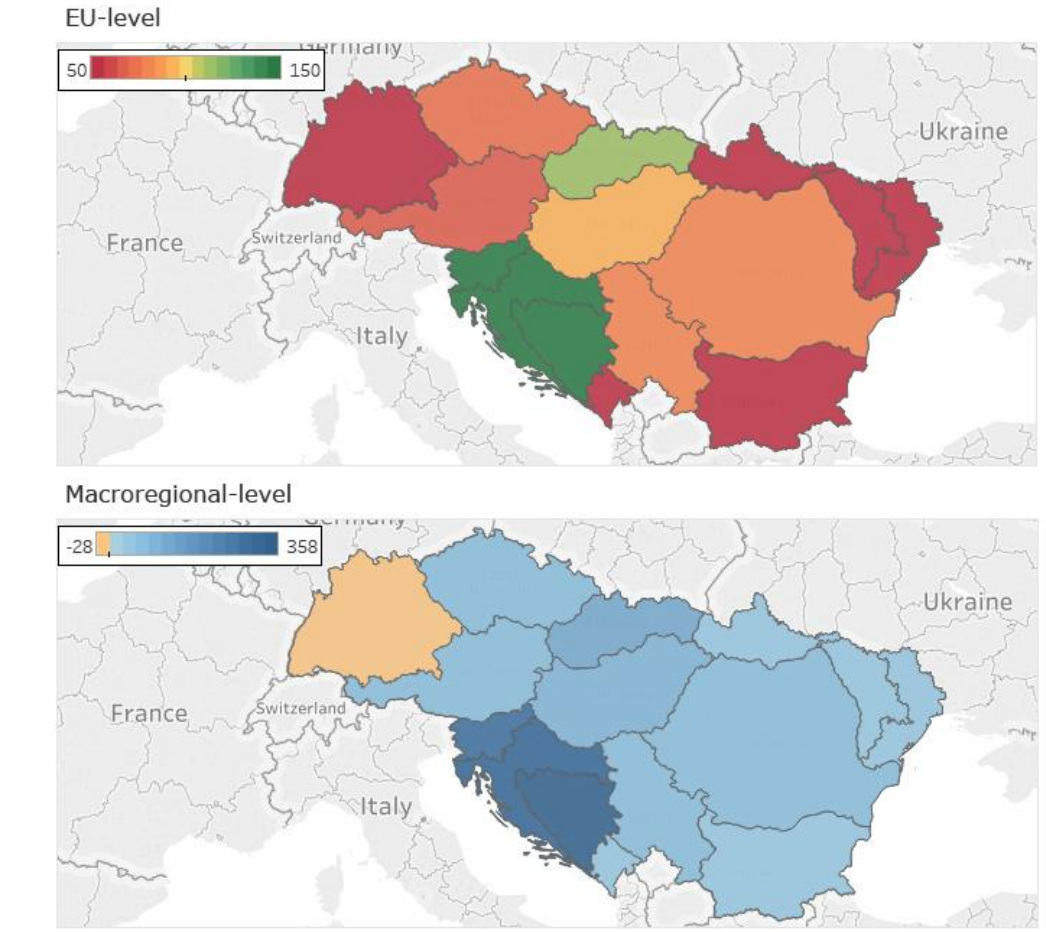
An interesting development showed by the data is the rise in the bilateral trade relation of the Visegrad countries (Poland, Czech Republic, Slovakia and Hungary) following their EU accession in 2004 as well as the rise in the bilateral

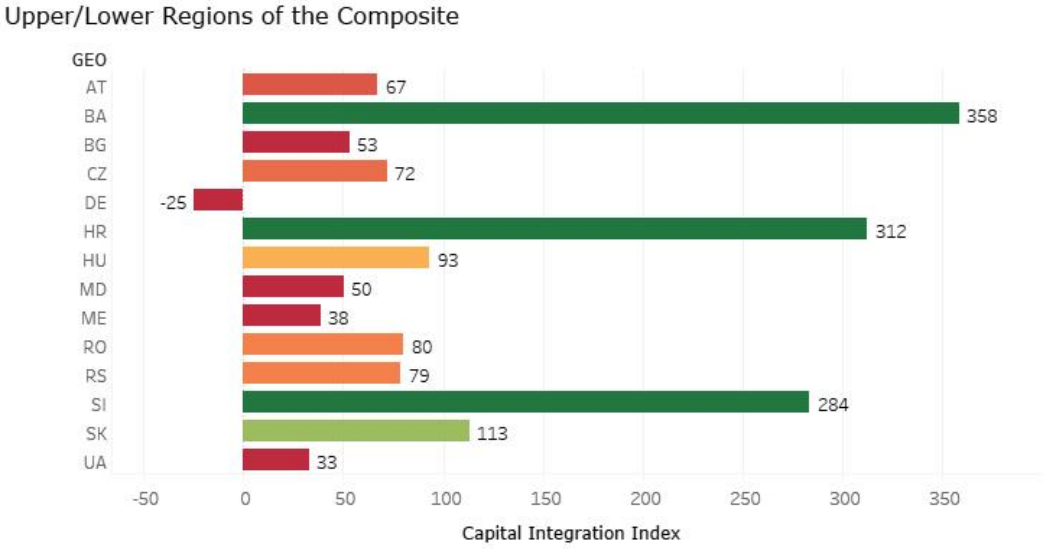
[26] UN COMTRADE, URL: https://comtrade.un.org/

trade relation of Romania and Bulgaria following their EU accession in 2007. Foster et. al. (2011) attribute this development to the rising engagement of the foreign investors in the region and the increase in intra-company trade, while Hornok (2010) underlines the importance of the elimination of non-tariff barriers.

2.4.3 Capital Integration

Figure 2-6: Capital Integration by country in 2012, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components.





Text Box 2-6: Explanation of the indicator: 'Capital Integration' [27] [28]

The Capital Integration among the countries of this macro-region is measured through foreign direct investment (FDI). The ability of a country to attract FDI indicates the economic attractiveness of a region (Grozea-Helmenstein et al, 2017). When using this concept, one has to differentiate between outward FDI (domestic companies investing in a foreign country) and inward FDI (foreign companies investing in the domestic country) as well as between flows (the annual stream of investments) and stocks (the aggregated volume of all past investments minus depreciation and repatriation) (Grozea-Helmenstein et al, 2017). For the underlying analysis inward FDI stocks of 2012 were therefore used, as these are in fact a moving, weighted average of flows that depreciate over time. The data have been provided by Eurostat.

Among various hypotheses aiming to explain the pattern of foreign direct investment, according to the classical theory of comparative advantage relative factor endowments and initial conditions are important factors in attracting FDI to some locations rather than others (Bhagwati, 1987)[1]. This is in line with the FDI pattern which can be observed in the macro-regions, with some countries being more attractive to foreign investors compared to others.

The Capital Integration is measured on a country level. When considering the integration of countries that are only partially in the macro-region, the inward FDI stock (and thus benchmarking) of only the applicable regions may be higher if one assumes that inward FDIs are higher in closer geographical proximity (Folfas, 2011).

The Danube macro-region shows a below EU-average (2.91) level of capital integration with a share per partner amounting to 2.70; this results a benchmarking score of 88.29. Bosnia and Herzegovina, Croatia and Slovenia account for the largest share of FDI stocks from the other partners in the macro-region (above 60% of total FDI stock in the country, scoring 358, 312 and 283 respectively). Slovakia stands also strong with a share of about 40% and benchmark of 113. Germany has by far the lowest share of FDI from the other partners in the macro-region, only 3%, followed by the Ukraine with about 19%. In the case of Germany, the actual inward FDI stock in the regions which are part of the Danube macro-region may be higher, as all of Germany's FDI stock is included in the benchmarking (which also explains the negative score). Hungary, Romania, Serbia, the Czech Republic, and Austria are placed in the middle, with shares ranging from 36 to 29% (scores of 93–67). Bulgaria, Moldova and Montenegro exhibit shares of FDI from the partners in the macro-region in total inward FDI ranging from 20 to about 25% (scores of 53-38). With regards to

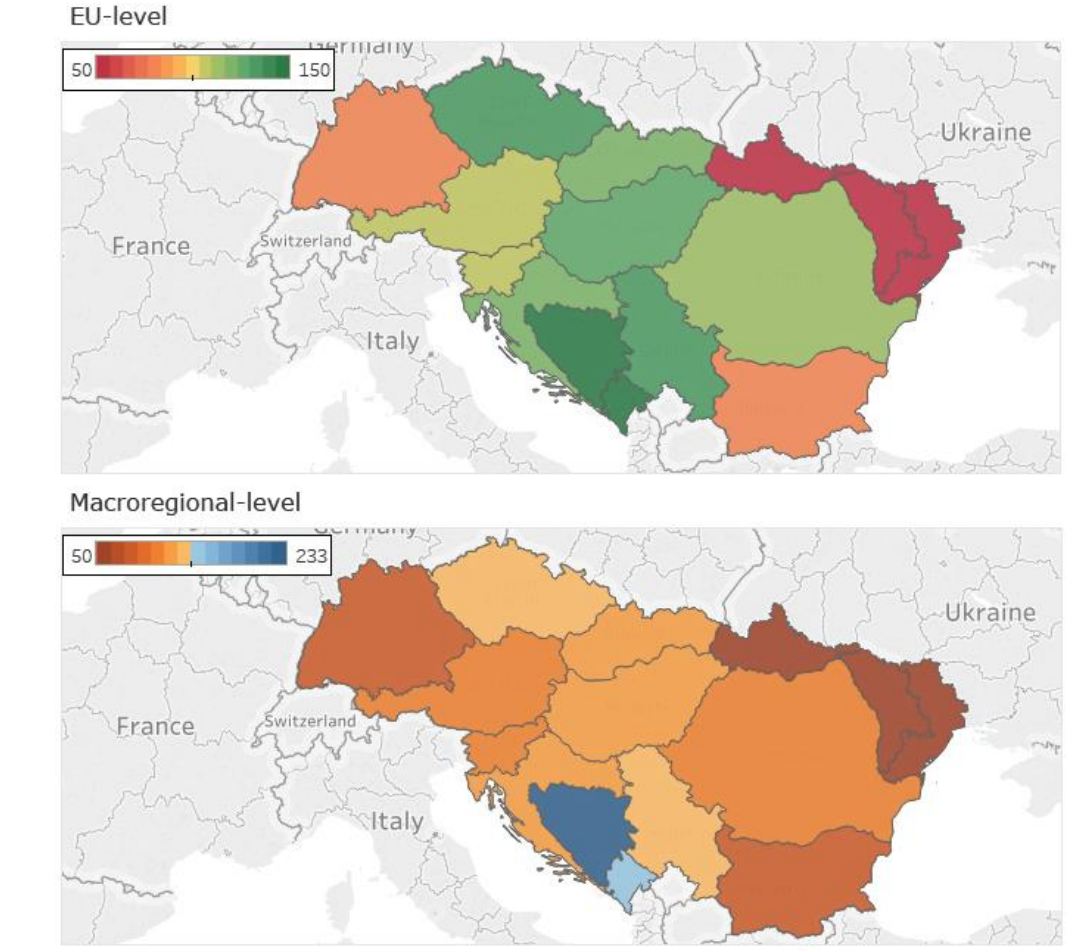
[27] Folfas, P. (2011), *FDI between EU Member States: Gravity models and Taxes*, http://www.etsg.org/ETSG2011/Papers/Folfas.pdf

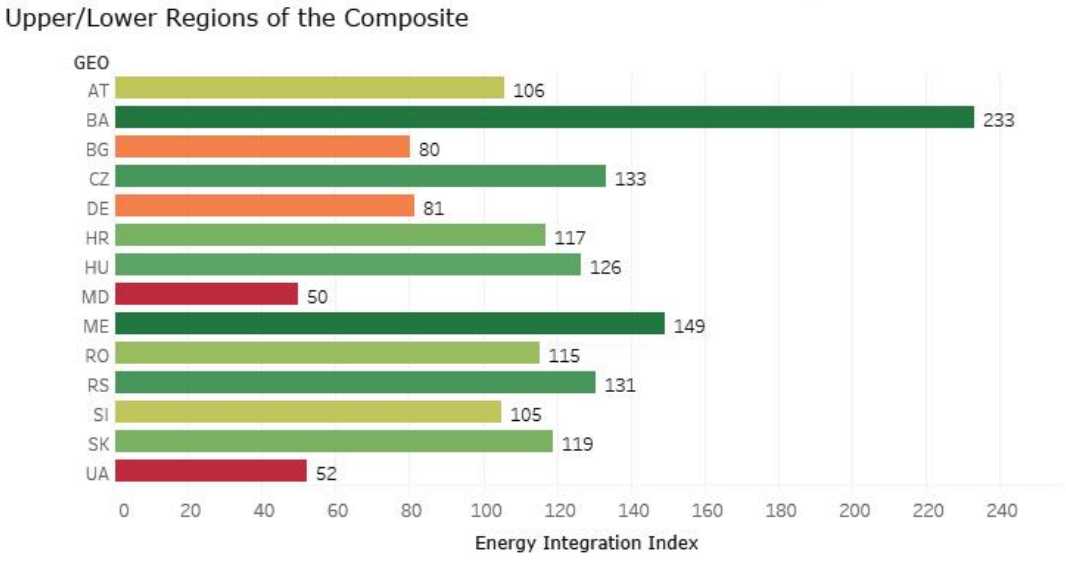
[28] Grozea-Helmenstein, D., G. Grohall, C. Helmenstein (2017): Convergence and Structural Change in Romanian Regions, in Larisa Schippel, Julia Richter, Daniel Barbu (2017): Rumäniens "Rückkehr" nach Europa. Versuch einer Bilanz. - Wien: new academic press.

Moldova, the high benchmark despite no membership or (potential) candidate status to the EU is due to the existing association agreement.

2.4.4 Energy Integration

Figure 2-7: Energy Integration by country in 2015. The top figure shows an EU-wide comparison, while the middle map illustrates the indicator on the macro-regional scale. The bottom figure shows the benchmarked indicator values for each country.





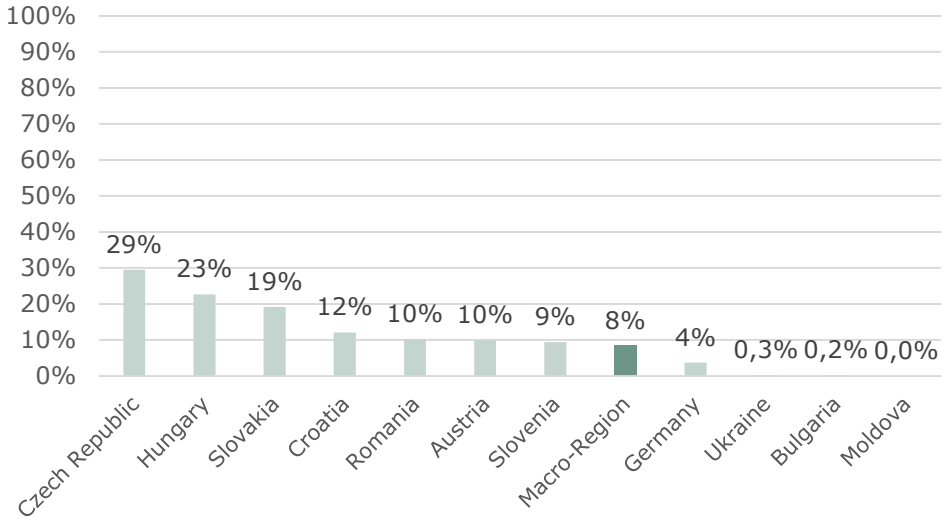
Text Box 2-7: Explanation of the indicator: 'Energy Integration'

The energy integration indicator is defined as the energy export share that stays within the macro-region. Country-level data from Eurostat for the latest available year (2015) is used (Data table Exports - all products - annual data [nrg_131a]). Energy exports considered include all types of energy products: solid fuels, oil, gas, electricity and renewables.
The indicator for a specific country is constructed as follows:
1. Ratio between the macro-regional exports of the country and total energy exports is calculated.
Total exports = Energy export in tonnes of oil equivalent (toe) from the country to all trading partners
Macro-regional exports = energy products export in toe from the country to trading partners within the macro-region.
2. This ratio is divided by the number of partners in the macro-region, to obtain an average share of exports per partner in the macro-region.
3. Benchmark values are set-up in the same way as the integration indicators for macro-regional level, for EU-level energy trade integration, defined as the (per partner) share of exports to other EU countries as compared to all exports to the world.
This allows the degree of integration within each macro-region to be benchmarked against the degree of integration in the EU as a whole.
NOTE: Since the indicator is defined at the country level, it is not known what exact proportion of trade occurs within the macro-region, hence this indicator is a proxy.

Another area reflecting the degree of macro-regional integration is energy trade. The indicator selected to represent energy trade is the share of energy exports that goes to the other countries in the region (as proportion of total energy exports). This reflects the preferred partners for energy trade. The higher proportion exported to nearby countries or regions can indicate closer ties between the areas. This indicator does not directly reflect energy independence of the region, but is rather intended to show the directions chosen for outgoing trade.

The Danube macro-region countries show a mixed picture regarding their shares of exports that go to other countries in the macro-region. Around 10% of all energy products produced in the region are exported to other countries in the macro-region. Although Germany is the second largest energy exporter in the EU after United Kingdom, its exports to the other Danube macro-region countries amount only to 4% of its total exports. Countries like Bosnia and Herzegovina and Montenegro register with 100% and 40% respectively, the highest shares of their exports to the other countries of the macro-region. Similar to Serbia and Croatia the countries of former Yugoslavia are highly integrated with each other. Also exporters, like the Czech Republic, Serbia and Hungary export most within region, 29%, 28% and 25% respectively, as shown in Figure 2-8.

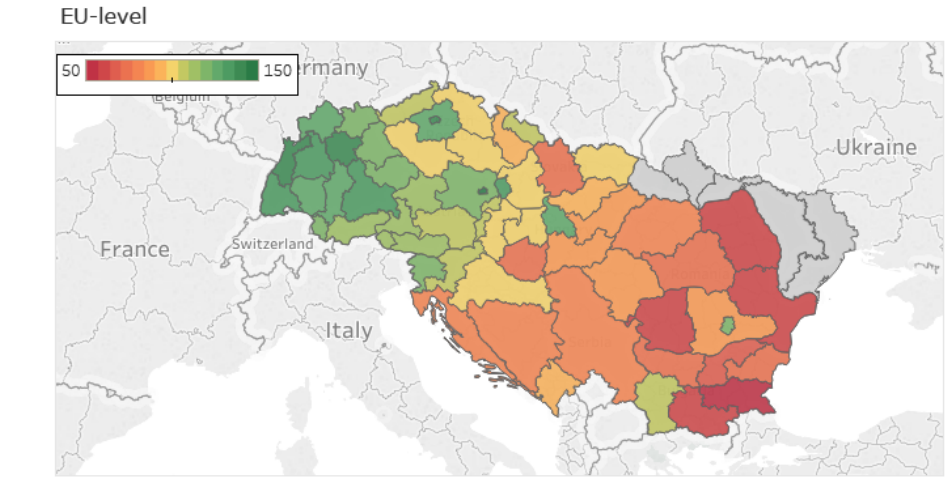
Figure 2-8: Share of energy products exported by Danube macro-region countries that are traded within the region

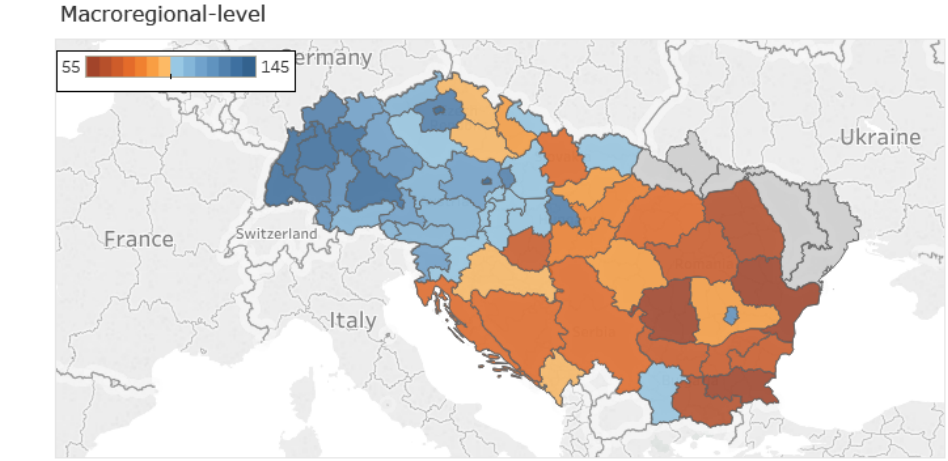


The Danube macro-region shows a good performance on energy integration. Bosnia and Herzegovina, Montenegro, Serbia, Czech Republic, and Hungary show the highest level of integration within the macro-region with per partner shares and benchmark values above the macro-region (1.67, benchmark 122) and the European (0.62) average. The lowest integration display Moldova and Ukraine with a benchmark value around 50, followed by Bulgaria with a benchmark value around 80. This was due to the high integration and traditional relations between these countries and the Russian Federation.

2.4.5 Accessibility Potential

Figure 2-9: Accessibility Potential by NUTS-2 in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components





Composites-Min/Max

CO..	NUTS LABEL	Multimodal Accessibility (travel time)	Road Accessibility (travel time)	Rail Accessibility (travel time)	Air Accessibility (travel time)
AT	Wien	145	121	122	150
	Burgenland	105	114	108	119
BA	Bosnia and Herzegovina	78	65	63	87
BG	Yugozapaden	104	80	67	110
	Yugoiztochen	55	83	63	52
CZ	Praha	139	124	116	144
	Stední Morava	94	109	110	82
DE	Karlsruhe	138	148	150	122
	Oberfranken	118	143	130	107
HR	Kontinentalna Hrvatska	99	106	95	101
	Jadranska Hrvatska	80	90	78	85
HU	Közép-Magyarország	128	109	105	132
	Dél-Dunántúl	70	99	89	65
ME	Montenegro	95	62	58	104
RO	Bucuresti - Ilfov	121	79	69	128
	Sud-Est	60	68	62	60
RS	Serbia	80	87	72	85
SI	Zahodna Slovenija	117	115	110	119
	Vzhodna Slovenija	106	113	105	107
SK	Bratislavský kraj	131	119	115	135
	Stredné Slovensko	76	102	99	69

0 50 100 150

Text Box 2-8: Explanation of the indicator: 'Accessibility Potential'

The concept of accessibility refers to the ease of getting around from place to place (Saleem and Hull, 2012)[29]. Hull (2011) identifies two fields of accessibility: the first refers to the ability to travel and is based on the classical location theory. This shows the direct correlation between changes in the transport system (e.g. transport costs) and journey length (Banister, 2002; Ney, 2001; Geurs and van Wee, 2006). The second focuses mainly on the "ease of reaching" a number of daily activities at different destinations. The first conceptualisation of accessibility has been more intensively studied by the academic literature. This conceptualisation of accessibility forms also the basis of the indicators which are investigated below.

These assess the accessibility potential measured as an index[30] related to the ESPON average for various transport modes such as road, rail, air, and multimodal transport. Multimodal transport refers to the transportation of goods under a single contract, but carried out with at least two different means of transport (e.g. rail, sea and road), where the carrier is liable (in a legal sense) for the entire carriage. In order to achieve a feasible number of regions, the NUTS-3 regions were aggregated to a NUTS-2 level, by averaging the values of the aggregated regions.

In the Danube macro-region, there is a notable regression of accessibility from its north-western regions to its south-eastern regions. The best accessibility values for all transport modes are found in the regions of Germany, followed by those in Austria. The regions in the Czech Republic and Slovakia exhibit lower accessibility values compared to those in Germany and Austria. A similar accessibility by all modes can be found in Hungary and Slovenia. The lowest accessibility in the macro-region for all transport modes are found in the regions in Bulgaria, Romania and Croatia. While many regions in these countries are quite well accessible by air and by multimodal transport, and the difference between this group and Hungary and Slovenia is not large, the accessibility of the regions in Bulgaria, Romania and Croatia by road and rail is much lower and the differences to the other countries are greater.

Inside the countries accessibility differs quite strongly from one region to another in all countries for all transport modes. The lowest disparities among these regions, however on a low level, can be observed in Bulgaria and Romania regarding road and rail accessibility. Due to the implementation of successful investments co-financed through the EU Cohesion Funds accessibility by road and rail improved significantly in 2014 compared to 2011 in most regions in all countries of the macro-region. At the same time, the accessibility by air and by multimodal transport declined slightly in all countries of the macro-region.

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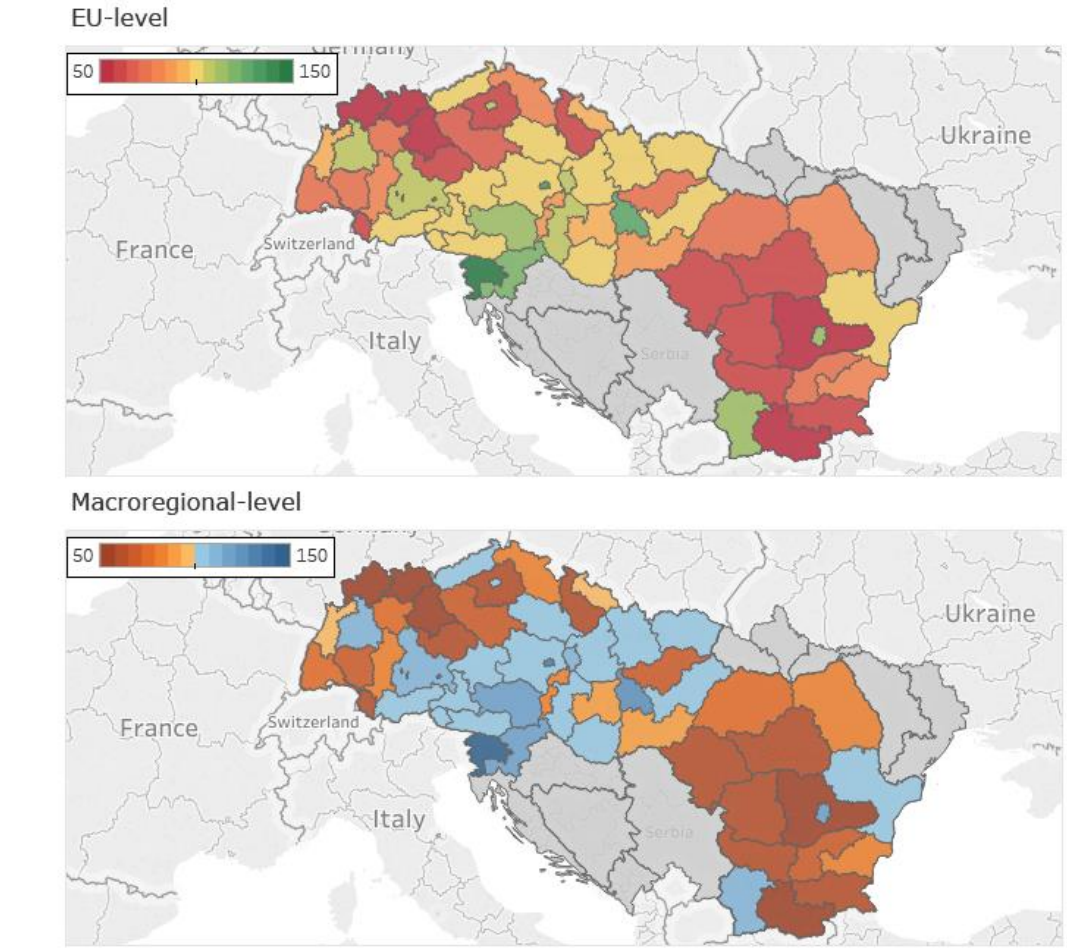
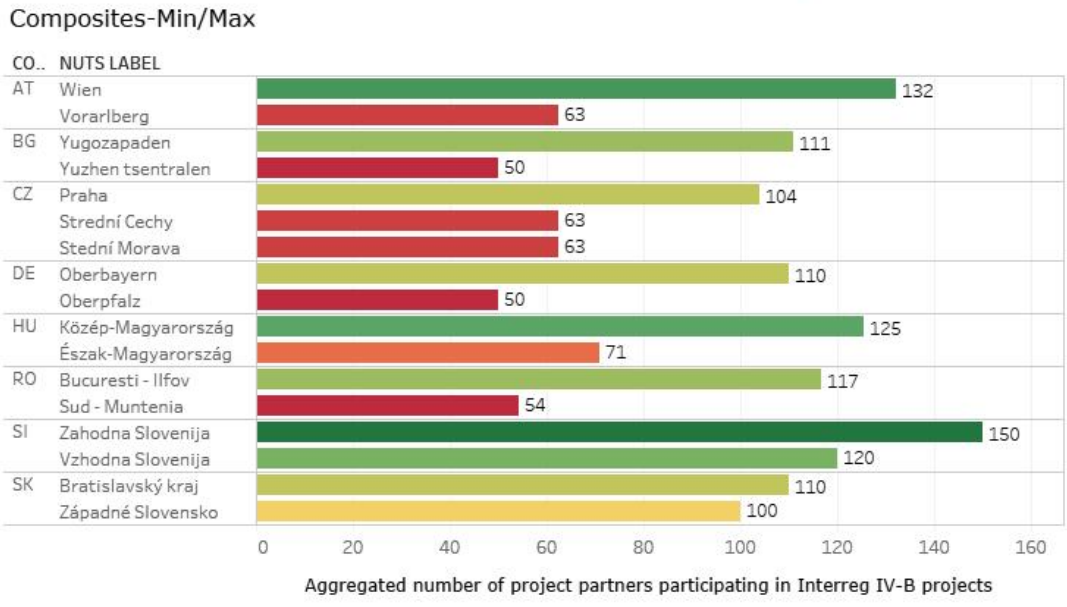
[29] Saleem Karou, Angela Hull (2012): Accessibility Measures and Instruments, in Angela Hull, Cecília Silva and Luca Bertolini (Eds.) Accessibility Instruments for Planning Practice. COST Office, pp. 1-19. URL: http://www.accessibilityplanning.eu/wp-content/uploads/2013/01/Accessibility-Measures-and-Instruments-R.pdf

[30] For each NUTS-3 region the population in all destination regions is weighted by the travel time to go there. The weighted population is summed up to the indicator value for the accessibility potential of the origin region.

2.4.6 Transnational Cooperation

Figure 2-10: Territorial Cooperation by NUTS-2 in 2011, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components





Text Box 2-9: Explanation of the indicator: 'Transnational Cooperation'

Transnational cooperation[31] is a major aspect of territorial cohesion, which is in turn one of the three cornerstones of the EU's Cohesion Policy as well as the EU's enlargement policy. A major tool for the EU to facilitate and promote cooperation is the INTERREG programme as part of the European Structural and Investment Funds, which is currently in its fifth generation (INTERREG V).
Transnational cooperation represents a tool to support economic development and competitiveness, territorial, economic, and social integration, and to foster good neighbourhood relations.[32] It is also a tool which contributes to the reduction of negative border effects between weaker and stronger regions, which promotes city networking, and supports the adoption of solutions to address environmental challenges.[33] Territorial cooperation takes place in the framework of projects, programmes, and regions. It has been steadily expanding over the last years including also many unsupported/spontaneous movements. These take the form of city networks, and non-EU-supported, macro-regional and country-specific types of co-operation.[34] However, territorial co-operation has still many weaknesses that need to be addressed.

The indicator on cooperation builds on the number of organisations participating in INTERREG IV-B projects as a proxy for macro-regional cooperation, which covers the time span of 2007-2013. INTERREG IV-B projects occur under programmes which have a transnational geographic scope, such as the Alpine, Danube, or Central Europe. The data covers however only the time span between 2007 and January 2011.

The Danube macro-region has a diverse degree of transnational cooperation, as measured by the number of participating organisations, including two bottom-performing regions (Oberfranken in Germany and Yuzhen Tsentralen in Bulgaria) as well as the EU's top-performer Zahodna Slovenija with 118 participating organisations (score of 150). The NUTS-2 regions with capital cities were in 2012 generally stronger engaged in territorial cooperation than the other regions. This may be due to the availability of know-how and better infrastructure in the capital cities, which usually also host more organisations than other regions do. Geographically, most organisations were involved from the regions of the Alps stretching over to the east end of Slovakia and Hungary. The seemingly strong performance of these regions is in parts explained by the fact that these regions were in the geographic scope of three transnational programmes (Alpine Space, East-Central Europe, and South-East Europe), while the South-eastern parts of this macro-region were only covered by the South-

[31] Collaboration between administrative bodies and/or political actors in Europe and beyond, representing their respective territories, which can also engage other stakeholders as long as their involvement is within the same institutionalized framework (2013, European Territorial Cooperation as a Factor of Growth, Jobs and Quality of Life, ESPON).

[32] https://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/TERCO/TERCO_Interim-Report-and-Annex_FINAL.pdf

[33] http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/TERCO/Final_Report/TERCO_FR_ExecutiveSummary_Dec2012.pdf

[34] http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/TERCO/Final_Report/TERCO_FR_ExecutiveSummary_Dec2012.pdf

East Europe programme. Furthermore, a dedicated transnational programme for this macro-region was only initiated under INTEREG V.

In the German NUTS-2 regions belonging to the Danube macro-region there was a total of 102 organisations, in Austria 206 organisations, in Slovenia 171 organisations, in Hungary 141 organisations, in Romania 84 organisations, in the Czech Republic 83 organisations, in Slovakia 74 organisations and in Bulgaria 52 organisations, which were participating in 2012 in Interreg IVB projects. The NUTS-2 regions with the highest number of organisations involved in Interreg IVB projects were: Zahodna Slovenija with 118 organisations, Wien with 80 organisations, Közép-Magyarország with 66 organisations, Vzhodna Slovenija with 54 organisations, and Bucureşti – Ilfov with 47 organisations. No data were available for Croatia, (potential) candidate countries, Moldova and the Ukrainian regions.

2.5 Competitiveness

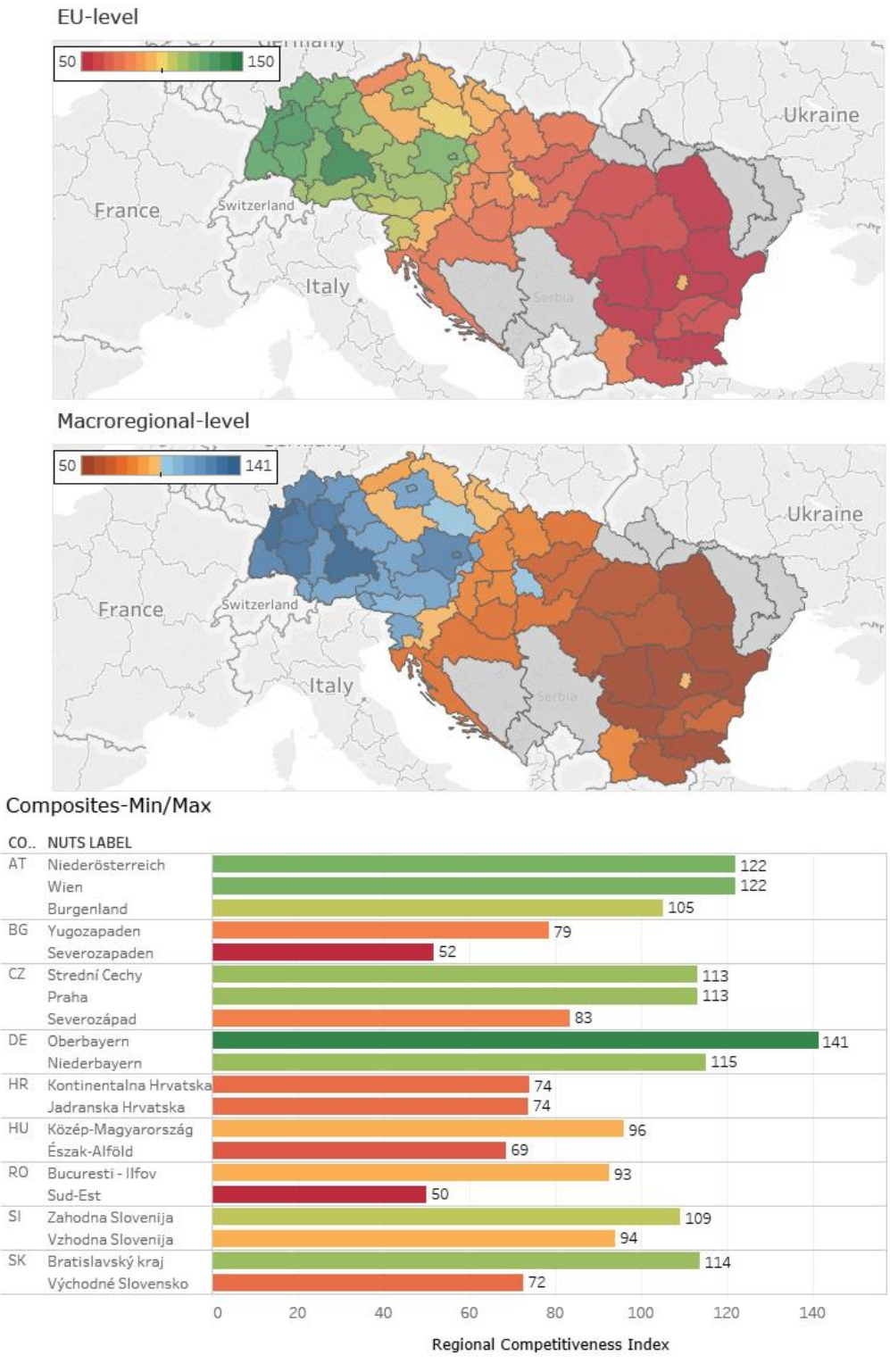
Availability of skilled workforce, capital and technological endowment as well as investment in research and infrastructure influence economic performance and competitiveness at regional level. But also other factors, such as the proximity to universities and quality of health services, the time it takes to start-up a business, the perception of the rule of law, environmental and safety considerations are, among others, important competitiveness factors. In many countries, there are significant region-to-region differences in some or all of these factors (Grozea-Helmenstein and Berrer, 2013).

The competitiveness indicators which have been chosen provide a more detailed insight into the (broadly defined) competitiveness of countries and macro-region on various aspects. They focus on common factors throughout all macro-regions and factors that are specific for each macro-region. The purpose in this category is to identify the possible needs for interventions that add to smart, inclusive, and/or sustainable growth, and therewith to the cohesion of a macro-region.

2.5.1 Overall competitiveness

EU Regional Competitiveness Index

Figure 2-11: Regional Competitiveness by NUTS-2 in 2016, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-10: Explanation of the indicator: 'Regional Competitiveness'

Regional Competitiveness Index (RCI) measures various dimensions of competitiveness at the regional level. [35] It highlights the EU NUTS-2 regions' strengths and weaknesses, while giving useful insights into the fields that need improvement in order to rise regional competitiveness. In the framework of the Regional Competitiveness Index the overall competitiveness of a country is defined by all its regions and not only by its capital region. Countries such as Romania, Slovakia and France are characterised by strong disparities in the socio-economic development and competitiveness between the capital region and the rest of the regions in the country. Federal states, like Germany and Austria show a more homogeneous picture regarding competitiveness.
The Regional Competitiveness Index[36] is based on eleven pillars comprising inputs and outputs of territorial competitiveness. These basic pillars are grouped into three sets focusing on basic-, efficiency- and innovative- factors of competitiveness. They include:[37] (1) Quality of Institutions, (2) Macro-economic Stability, (3) Infrastructure, (4) Health and the (5) Quality of Primary and Secondary Education. These pillars are especially relevant for less developed regions.
The area efficiency includes the following pillars: (6) Higher Education and Lifelong Learning (7) Labour Market Efficiency and (8) Market Size. Innovation pillars are especially relevant for the most advanced regional economies. They comprise (9) Technological Readiness, (10) Business Sophistication and (11) Innovation. RCI aims at showing short and long-term capabilities of the regions.

In the Danube macro-region, the ten best performing regions in 2013 were all located in Germany, of which the best three were Oberbayern, Karlsruhe and Stuttgart. Austria's regions Niederösterreich and Wien and Slovakia's region Bratislavský kraj followed the German regions. Praha and Střední Čechy in the Czech Republic were ranked on the 15th place in the ranking of the macro-region with 57 NUTS-2 regions. A median performance is seen in the region Zahodna Slovenija in Slovenia, Közép-Magyarország in Hungary and Bucureşti – Ilfov in Romania with the places 23rd, 25th and 28th (all regions including the capital cities). The best ranked Bulgarian region was Yugozapaden on the 37th place, followed by the region Kontinentalna Hrvatska from Croatia on the 38th place. Among the ten lowest performing regions in 2013, five were located in Bulgaria, while the other five were situated in Romania, the last place in the macro-region was occupied by Severozapaden in Bulgaria.

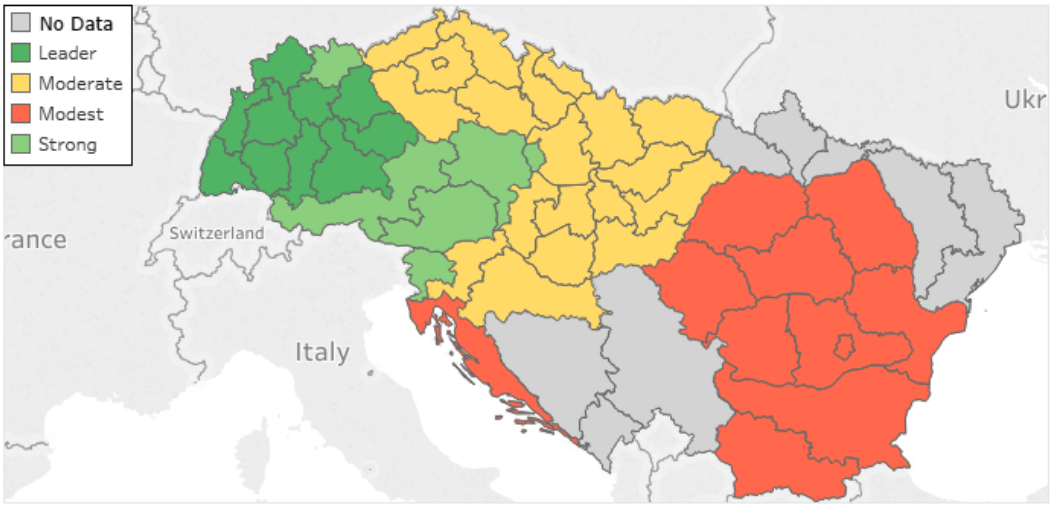
In 2016, among the ten best performing regions in the Danube macro-region, eight were located in Germany, while two other were situated in Austria. First, second and third places were again filled by the German NUTS-2 regions Oberbayern, Karlsruhe and Stuttgart. Niederösterreich and Wien in Austria were

[35] URL: http://ec.europa.eu/regional_policy/en/information/publications/studies/2013/eu-regional-competitiveness-index-rci-2013
[36] URL: http://ec.europa.eu/regional_policy/en/information/publications/studies/2013/eu-regional-competitiveness-index-rci-2013
[37] URL: http://ec.europa.eu/regional_policy/en/information/publications/studies/2013/eu-regional-competitiveness-index-rci-2013

ranked on the eighth place. Bratislavský kraj in Slovakia and Praha and Střední Čechy in the Czech Republic fell back in the ranking while Zahodna Slovenija in Slovenia, Közép-Magyarország in Hungary and Bucureşti – Ilfov in Romania maintained their average positions, with places of 22nd, 26th and 29th. A region in Bulgaria (Yugozapaden) managed to improve its position by one place while the Croatian region Kontinentalna Hrvatska fell in the ranking of the macroeregion on the 39th place in 2016. Among the ten lowest performing regions in 2016, six were located in Romania and four were to be found in Bulgaria. In 2016, the lowest performer of this macro-region was the Romanian region Sud-Est. The lowest performing NUTS-2 regions register low values for all three sub-indices considered: 'basic', 'efficiency' and 'innovation'. This ranking does not include Moldova and Ukraine as there were no data available.

Regional Innovation Scoreboard

Figure 2-12: Regional Innovation Scoreboard by NUTS-2 in 2016. The bottom figure shows the scoring of all Regions.



Upper/Lower Regions of the Composite

COUNTRY..	NUTS LABEL	Modest	Moderate	Strong	Leader
AT	Ostösterreich			●	
	Südösterreich			●	
	Westösterreich			●	
BG	Severna i yugoiztochna B..	●			
	Yugozapadna i yuzhna tse..	●			
CZ	Jihovýchod		●		
	Jihozápad		●		
	Moravskoslezsko		●		
	Praha		●		
	Severovýchod		●		
	Severozápad		●		
	Stední Morava		●		
	Strední Cechy		●		
DE	Oberbayern				●
	Oberpfalz				●
	Oberfranken			●	
	Freiburg				●
	Karlsruhe				●
	Mittelfranken				●
	Niederbayern				●
	Schwaben				●
	Stuttgart				●
	Tübingen				●
	Unterfranken				●
HR	Jadranska Hrvatska	●			
	Kontinentalna Hrvatska		●		
HU	Dél-Alföld		●		
	Dél-Dunántúl		●		
	Észak-Alföld		●		
	Észak-Magyarország		●		
	Közép-Dunántúl		●		
	Közép-Magyarország		●		
	Nyugat-Dunántúl		●		
RO	Bucuresti - Ilfov	●			
	Centru	●			
	Nord-Est	●			
	Nord-Vest	●			
	Sud - Muntenia	●			
	Sud-Est	●			
	Sud-Vest Oltenia	●			
	Vest	●			
SI	Zahodna Slovenija			●	
	Vzhodna Slovenija		●		
SK	Bratislavský kraj			●	
	Stredné Slovensko		●		
	Východné Slovensko		●		
	Západné Slovensko		●		

Text Box 2-11: Explanation of the indicator: 'Regional Innovation Scoreboard'

The Regional Innovation Scoreboard is a regional extension of the European Innovation Scoreboard, assessing the innovation performance of European regions on a limited number of indicators.[38]
The following analysis is based on the data of the Regional Innovation Scoreboard published by the European Commission. There have been used data on NUTS-2 regions of the European Union for the period from 2009 to 2016. Although data were not available for all NUTS-2 regions and countries in a macro-region, it gives a picture about the level of innovation in a macro-region.
The regions are ranked in the following four categories: Innovation leaders, strong innovators, moderate innovators and modest innovators.
Due to the underlying categorisation, this indicators has not been benchmarked, but has been left in its original format.

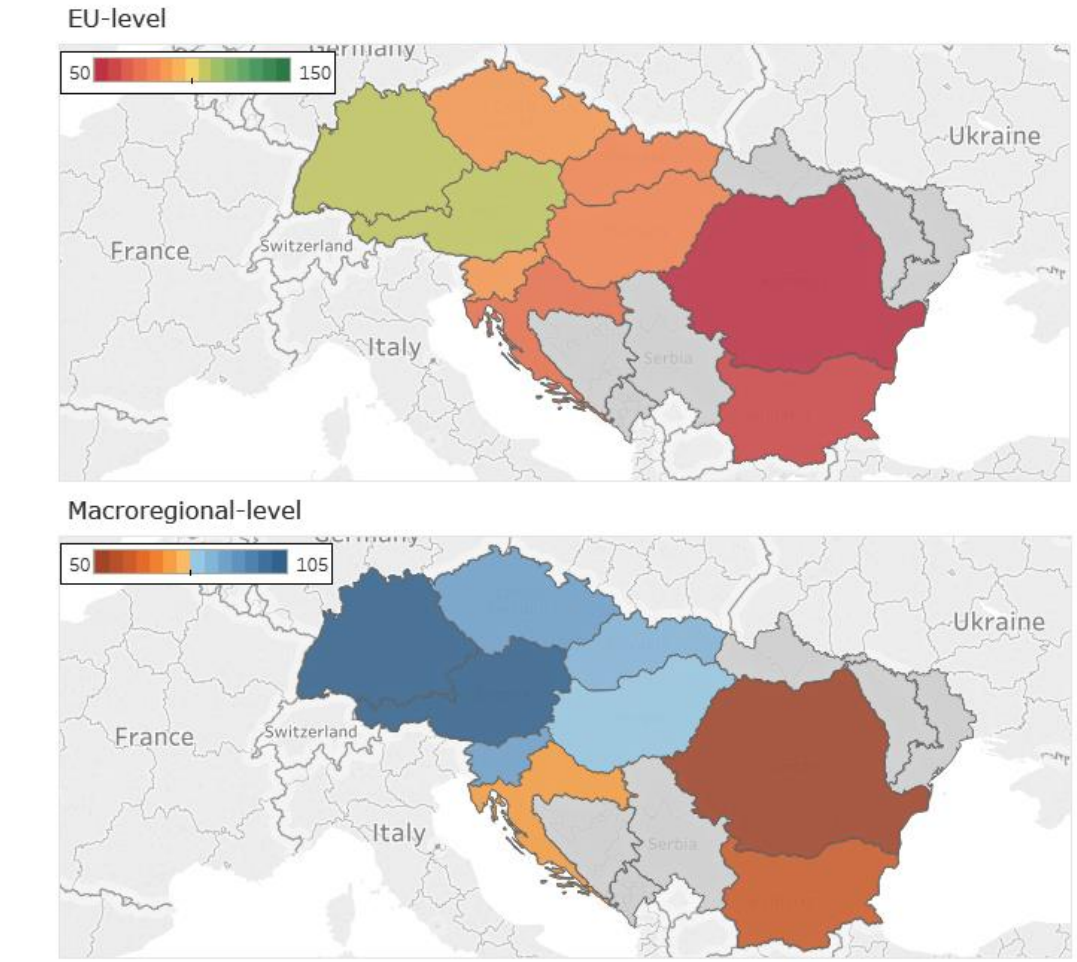
In 2008, the best performing NUTS-2 regions in the Danube macro-region were to be found in Germany. All German regions in the macro-region were rated as innovation 'Leaders'. Austria's NUTS-1 regions and Slovenia's NUTS-2 region Zahodna Slovenija followed with a rating as 'Strong' innovators. All regions of Croatia, Czech Republic and Slovakia received a 'Moderate' innovator rating, together with Vzhodna Slovenija in Slovenia and Bucuresti – Ilfov in Romania. Furthermore, every region of Hungary except one was rated as 'Moderate' innovator. 'Modest' innovators in the macro-region were the NUTS-1 regions in Bulgaria together with seven of the eight NUTS-2 regions in Romania and the region Dél-Alföld in Hungary.

Comparing the innovation performance of the NUTS-2 regions in the macro-region in 2016 with that of the year 2008, there has been only little change. The NUTS-2 region Bratislavský kraj in Slovakia was able to improve to a 'Strong' innovator while Dél-Alföld improved to a 'Moderate' innovator. Oberfranken in Germany lost its status as 'Leader' region, now being a 'Strong' innovator in 2016. Croatia's region Jadranska Hrvatska and Romania's region Bucuresti - Ilfov lost their 'Moderate' innovator position and were rated 'Modest' innovators in 2016, meaning that every NUTS-2 region of Romania is now a 'Modest' innovator. The 'Modest' performance of the NUTS-2 regions in Bulgaria as 'Modest' innovators is due to the relative weaknesses in 'Public R&D expenditures', 'Innovative SMEs collaborating with others', and 'SMEs with marketing or organisational innovations'. The 'Modest' performance of the Romanian regions was due to relative weaknesses in the 'Innovative SMEs collaborating with others', 'SMEs with product or process innovations', and 'SMEs with marketing or organisational innovations'. This ranking excludes Moldova and Ukraine as there was no data available for these countries.

[38] http://ec.europa.eu/growth/industry/innovation/facts-figures/regional_de

EU Digitalisation Index (DESI)

Figure 2-13: EU Digitalisation by country in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-12: Explanation of the indicator: 'EU Digitalisation Index'

The Commission's Digital Single Market Strategy for Europe[39] emphasises Europe's potential to take a leading role in the global digital economy; with a potential of EUR 415 billion GDP growth for the EU.[40] However, fragmentations in the single market and barriers restrain the development in this field. The digital economy could create opportunities, expand markets, assure better services at better prices, and generate employment. Therefore, progress on improving access for consumers and businesses to online goods and services[41]; creating the proper environment for developing digital networks and services; and raising the growth potential of the European digital economy are crucial in order to take advantage of the opportunities created by the digital economy.

The Digital Economy and Society Index (DESI) assesses the Member States' status and progress towards the global digital economy. DESI is a composite index that combines "relevant indicators on Europe's digital performance and tracks the evolution of EU Member States in digital competitiveness."[42]
The overall DESI score is the result of five separate dimensions:[43]

1. Connectivity: The Connectivity dimension measures the quality and development of broadband internet services.
2. Human Capital: This dimension measures the computer skills of European citizens.
3. Use of Internet: The Use of Internet dimension reports which actions European citizens execute online.
4. Integration of Digital Technology by businesses: This dimension shows the digitisation of businesses.
5. Digital Public Services: This dimension informs about eGovernment and the digitisation of public services.

An analysis of the DESI index for the macro-region's countries gives useful information regarding their achievements regarding digital competitiveness. The data used for the analysis has been published by the European Commission. However, data were not available for every country in the macro-region. For this analysis, the combined score of the five individual dimensions has been used.

In 2014, the ranking in the Danube macro-region countries was led by Germany, with a benchmarking score of 105, closely followed by Austria (losing on the 'Connectivity' dimension). These two countries were the only ones scoring above the EU-median. Slovenia, the Czech Republic, Slovakia and Hungary scored in the upper quarter of the bottom half (thus above 75). Slovenia and the Czech Republic lagged behind on the 'use of internet', while Hungary scores low on the 'integration of Digital Technology (digitisation of Hungarian businesses)'. The poorest performer, Romania, formed the EU's bottom end. Overall, the digitalisation in 2014 is thus substantially lower than the EU-median, with an average score of 81.

[39] URL: http://www.ipex.eu/IPEXL-WEB/dossier/document/COM20150192.do.

[40] URL: http://www.europarl.europa.eu/atyourservice/en/displayFtu.html?ftuId=FTU_5.9.4.html

[41] URL: https://ec.europa.eu/digital-single-market/en/access-digital-single-market

[42] URL: https://ec.europa.eu/digital-single-market/en/desi

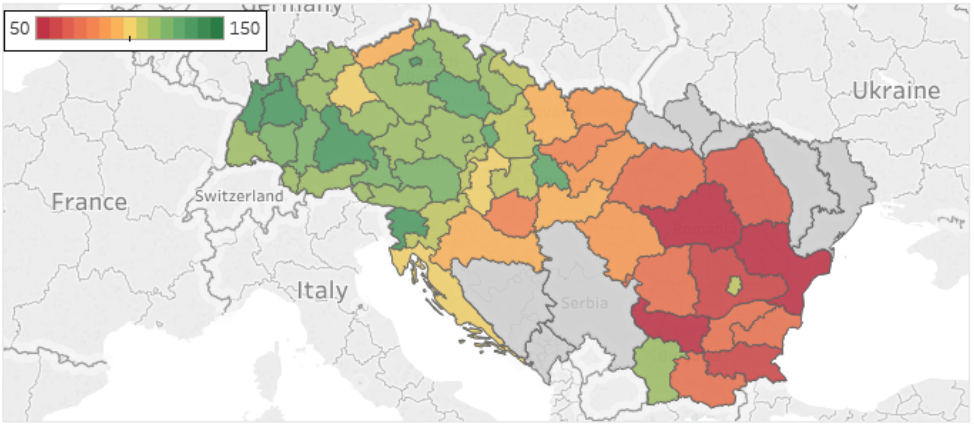
[43] URL: https://ec.europa.eu/digital-single-market/en/desi

Nearly all countries managed to improve their scores by 2017, of which Austria (109), the Czech Republic (89) and Slovenia (92) improved most. Austria and Germany remain the leaders in this macro-region by far. Yet, Germany's benchmarking score decreased the most in this macro-region. Bulgaria and Romania, despite improvements on the DESI since 2014, remain the poorest performers and did not improve on the benchmark. They still lag far behind other European countries, particularly on the 'Use of Internet', 'Integration of Digital Technology (digitisation of businesses)', and 'Digital Public Services'. Romania has however made significant progress eGovernment services, which is not yet captured by the index for that year.

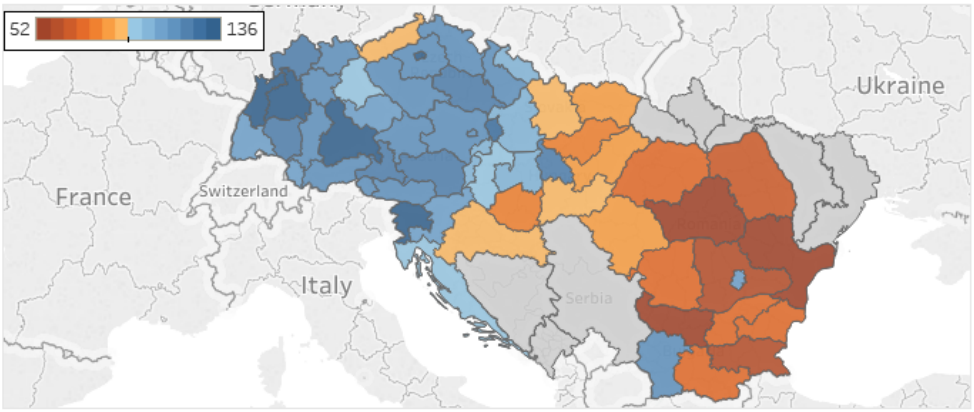
2.5.2 Education

Figure 2-14: Education by NUTS-2 in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components

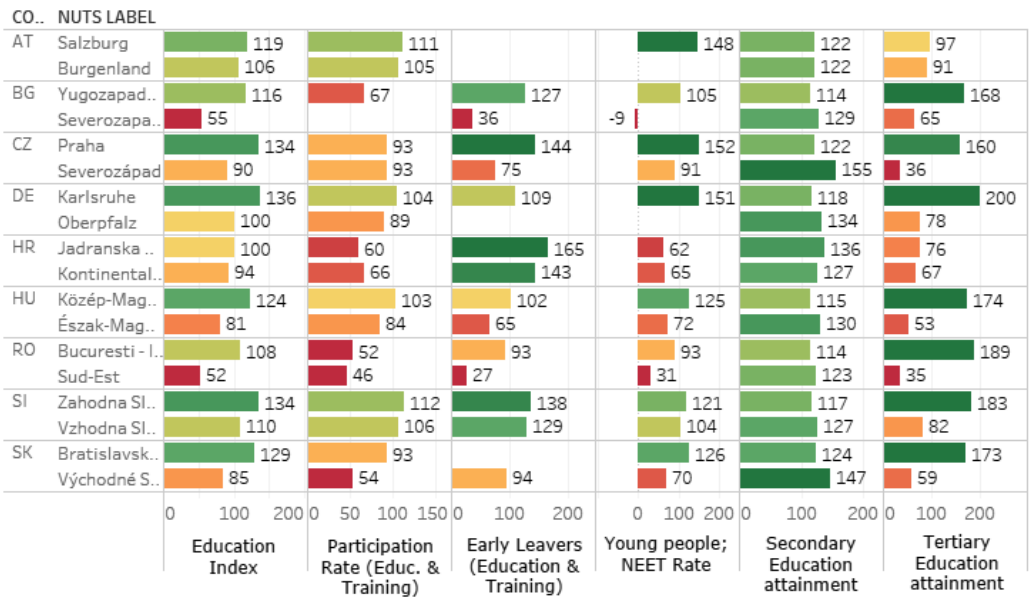
EU-level



Macroregional-level



Upper/Lower Regions of the Composite



Text Box 2-13: Explanation of the indicator: 'Education'

A well-educated labour force on medium and high attainment levels represents a critical input for the economic performance of a region. While school enrolment co-determines regional workforce skills, productivity, and economic performance, the employment and career prospects in a region also influence the rate of enrolment in education (Huggins and Izushi, 2009).
The Education Index seeks to reflect on this issue with five indicators:

According to Eurostat the Participation Rate in Education and Training indicates "the share of the population that participates in formal and non-formal education". The former is defined "as institutionalised, intentional and planned through public organizations and recognised private bodies and – in their totality – constitute the formal education system of a country. Non-formal are any organised and sustained learning activities outside the formal education system, and essentially those which complement formal education or are an alternative to those."

The indicator Early leavers from education and training is defined by Eurostat as the "percentage of the population aged 18 to 24 having attained at most lower secondary education and not being involved in further education or training". A high share of early leavers impacts the economy: As the demand for low qualified workforce continues to decrease as a result of structural change, a high share of persons who leave the education and training system too early influence negatively the socio-economic development. As part of the EU 2020 targets, the European Commission seeks to achieve a value below 10%.

According to Eurostat, the indicator Young people neither in employment nor in education and training (NEET) reflects "the percentage of the population of a given age group and sex who is not employed and not involved in further education or training (formal or non-formal)". A high NEET rate points to a difficulty of transition between school and work (OECD, 2015). This may be caused by the mismatch between acquired skills in the education and the skills needed on the labour market and also by the scarcity of jobs in some economies which have been strongly impacted by the economic crisis. Flexible school-work arrangements can positively influence the transition to employment. Also higher education achievements may help the transition from school to work.

The last two indicators are respectively the Secondary-, and Tertiary Education Attainment of the total population aged 25-64. Eurostat defines these as "the highest ISCED (International Standard Classification of Education) educational attainment successfully completed by an individual". The shares of the adult population with secondary and tertiary education in total population are used to picture a region's skills level. Generally highly educated individuals tend to be attracted by urban centres as these offer better employment opportunities with income opportunities above average.

The highest values on the composite indicator Education in the Danube macro-region can be found in the NUTS-2 regions in the Czech Republic, Germany, Austria and Slovenia. The best performing NUTS-2 regions in the macro-region are Praha in the Czech Republic, Stuttgart, Karlsruhe and Oberbayern in Germany, Közép-Magyarország in Hungary, Zahodna Slovenija in Slovenia, and

Bratislavský kraj in Slovakia. These regions exhibit the highest values on all five component indicators. Compared to the year 2008, all regions in Austria and except for one region also in Hungary as well as Stuttgart, Karlsruhe, and Oberbayern in Germany show in 2015 an improvement on the composite index. The regions in Austria and Slovenia score the highest in the 'Participation rate in education and training' (last 4 weeks), due to the well-established and also well-funded dual (including theoretical and practical education) vocational education system in Austria and Germany. In the Vocational Education and Training System in these countries companies have an important role in the training of a highly skilled workforce. There are also connections between this system and the broader education system. This system is especially attractive to the young people as it gives good possibilities either to go directly into full-time employment or to continue education.

Of the new Member States, Slovenia is the most cohesive throughout its regions, while the benchmark scoring in e.g. Bulgaria and Romania differs significantly between the urban capital and rural regions. The lowest scoring regions are also found in these countries: Sud-Est, Centru, Nord-Est (in Romania) and Yugoiztochen and Severozapaden (in Bulgaria) with values at about half the EU-median (100). The regions in Romania, Bulgaria and Hungary and Severozápad in the Czech Republic show the highest 'NEET-Rates' (and thus lowest benchmark score) as well as the highest rate of 'Early leavers from education and training'. Looking at the temporal dimension, Bulgaria, Romania, Croatia and Slovakia show a deterioration of the composite indicator Education between 2008 and 2015. The low performance can be attributed to the low budgetary funds allocated in these countries for education and the continuous brain drain during the past years.

For the candidate and potential candidate countries as well as for Moldova data are available at Eurostat only for the indicator Early school-leavers - total (%). Although the indicator Educational attainment: percentage of 30-34 years old having completed tertiary or equivalent education is not identical with the indicator Tertiary Education Attainment of the total population aged 25-64 used for the benchmark, this may give useful information regarding educational attainment in these countries (see Table below).

Table 2-10: Education indicators for (potential) candidate and neighbouring countries

	Early school-leavers - total (%)		Percentage of 30-34 years old having completed tertiary or equivalent education	
	2008	2015	2008	2014
Montenegro	8.6	5.7	n/a	28.3
Serbia	11.6	7.5	17.1	27.2
Bosnia and Herzegovina	35.5	26.3	10.0	18.9
Moldova	20.1	21.2	33.3	32.3

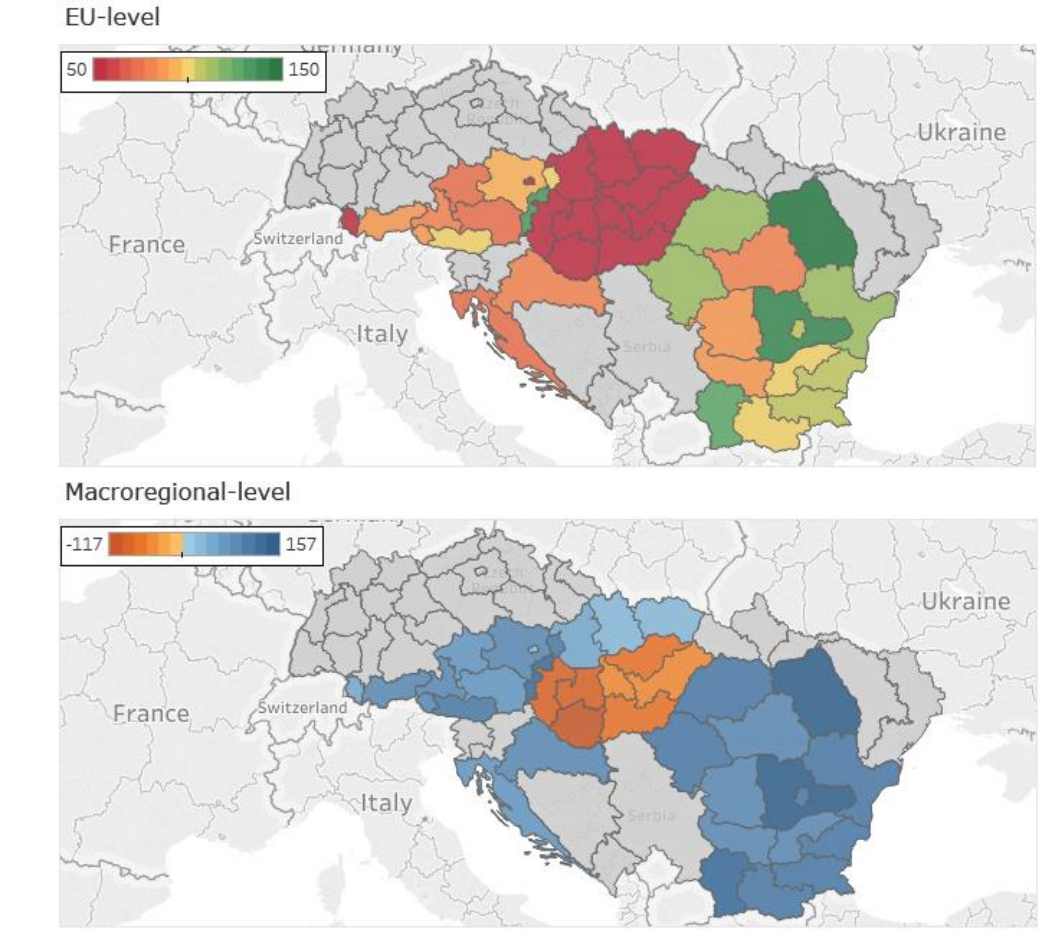
Source: Eurostat

While Montenegro and Serbia are performing relatively well on both indicators with a low share of early school leavers and a high share of population 30-34 years old having completed tertiary or equivalent education, Bosnia and Herzegovina shows a relatively lower performance on these indicators. However, since 2008 all three countries registered an improvement. Moldova has a high share of early school leavers and also a high share of population with tertiary achievement. Compared to 2008 can be observed a slight deterioration on both indicators in 2015 and 2014 respectively.

2.5.3 Business

Net business population growth

Figure 2-15: Net business population growth by NUTS-2 in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components.



Text Box 2-14: Explanation of the indicator: 'Net business population growth'

Eurostat defines an enterprise as "the smallest combination of legal units" that "produces goods or services, benefits from a certain degree of autonomy in decision-making, [and] carries out one or more activities at one or more locations."[44] The foundation of new enterprises and closure of unproductive businesses are main contributors to business dynamism, with a strong impact on employment. The indicator Net business population growth considers the yearly change in the difference between enterprise births and deaths.

Enterprise births are defined as enterprises beginning their activity from scratch[45] .
An enterprise death refers, according to Eurostat, to the "closure of a combination of production factors with the restriction that no other enterprises are involved in the event."[46] Deaths do not include exits from the population due a change of activity. An enterprise is included in this category only if it is not reactivated within two years. At the same time, a reactivation within two years is not considered a birth.

The indicator Net business population growth is based on data provided by the private sector economy. Eurostat has developed a methodology for the production of data on enterprise births (and deaths). The harmonised data collection follows the requirements for the indicators used for supporting the Europe 2020 Strategy.

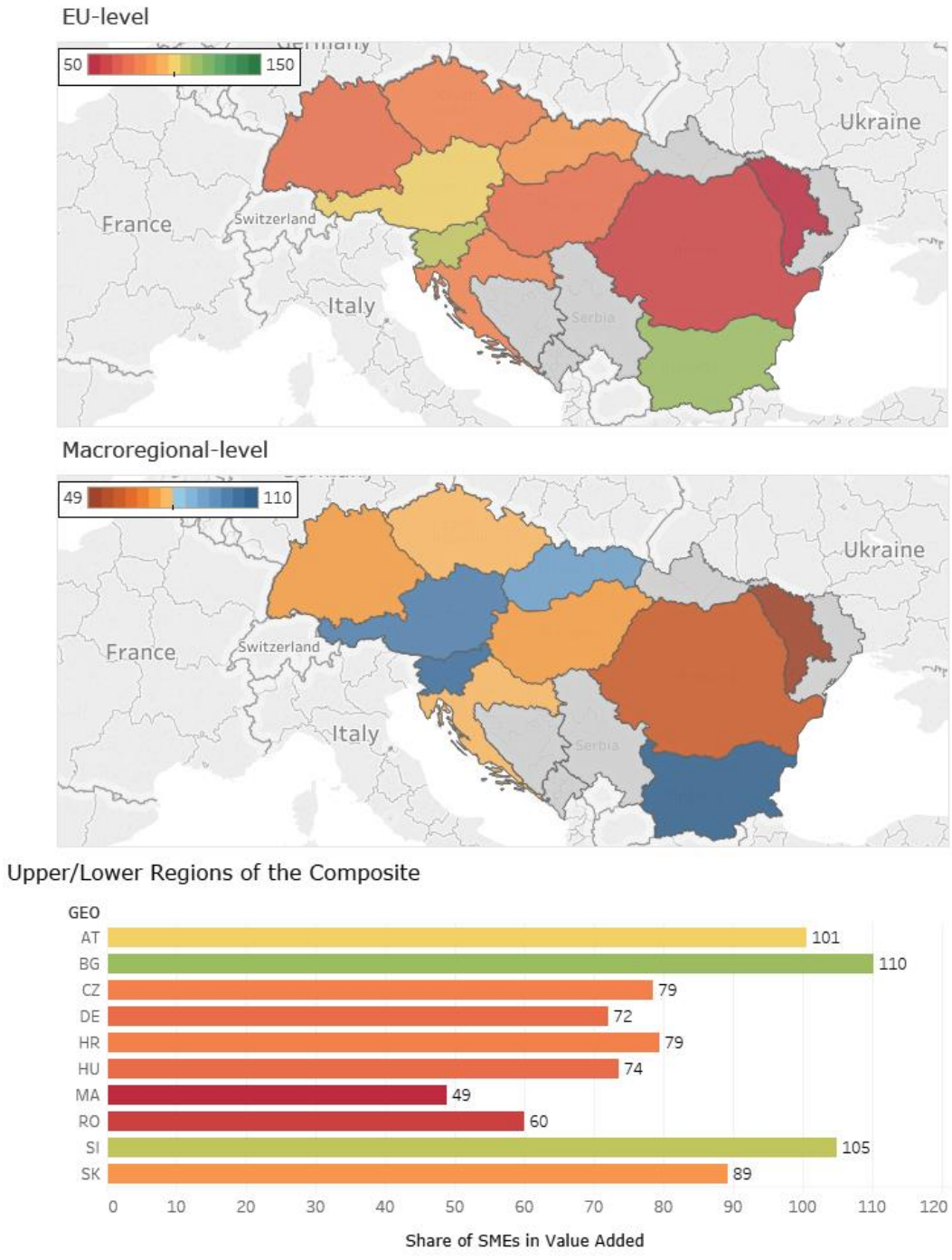
The indicator Net business population growth shows for the year 2014 a high dynamics in Hungary with growth rates which range from 9.77% in Észak-Magyarország to 14.60% in Nyugat-Dunántú. However, this development follows two years with a strong negative development, due to the weak economic growth in those years: Hungary's regions scored in 2013 as low as (-117) on the benchmark. A similarly strong development can be observed in Slovakia where the net growth rates take values between 7.87% in Bratislavský kraj and 11.45% in Východné Slovensko. Similarly to Hungary, this development follows after two years with negative growth, yet considerably less intensive. The net growth in the Western part of Austria (Salzburg, Tirol and Vorarlberg) has been negative in the years 2013 and 2014 with values from -0.95% in Tirol (47) to -0.12% in Vorarlberg (64). Again, these years coincide with a very weak GDP growth in Austria. Austria's most dynamic region is Burgenland with a growth rate of 2.81% in 2014 and 3.94% in 2013 (132). Burgenland is the region with lowest GDP per capita in Austria, which also records the highest GDP growth. Croatia shows a moderate dynamic in Jadranska Hrvatska (2.17%) and a stagnation in Kontinentalna Hrvatska. In Romania the growth remained moderate in 2014, similar to the previous year, ranging between 2.72% in Nord Vest and 0.33% in Sud Est. A similar development can be noticed in Bulgaria with growth rates ranging from 2.57% in Yugozapaden to 0.58% in

[44] URL: http://ec.europa.eu/eurostat/cache/metadata/de/bd_esms.htm
[45] The exact definition of a birth is "the creation of a combination of production factors, with the restriction that no other enterprises are involved in the event"; URL: http://ec.europa.eu/eurostat/cache/metadata/de/bd_esms.htm
[46] URL: http://ec.europa.eu/eurostat/cache/metadata/de/bd_esms.htm

Severozapaden. There are no data available for Germany, Slovenia, Moldova and the Ukraine.

Share of SMEs in industry, trade and services

Figure 2-16: Share of SMEs in Value Added by Country in 2013, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-15: Explanation of the indicator: 'Share of SMEs in value added'

Small and medium-sized enterprises (SMEs) are important players in the local and regional communities, as creators of new jobs and source of economic growth. As such, they play an important role in Europe's 2020 strategy, in achieving smart, sustainable and inclusive growth. In June 2008, a Communication named the Small Business Act (SBA)[47] for Europe recognising the central role of SMEs in the EU economy was adopted. This Act aimed to strengthen the role played by SMEs and to foster their growth and job creating potential through addressing some problems which impeded their development, such as administrative burdens; access to finance etc.[48] A review of the SBA was released in February 2011 and formulated new actions to respond to challenges arising from the financial and economic crisis.

For the Share of SMEs in value added, data was used from DG GROWTH's SME Performance Review from 2016.[49] The data covers the NACE rev.2 sectors B-J, and L-N. For policy purposes, SMEs in the EU are defined, according to Eurostat, as enterprises with fewer than 250 employees, provided that they are independent (of other enterprises) and do not have sales that exceed EUR 50 million or an annual balance sheet that exceeds EUR 43 million. Micro (with less than 10 employees), small (with 10 to 49 employees) and medium-sized enterprises (with 50 to 249 employees) are collectively referred to as SMEs.[50]

The Danube macro-region comprises largely countries with an SME share in added value below the EU-median. In 2013, only Bulgaria, Slovakia, and Austria scored above the median of a share of 62%. The share of SMEs is the lowest in Romania (just below 50%) and Moldova (about 44%), of which the latter performs slightly lower than the bottom performer in the EU.

Also the rest of the countries in the macro-region register relative low values ranging from 52% in Hungary to 57% in Slovakia. In these countries there are large daughter companies of foreign multinationals in industry (mostly in the automotive or oil industry) and trade, which dominate the business landscape. Except for Moldova, where this share dropped sharply between 2008 and 2013, there are only small changes in the position of small and large companies in 2013 compared to 2008. The share decreased most in Romania (-3%) and Croatia (-2%), but also the Czech Republic, Hungary and Slovenia. All other regions, particularly Slovakia (+3%) increased their share.

[47] URL: https://ec.europa.eu/growth/smes/business-friendly-environment/small-business-act_de

[48] *See footnote above*

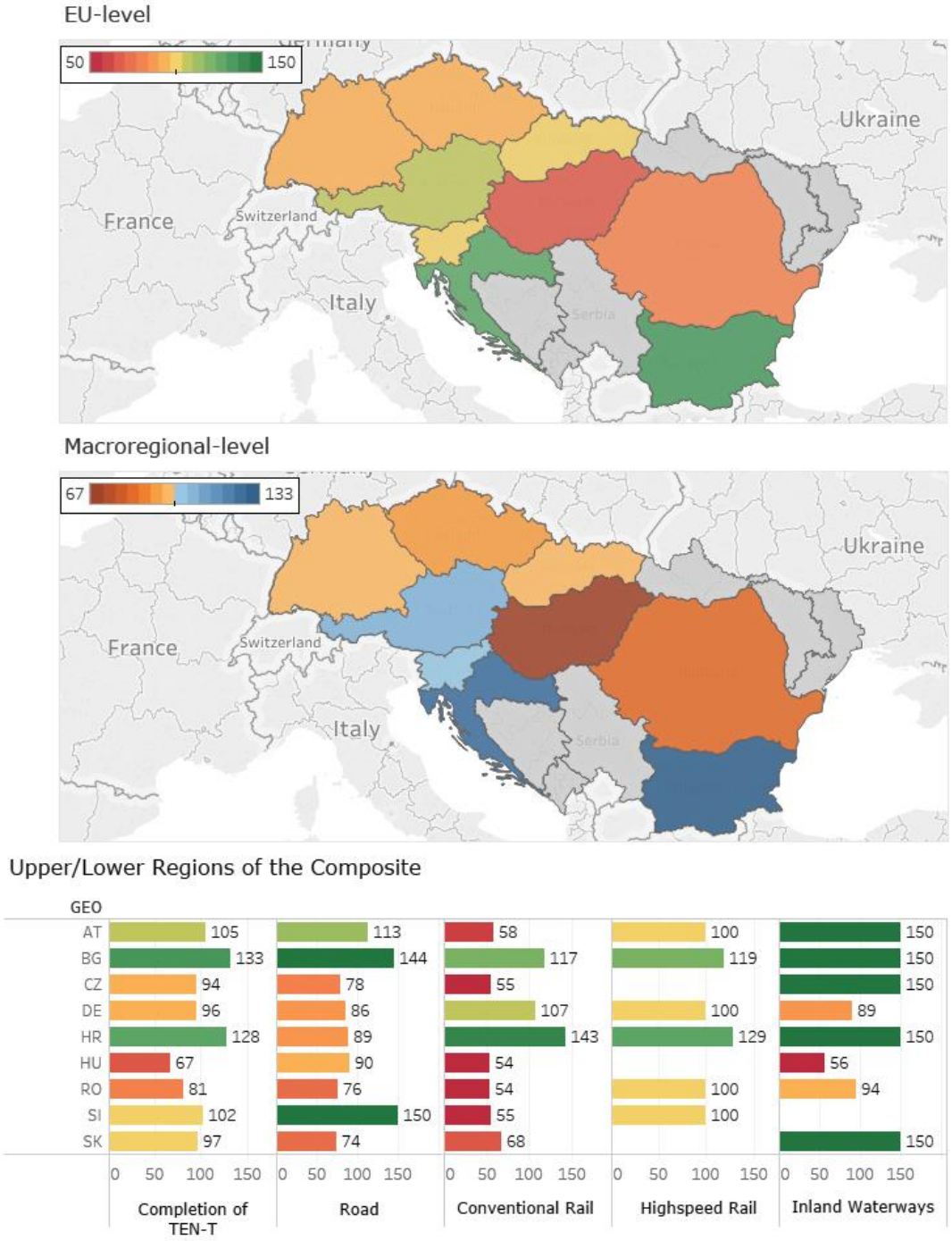
[49] URL: http://ec.europa.eu/growth/smes/business-friendly-environment/performance-review-2016_en

[50] URL: http://ec.europa.eu/eurostat/web/structural-business-statistics/structural-business-statistics/sme

2.5.4 Transport

Completion Composite TEN-T (road, rail, water)

Figure 2-17: TEN-T Completion by country in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components.



Text Box 2-16: Explanation of the indicator: 'Completion of TEN-T'

According to the European Commission, the TEN-T – the trans-European transport network - is the master plan for a comprehensive transport infrastructure development throughout the Union.[51] Availability of a well-developed infrastructure is essential for the functioning of the internal market and determines the pattern of citizens' mobility and goods' transport. On the other hand, the implementation of infrastructure projects (in the New Member States often with contributions from the Cohesion Funds) generate value-added, jobs and tax revenues in the domestic economies.[52] Thus, developing infrastructure is a key tool to foster economic growth in the EU Member States.

This chapter analysis three indicators: Completion of TEN-T Road Core Network, Completion of TEN-T Conventional Rail Core Network, Completion of TEN-T Inland Waterways Core Network. The indicators refer to the "share of the network for the three transport modes completed at the end of the respective year, compared to the total, including planned sections and sections to be upgraded."[53]

The statistics reflect the official maps contained in Annex I of Regulation (EU) No 1315/2013. According to DG MOVE TENtec "The term "completed" refers to "existing" infrastructure. This does not necessarily mean that infrastructure requirements, as stated in the regulation, are already implemented. The time horizon for the completion of the TEN-T Core Network is 2030. Therefore the categories "completed", "to be upgraded" and "planned" give a rather general overview as defined by Member States. There is no systematic definition of these categories at EU level. Due to the geographical position and size of the transport infrastructure network of the countries concerned, there may be data discrepancies across Member States."[54]

By the end of 2014 the more advanced countries in completing the TEN-T road core network were Slovenia (100% of the total), Austria (97%), and Hungary (81%). Croatia (61%), Germany (59%) and Czech Republic (55%) were following. The least advanced countries in this group were Slovakia (39%), Romania (42%) and Bulgaria (45%). Germany was however very advanced in completing the TEN-T rail core network with a 94% level of completion, followed by Austria (72%). The least advanced countries were Croatia (5%), Romania (5%), Bulgaria (6%), Slovenia (6%), and Hungary (9%). Slovakia completed only 20% of the total railway core network by the end of 2014. The statistics on the completion of TEN-T inland waterways core network show a very good performance for Slovakia, Austria, Hungary, Germany, and Bulgaria with 100% completion. Romania and the Czech Republic follow with 91% and 84% respectively completion. Less advanced was Croatia with 33% completion.

[51] http://www.europarl.europa.eu/cmsdata/116220/tent-issues-papers.pdf

[52] Grozea-Helmenstein, D. And Helmenstein, C. And Kleissner, A. And Moser, B. (2008): Makroökonomische und sektorale Effekte der UEFA EURO 2008 in Östereich. *Wirtschaftspolitische Blätter, 2008 (1). pp. 7-20.*

[53] URL: https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/investments-infrastructure/ten-t-completion-rail-hs_en

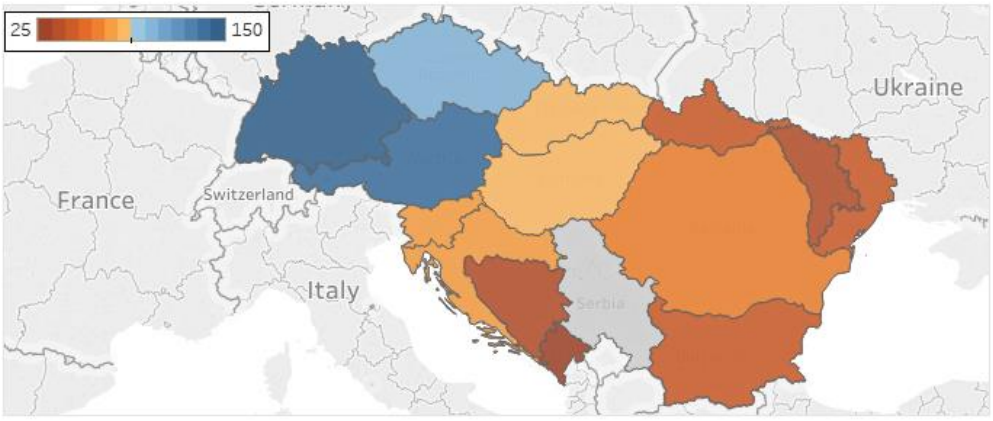
[54] URL: https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/investments-infrastructure/ten-t-completion-rail-hs_en

Logistics Performance Index (LPI)

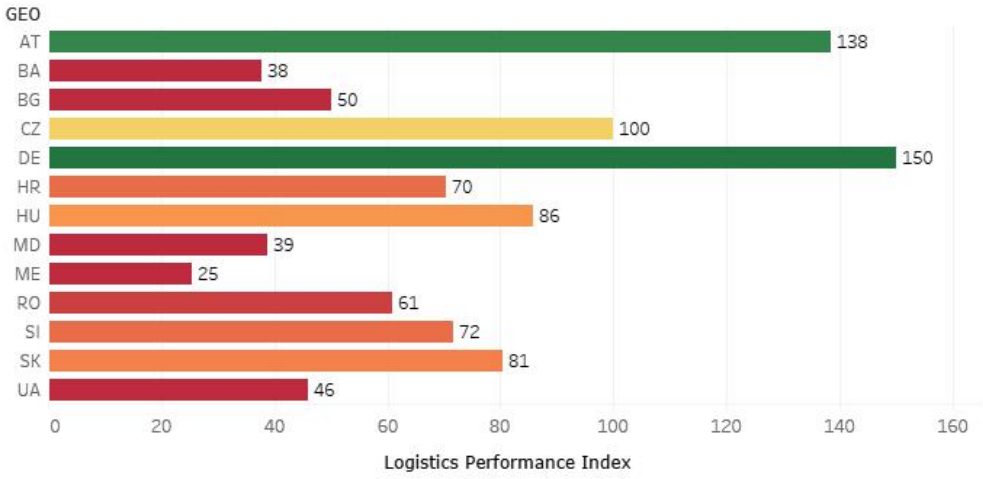
Figure 2-18: Logistics Performance Index by country in 2016, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components.

EU-level

Macroregional-level



Upper/Lower Regions of the Composite



Text Box 2-17: Explanation of the indicator: 'Logistics Performance Index'

The Logistics Performance Index (LPI) is the weighted average of a country's scores on six key dimensions. These six dimensions are: Efficiency of customs and border management clearance (Customs), Quality of trade and transport infrastructure (Infrastructure), Ease of arranging competitively priced shipments (Ease of arranging shipments), Competence and quality of logistics services—trucking, forwarding, and Customs brokerage (Quality of logistics services), Ability to track and trace consignments (Tracking and tracing), Frequency with which shipments reach consignees within scheduled or expected delivery times (Timeliness).[55] The LPI consists of both qualitative and quantitative measures.

The LPI is, according to the World Bank, an interactive benchmarking tool developed to support countries "to identify the challenges and opportunities they face in their performance on trade logistics."[56] It shows the strengths and weaknesses revealing possible fields for raising the performance. The LPI ranks 160 countries on the efficiency of international supply chain.

Germany is the top-performer globally, followed by Austria and the Czech Republic, closing off the countries performing above the median. The new Member States form the middle group with scores between 50 in Bulgaria and 86 in Hungary. Bulgaria is hence the lowest performing country in the EU. In the comparison to 2010, Bulgaria even lost points in the categories 'Customs', 'Ease of arranging shipments' and 'Tracking and tracing'. While Bosnia-Herzegovina performed not a lot below Bulgaria, Montenegro scored only half as many points as the EU's bottom performer and the worst performer in the Danube macro-region.

The comparison with 2010 shows that eight out of 13 countries managed to improve their scores. Countries with strong improvements were Croatia and Hungary (both 21 additional points), Slovenia (additional 15), and Ukraine (additional 10). Bosnia-Herzegovina, Bulgaria, Slovakia, Czech Republic and Montenegro all fell by up to 5 points in that same time period.

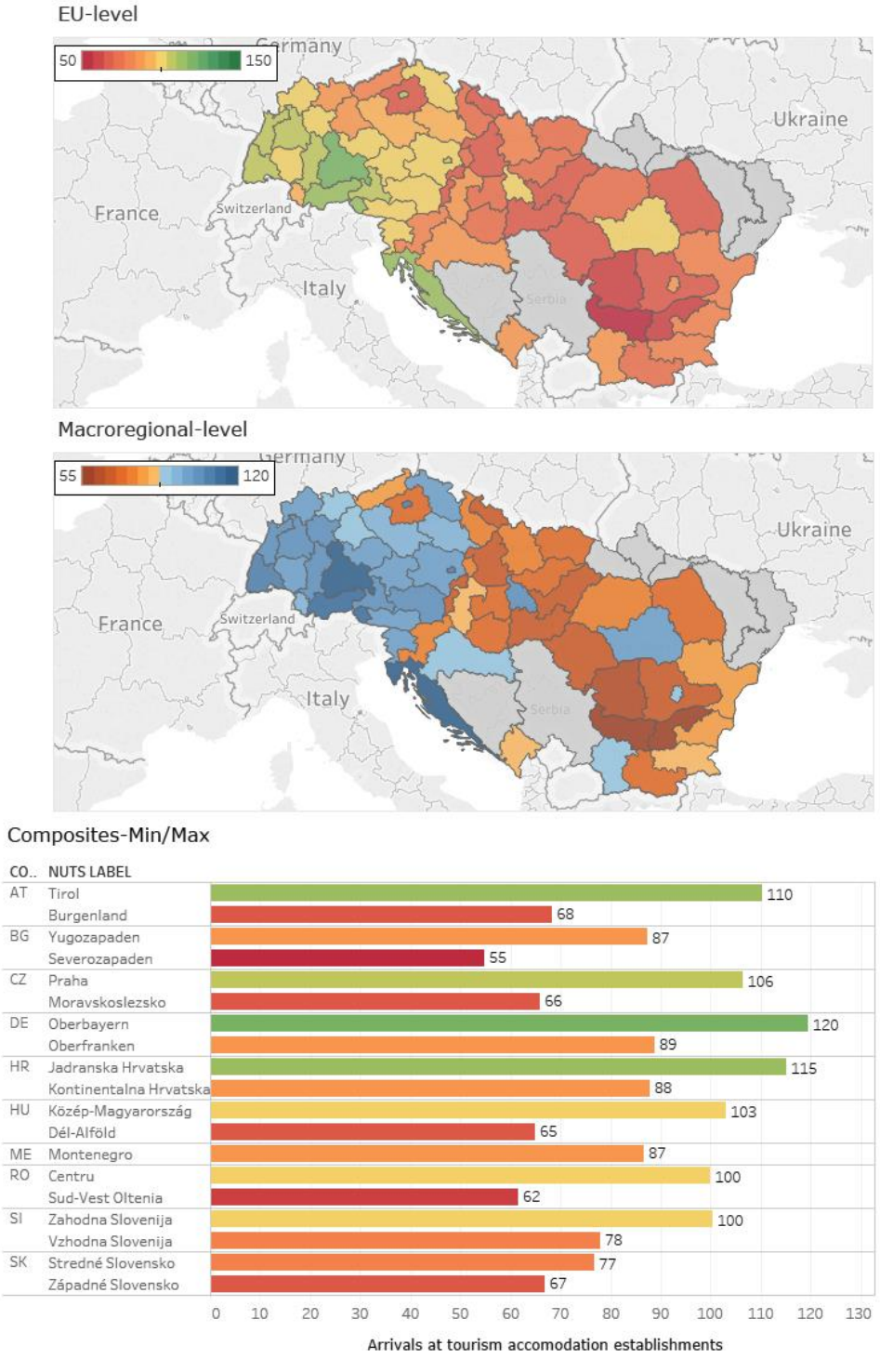
[55] URL: http://lpi.worldbank.org/international

[56] URL: http://lpi.worldbank.org/

2.5.5 Tourism

Arrivals at tourist accommodation establishments

Figure 2-19: Tourism arrivals by NUTS-2 in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



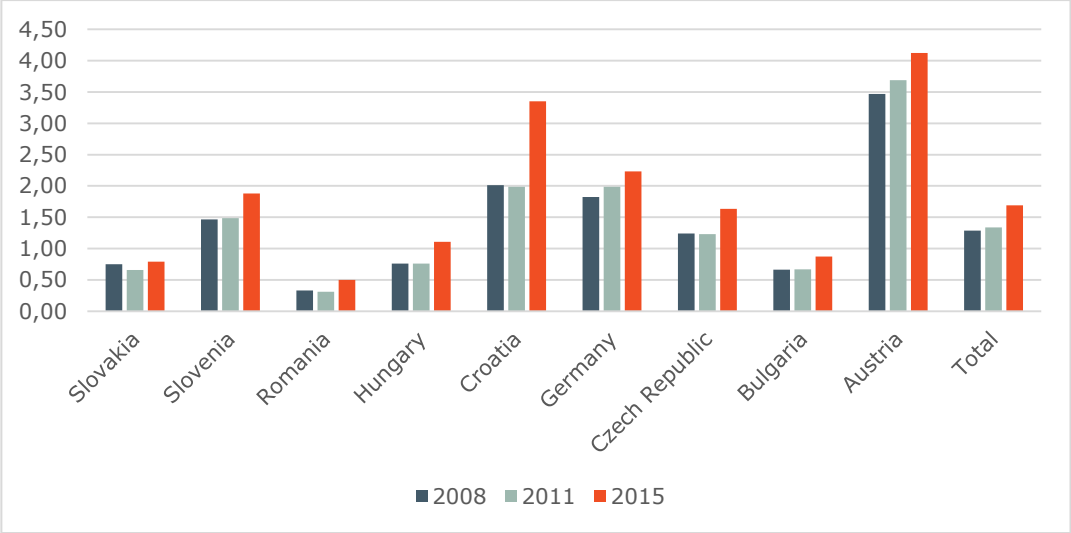
Text Box 2-18: Explanation of the indicator: 'Tourism arrivals'

The indicator Arrivals at tourist accommodation establishments is available at Eurostat for NUTS-2 regions. Tourist accommodation establishments are defined as hotels, holiday (and short-stay) accommodations, camping grounds, recreational vehicle- as well as trailer parks.

In the Danube macro-region, Germany, Austria and Croatia are the leading countries in the benchmark. Bulgaria and Slovakia form the bottom end in this macro-region. Within the EU territory, Romania shows the largest growth in its central and capital region, by 17 points compared to 2008. Nevertheless, Romania still has, next to Austria, the largest disparities in the macro-region. Montenegro, as the only candidate country in this benchmark, scores higher than several other macro-regions. Montenegro's score increased by 26 points since 2011, and thus points to a rather recent development of the tourism industry.

Considering the fact that the number of arrivals in absolute terms does not indicate the intensity of tourist sector activity, a Defert's Tourism Function Index (Lohmann, G.; Panosso Netto, A., 2017)[57] that compares arrivals per inhabitant can describe the intensity of tourism activity better. The arrivals per inhabitant is the highest in Austria, with the highest increase registered in Croatia.

Figure 2-20: Arrivals in the macro-region per capita (million arrivals)



Low values for the Arrivals of non-residents staying in hotels and similar establishments per inhabitant register the candidate and potential candidate countries and the non-EU country Moldova. The best performing among them is Montenegro. In all other countries the arrivals per inhabitant are very low. However, the tourists are slowly discovering these destination.

[57] Lohmann, G.; Panosso Netto, A. (2017): Tourism Theory: concepts, models and systems. ISBN 9781780647159; DOI 10.1079/9781780647159.0193

Table 2-11: Arrivals of non-residents staying in hotels and similar establishments per inhabitant in (potential) candidate and neighbouring countries

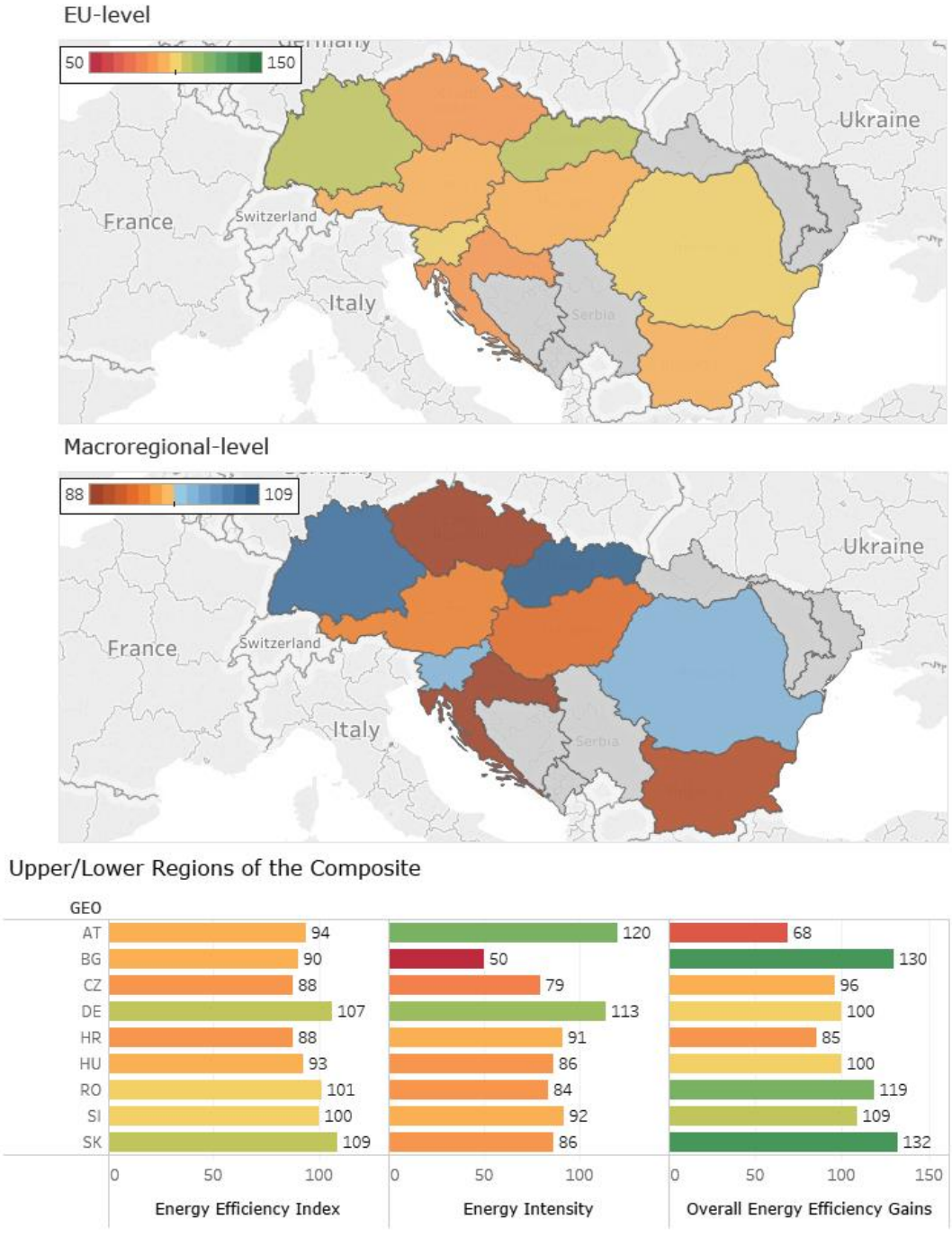
	2008	2011	2015
Montenegro	0.94	0.86	1.02
Serbia	0.09	0.10	0.16
Bosnia and Herzegovina	0.08	0.10	0.18
Moldova	0.02	0.02	0.03

Source: Eurostat, own calculations.

2.5.6 Energy

Energy Efficiency

Figure 2-21: Energy Efficiency Index by country. The top figure shows an EU-wide comparison while the middle map illustrates the index on the macro-regional scale. The bottom figure shows the benchmarked index values for each country, along with component indicators



Text Box 2-19: Explanation of the indicator: 'Energy Efficiency'

To assess the status on energy efficiency in the macro-region, a composite index consisting of two indicators was used. The first indicator is energy intensity of the economy, indicating to what extent economic activity is linked to energy consumption. The second indicator is energy efficiency gains. This indicator was selected to include a time dimension into the description of status in energy efficiency, showing the development of energy efficiency over time.

Energy intensity of the economy on a national level was obtained from Eurostat data. This indicator is measured in kg of oil equivalent per 1000 euros of GDP, or tonnes of oil equivalent per million euros GDP. It is calculated as "a ratio of total primary energy consumption and a country's GDP" and shows how much energy is required to produce a unit of GDP. Lower values indicate higher economic outputs per unit of energy consumed. Although 2015 data is available, data for 2014 was used in the composite, in order to tally with the second component indicator.

Energy Efficiency gains indicator is based on Odysee-Mure database (http://www.indicators.odyssee-mure.eu/energy-efficiency-database.html). In the Odysee-Mure project, energy efficiency gains are calculated for separate sectors, as well as for the economy as a whole. The indicator for the whole economy is calculated as "a weighted average of sectoral energy consumption changes", hereby taking into account the structure of the economy. Odysee-Mure database contains values only for EU countries. Calculations are based on changes in energy intensity between 2000 and 2014. For Hungary and Romania values for 2013 and 2011 were used, since later data was not available in Odysee database.

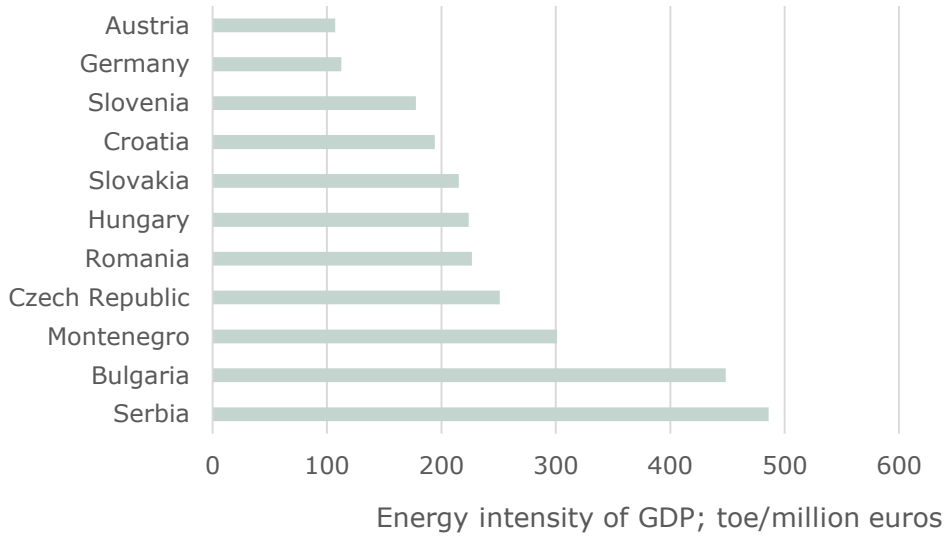
Both indicators are benchmarked using EU median as central value (100).
For the energy intensity, lower values indicate better performance. In the benchmarking process, the scale is inverted, so that top benchmarked value (150) matches the lowest energy intensity.

The composite energy efficiency index consists of benchmarked energy intensity and efficiency gain indicators, considered at equal weights.

Energy intensity

In terms of energy intensity, countries in Danube region vary widely, from Austria, at just over 100 tonnes of oil equivalent (toe) per million euros of GDP, to Serbia, at nearly 500 toe per million euros (Figure 2-22).

Figure 2-22: Energy intensity of the economy in Danube Region, 2015. Source: Eurostat



Efficiency gains

The second indicator complements the energy intensity by showing the countries' progress on energy efficiency over time. In addition to that, for the EU countries, this indicator addresses the sectoral differences in energy use. Table 2-12 shows the values of this indicator for the macro-region countries. Odysee-Mure project data is preferable, as it addresses the sectoral energy consumption, but it is available only for the EU countries in the macro-region, therefore it is complemented with Eurostat data for Serbia for comparison. In the composite index, only the Odysee values are used.

*Table 2-12: Energy efficiency gains 2000-2014; *-value for Hungary 2000-2013; Romania 2000-2011 due to data availability*

Country	Value	Source
Austria	15%	Odysee
Bulgaria	29%	Odysee
Croatia	17%	Odysee
Czech Republic	18%	Odysee
Germany	19%	Odysee
Hungary	20%	Odysee*
Romania	21%	Odysee*
Slovakia	30%	Odysee

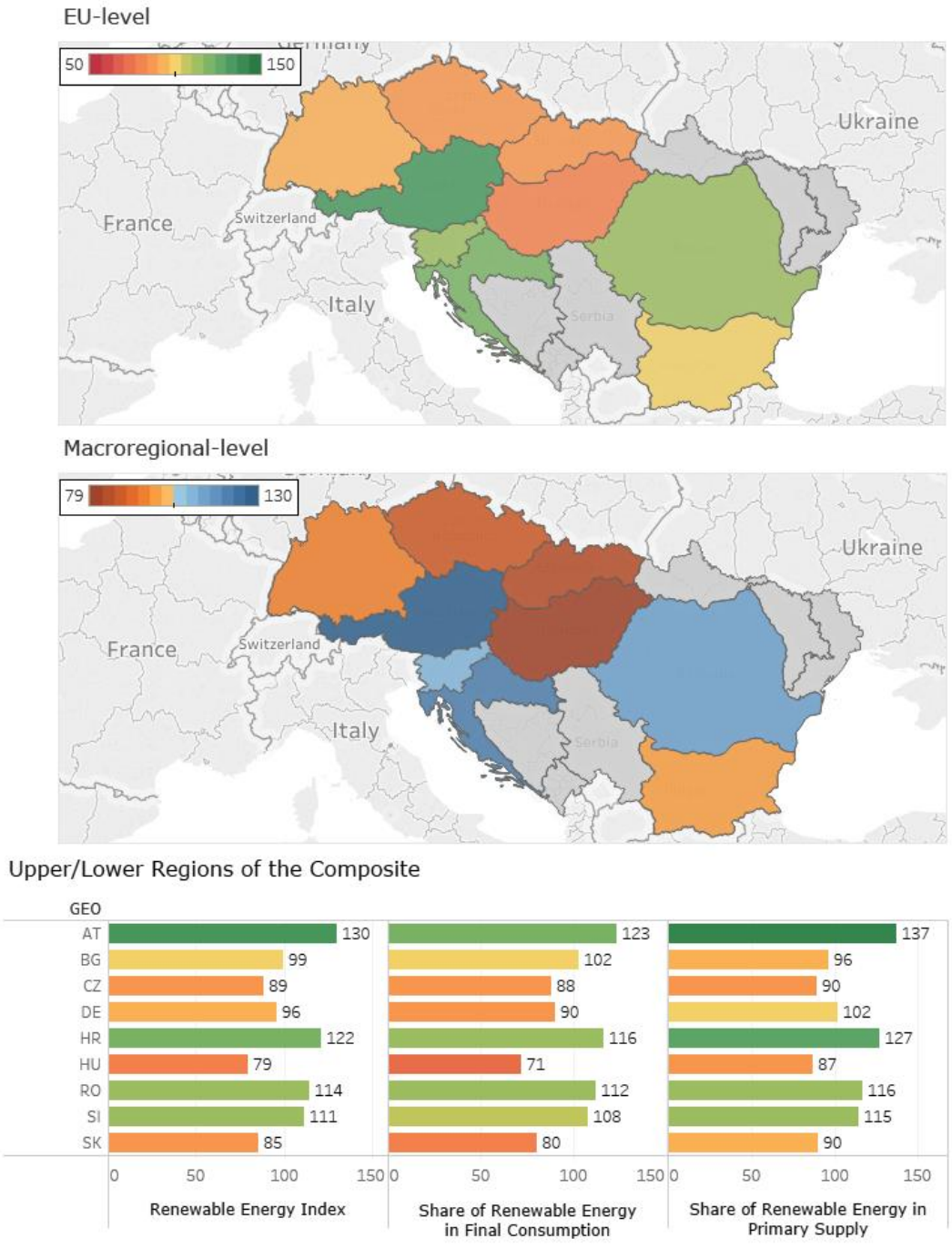
Slovenia	22%	Odysee
Serbia	38%	Eurostat
Montenegro	n/a	Not available for year 2000

Composite index

The composite index shows that the differences among countries in the Danube region are not very high. Slovakia and Germany score highest overall, but not much above the EU-median value). While for Germany this is thanks to already high energy intensity, for Slovakia high efficiency gains give rise to the high composite index value. Slovenia and Romania have values close to the EU-median, mainly thanks to the substantial improvements. The rest are lower than the EU-median, all in the range of 88-94, showing a relatively homogenous performance overall.

Renewable Energy Use

Figure 2-23: Renewable Energy Index by country in 2014. The top figure shows an EU-wide comparison while the middle map illustrates the index on the macro-regional scale. The bottom figure shows the benchmarked index values for each country, along with component indicators



Text Box 2-20: Explanation of the indicator: 'Renewable Energy Use'

The indicator for renewable energy use is a composite indicator consisting of two separate indicators: Share of renewables in primary energy supply (expressed in %), and share of renewables in gross final energy consumption (expressed in %). The first indicator is sourced from OECD, and the second from Eurostat.
Definition of renewables in both data sources are compatible: renewables include energy produced from hydropower, wind power, solar power, as well as tide, wave and ocean energy, energy from solid biomass, biofuels and renewable waste, and geothermal energy (Eurostat classification server RAMON and the OECD database).
Share of renewables in primary energy supply.
OECD country level data for 2014 was used to obtain the indicator for the share of renewables in primary energy supply. For the purposes of this indicator, OECD defines *Primary energy supply* as the sum of energy production and imports, from which exports and bunkers are subtracted, and subsequently adjusted for stock changes. OECD provides the renewable energy indicator as percentage of primary energy supplied by renewables in the total primary energy supply.
Share of renewables in gross final energy consumption.
Eurostat data for 2014 was used, specifically indicator table t2020_31. This indicator is used to measure EU's progress towards its 2020 target, namely to achieve 20% share of renewable sources in the final energy consumption.
Composite renewable energy indicator is calculated as the equally weighted sum of the benchmarked values of the above indicators.

Renewable energy is defined by International Energy Agency (IEA) as energy "that is derived from natural processes (e.g. sunlight and wind) that are replenished at a higher rate than they are consumed".[58] This includes wind, solar, hydro, geothermal, wave and bioenergy. Renewable energy is considered an important means to improve energy security, in particular important in countries with low indigenous availability of fossil fuels, as well as pollution and climate benefits[59].

For the purpose of this analysis, two indicators were selected to measure the level of renewable energy use: share of renewable energy in primary supply and share of renewable energy in consumption. Table 2-13 shows the values of both indicators for the countries in the Danube region.

[58] https://www.iea.org/topics/renewables/
[59] IEA (2015). *Medium-Term Renewable Energy Market Report 2015*. International Energy Agency.

Table 2-13: Shares of renewables in primary energy supply and in consumption, 2014. Source: Eurostat, OECD

Country	Share of renewables in primary supply, %	Share of renewables in final consumption, %
Austria	30.4	33.1
Czech Republic	8.8	13.4
Germany	11.6	13.8
Hungary	8.4	9.5
Slovakia	8.9	11.6
Croatia	24.9	27.9
Romania	19.3	24.9
Slovenia	18.4	21.9
Bulgaria	10.0	18.0

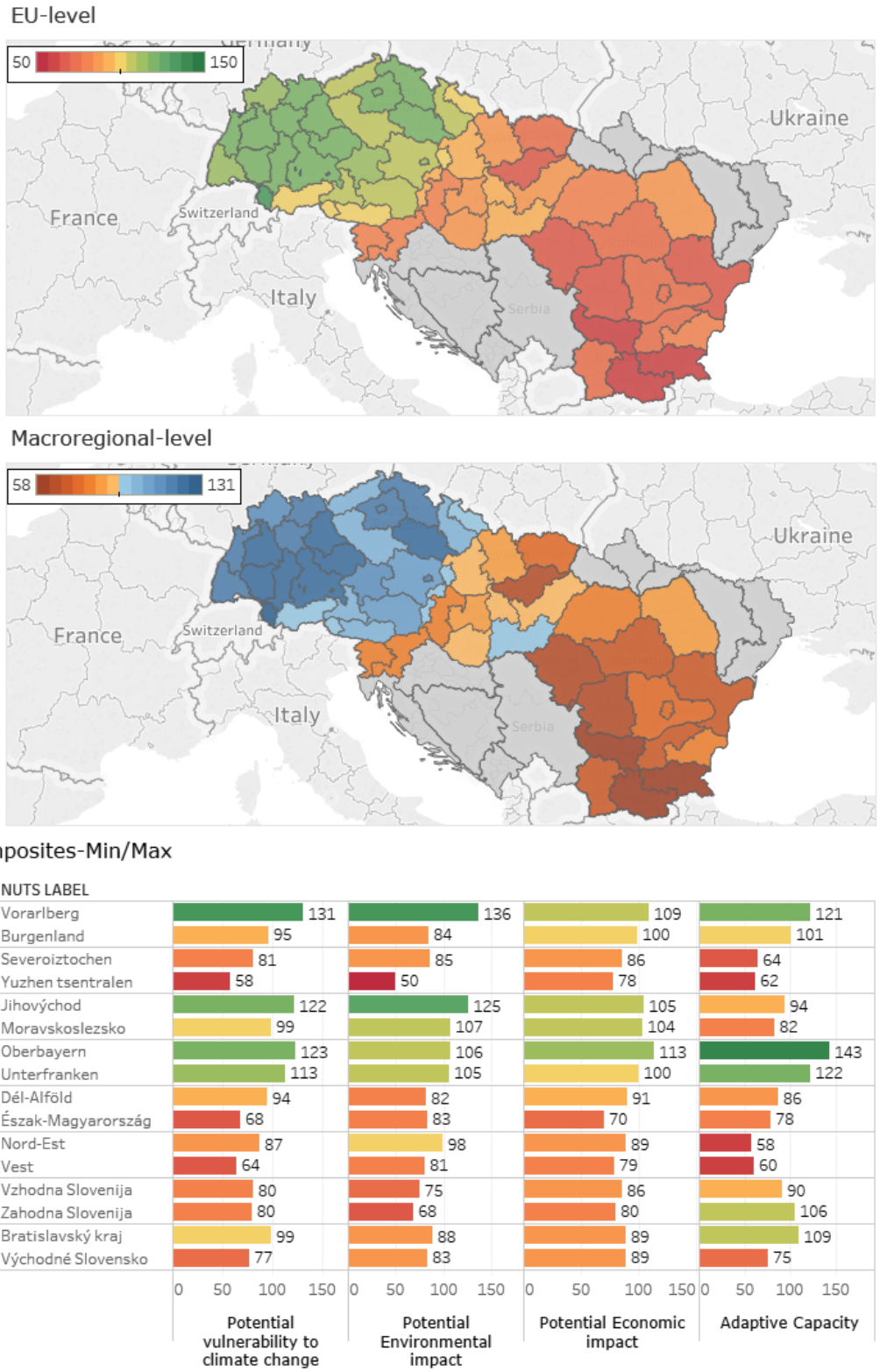
In the Danube macro-region Austria leads with a 33% share of renewable energy in final energy consumption, and 30% in primary supply. Austria is followed by Croatia, Slovenia and Romania on both indicators. On the other hand, Hungary shows the lowest performance on both indicators, with values below 10%.

All countries in the macro-region register a smaller share of renewables in primary supply compared to the share in the final energy consumption. The difference is the highest for Bulgaria (10% share of renewables in primary supply compared to 18% share in consumption). For the other countries the differences are small, below 5 percentage points. The lowest difference is registered in Hungary with just over 1 percentage points.

The benchmarked composite index for 2014 reveals the best performance in the macro-region on renewable energy use in Austria, followed by Croatia, Romania and Slovenia with above median index values. The other countries register below EU-median values, however, not significantly lower. Overall, the region performs well in the EU context, but displays large variations among the countries.

2.5.7 Climate Change: Adaptation

Figure 2-24: Potential Climate Change Vulnerability by NUTS-2, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components. The analysis is from 2011, but the climate simulation for 2071-2100.



Text Box 2-21: Explanation of the indicator: 'Climate Change Adaptation

Climate change can be influenced by territorial development. Thus climate change mirrors territorial development which on the other hand can lower regional vulnerability to climate change (Schmidt-Thome and Greiving, 2013)[60]. Territorial development can contribute to developing climate change mitigation and adaptation capacities to cope with the influence of climate change (IPCC, 2007)[61]. Therefore, the ESPON Climate project calculated the potential impacts on climate change as "a combination of regional exposure and sensitivities to climate change"[62]. The exposure analysis made use of existing projections on climate change and climate variability from the CCLM climate model, which has also been used by the Intergovernmental Panel on Climate Change (IPCC). The data have been aggregated for two time periods (1961-1990 and 2071-2100) for eight climate stimuli. A region's climate change sensitivity was calculated on the basis of several sensitivity dimensions - physical, environmental, social, cultural and economic. Together, exposure and sensitivity determine the possible impact that climatic changes may have on a region. For this analysis, the Environmental- and Economic Impact are analysed as a separate component.

The ESPON Climate project analyses how and to which degree climate change will impact on the competitiveness and cohesion of the European regions and Europe as a whole. Moreover, it investigates the ways in which policy can contribute to mitigate climate change, and to adapt to and manage those results of climate change that cannot be avoided. Based on these insights, the adaptive capacity was calculated as a weighted combination of most recent data an economic, infrastructure, technological, and institutional capacity as well as knowledge and awareness of climate change[63].

Due to the fact that the adaptive capacity enhances impacts of climate change, it feeds into a region's overall vulnerability to climate change. Combined with the five types of impacts (see above), the potential regional vulnerability has been calculated (Schmidt-Thome and Greiving, 2013).

ESPON Climate's approach of disaggregating the multitude of impacts as well as assessing these on a regional scale helps to shape concrete policy implications; as is also emphasised by the European Commission and its Green Paper "*Adapting to climate change in Europe*". Therefore, it is important to analyse climate change and territorial impacts on regions and local economies in Europe. In the following, a comparison of the vulnerability to climate change among the NUTS-2 regions of the macro-region is being performed. For this analysis, NUTS-3 data has been aggregated into NUTS-2 regions.

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[60] Schmidt-Thome P. and S. Greiving (2013) editors: European Climate Vulnerabilites and Adaptation: A Spatial Planning Perspective, published by John Wiley and Sons Ltd. UK. ISBN 978-0-470-97741-5

[61] IPCC (2007): Climate Change 2007, Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC (978 0521 88010-7 Hardback; 978 0521 70597-4 Paperback).

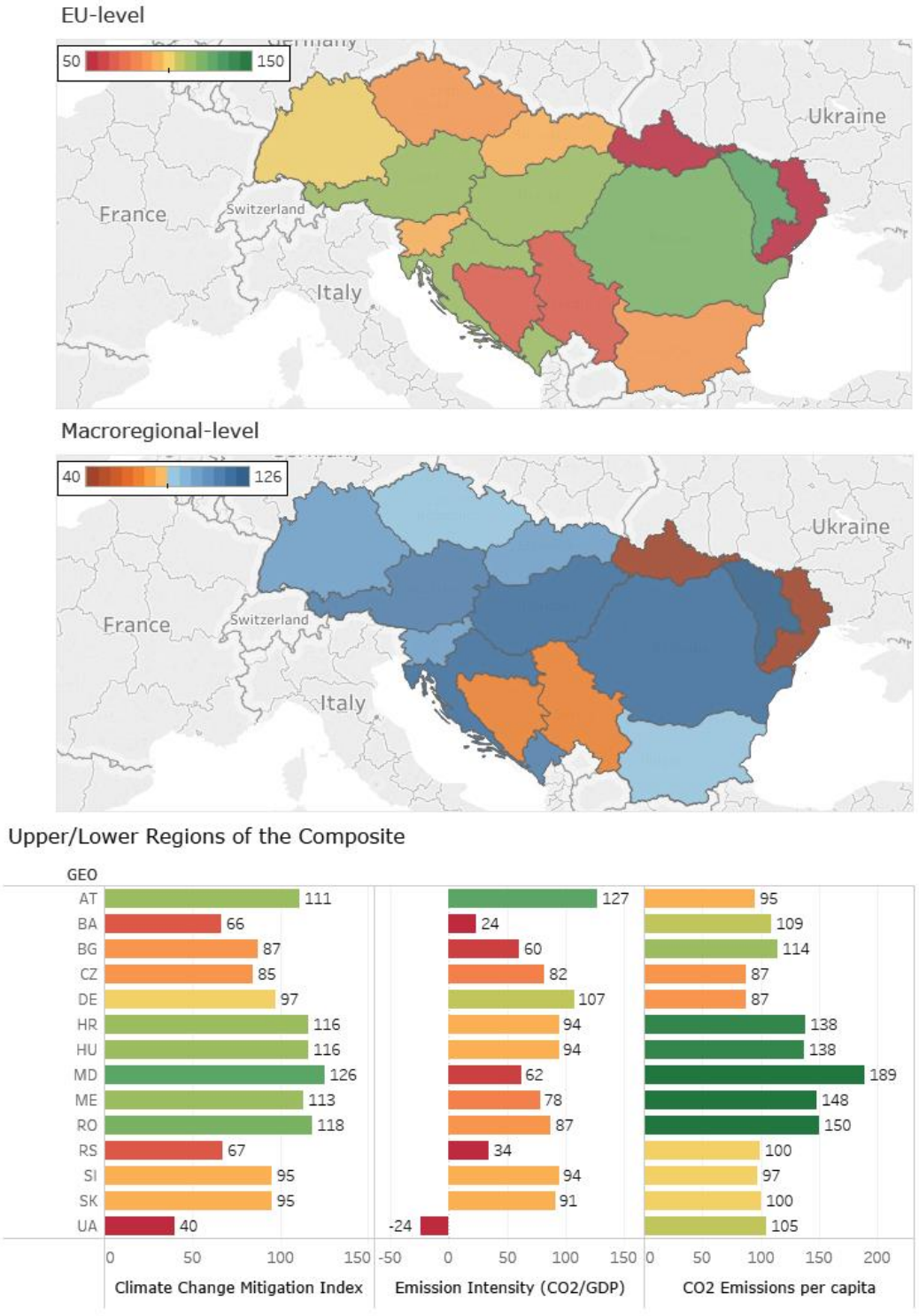
[62] URL: https://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/CLIMATE/ESPON_Climate_Final_Report-Part_A-ExecutiveSummary.pdf

[63] *See footnote above*

Potential Vulnerability	The Danube macro-region features several countries that score below the EU-median: Bulgaria, Hungary, Romania, Slovenia, and Slovakia. On average, Bulgaria shows the highest potential vulnerability (68), as five out of six regions score below 80. Its northern neighbour Romania scores on average 74 points on the benchmark with weakest regions in the southern half. Hungary and Slovakia perform comparably better, but still have all regions below the EU-median. Austria performs on average above the average (108 points) and has the most vulnerable regions in its southern side. Germany and Czech Republic are both the strongest performers, and thus the least vulnerable. The regions of the former perform quite cohesive, and as the only country completely above the median.
Environmental Impact	The ESPON Climate study evaluates that environmental changes are mainly consisting of potential changes in summer and winter precipitation, annual mean temperature and annual mean evaporation in the environment. The picture of the environmental impacts is similar, with the same countries at the bottom end: Bulgaria (67), Slovenia (71), Romania (83), Hungary (85), and Slovakia (90). Especially in Bulgaria, half the region perform under 70. Similarly, the German (average of 108) and Czech regions (average of 115) lead the macro-region.
Economic Impact	Climate change can induce natural disasters with major economic and budgetary consequences. The economic impacts are similarly heterogeneous throughout the macro-region. While all NUTS-2 regions of the Czech Republic and almost all of Germany score above the median, the same countries are found in the bottom. In Romania, the capital region of Bucharest-Ilfov has the most severe economic impacts, separating it by the next most severely impacted region by 9 points. Looking at Austria, a third of the regions score below 90, and are the most mountainous ones of Austria.
Adaptive Capacity	Adaptive capacity measures the ability of a system to adapt to disturbances and its capability to respond to changes. This concept, in recent years, has become synonymous to a yardstick of effective environmental governance. This unique measure offers a combination of various indicators to calculate the robustness of the society faced with change. The value 1 indicates perfect adaptive capacity and 0 indicates inability to adapt. Adaptive capacity makes environmental governance measurable in complex social-ecological systems. The adaptive capacity is the highest in Austria and Germany, who have only regions scoring beyond the EU-median (nearly all score above 110). Although scoring high on all other composites, the Czech Republic's adaptive capacity is on average 94, which is lifted by Praha's strong adaptive capacity. Bulgaria and Romania score far below the average of the Danube macro-region, averaging 94 and 59. In Romania, the majority of regions scores below 60, and only Bucuresti-Ilfov scores 85. The Danube macro-region is in conclusion highly disparate, and features regions whose adaptive capacity does not match the potential impact.

2.5.8 Climate Change: Mitigation

Figure 2-25: Climate Change Mitigation Index by Country in 2013, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-22: Explanation of the indicator: 'Climate Change Mitigation'

The composite indicator for climate change mitigation is an average of two benchmarked indicators:
CO_2 emissions per capita.
CO_2 emissions per unit of GDP.
The first indicator, CO_2 emissions per capita, shows the average emissions per person in each country. This allows comparison on countries on equal terms. There is no regional data available since emissions are reported on a national level. Therefore, country level data was sourced from the World Bank's World Development Indicators database. The indicator name and code in the database: *CO_2 emissions (metric tons per capita) (EN.ATM.CO2E.PC)*. Latest available year for this indicator is 2013.
The second indicator, CO_2 emissions per unit of GDP, shows the carbon intensity of the economy: that is how much CO_2 is emitted for a monetary unit of GDP produced. There is no regional data available, since emissions are reported on a national level. Therefore, country level data was sourced from the World Bank's World Development Indicators database. The indicator name and code in the database: *CO_2 emissions (kg per 2010 US$ of GDP) (EN.ATM.CO2E.KD.GD).* Latest available year for this indicator is 2013.
Benchmarking: both indicators were benchmarked against the EU-level median, highest and lowest performing countries. Since the lower values of emissions are preferred, the scale was inverted during benchmarking. The resulting benchmarked figures therefore indicate better performance with higher values.

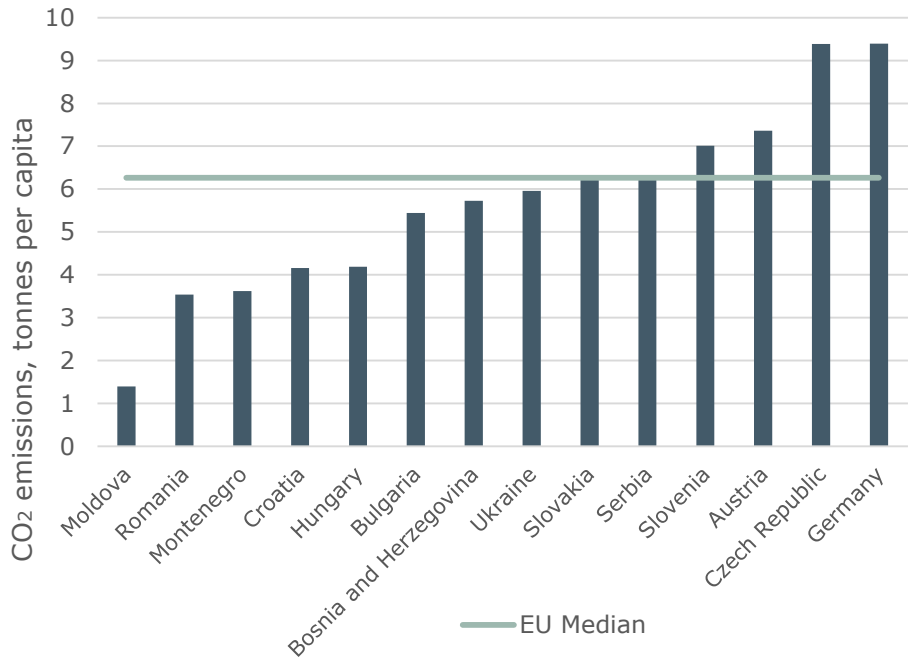
For the Climate Change Mitigation theme, two indicators were selected: CO_2 Emissions per capita and *CO_2* Emissions per unit of GDP. While several gases contribute to greenhouse gas emissions, CO_2 represents its main component in most sectors, and over 80% in the EU[64].

Among the EU countries, Luxembourg has the highest level of CO_2 emissions per capita, at over 18 tonnes per average inhabitant. Meanwhile Latvia emits the lowest amount, at 3.5 tonnes of CO_2 per capita. When CO_2 emissions are expressed per unit of GDP, Sweden is the leader in the EU at only 87 kilograms per thousand US$ of GDP, according to the World Bank data. For this indicator, Estonia scores worst, emitting 10 times more CO_2 than Sweden per unit of economic production.

In the Danube macro-region, Germany and the Czech Republic show the highest levels of emissions per capita with values exceeding 9 tons per capita and the EU-median by 50% (Figure 2-26). Moldova registers the lowest emissions in this group with 1.4 tonnes per capita, which is lower than the above-mentioned EU-minimum value. Romania and Montenegro have just a little higher emissions than the EU-level top-performer. The majority of other countries in the region score lower than the EU-median, meaning that the region as a whole shows a good performance on this indicator.

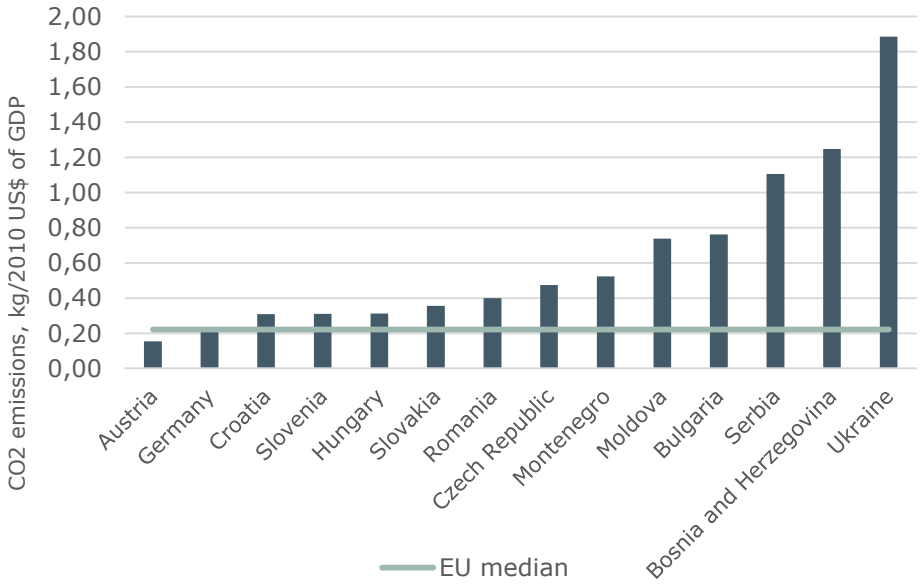
[64] http://ec.europa.eu/eurostat/web/environment/emissions-of-greenhouse-gases-and-air-pollutants/air-emission-accounts/database

Figure 2-26: CO_2 emissions per capita (tonnes), in the Danube macro-region, 2013. Source: World Bank



The countries with the highest emissions per unit of GDP in the macro-region are the Ukraine, Bosnia and Herzegovina, and Serbia (5-8 times above the EU-median), as shown in Figure 2-27. Contrary to the *per capita* indicator, the majority of countries in the region have higher than EU-median values of CO_2 emissions per unit of GDP. The only exceptions are Austria and Germany. This result could be a combination of a variety of factors: sectoral composition of the economy, climate, size, as well as efficiency in different sectors, and the energy mix.

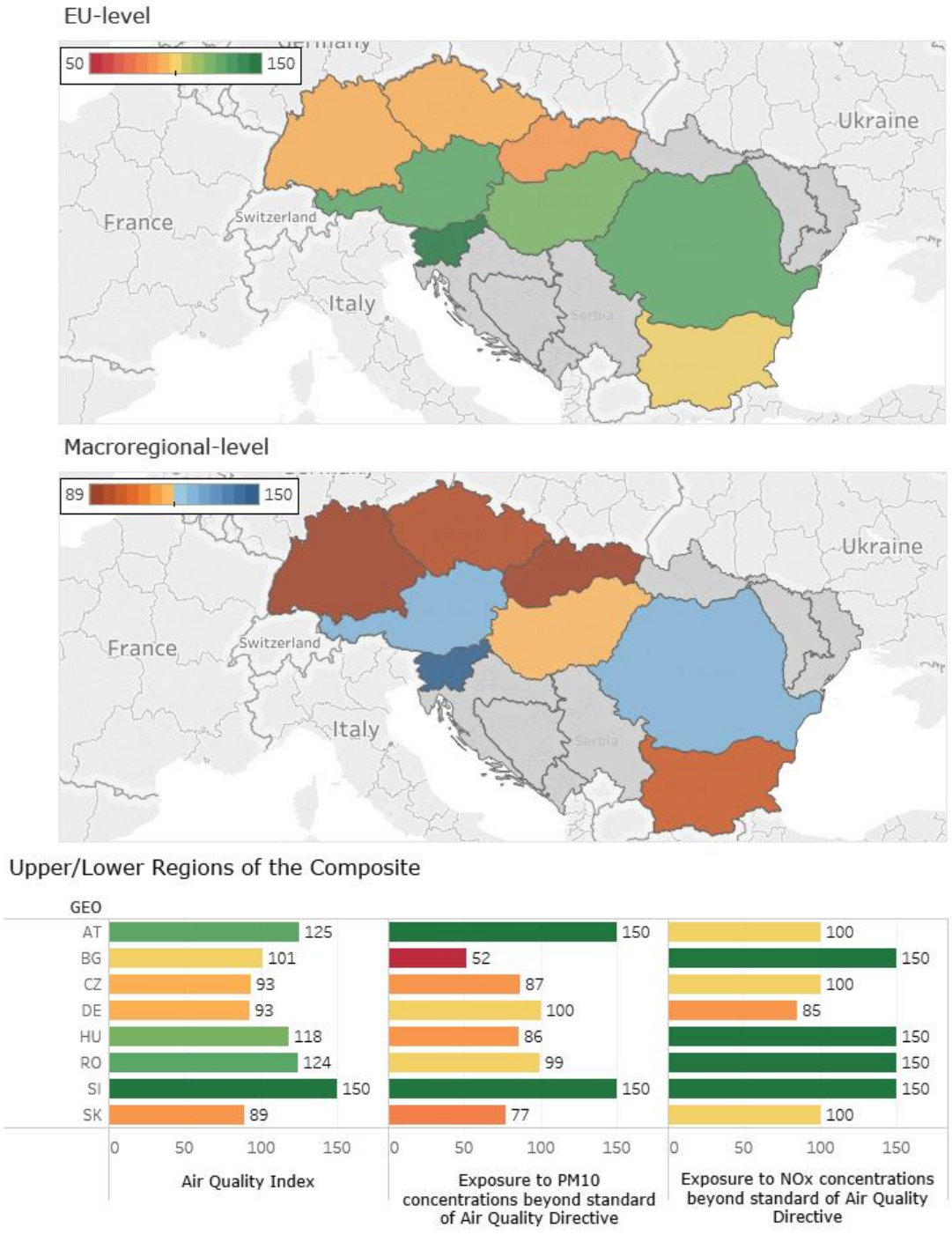
Figure 2-27: CO_2 emissions in kg per 2010 US$ of GDP, in the Danube macro-region, 2013. Source: World Bank



The benchmarked composite indicator which bundles the two indicators shows the best overall situation regarding the CO_2 emissions in 2013 in Moldova, with Romania, Croatia, Hungary, and Austria also exhibiting values above the EU-median. The lowest value for this indicator can be found in the Ukraine, somewhat lower than the EU minimum. The reason for this could lie in the sectoral composition of its economy, but no sectoral emission data or sectoral GDP is available for Ukraine.

2.5.9 Environment: Air Quality

Figure 2-28: Air Quality Index by country in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the values for each country



Text Box 2-23: Explanation of the indicator: 'Air Quality'

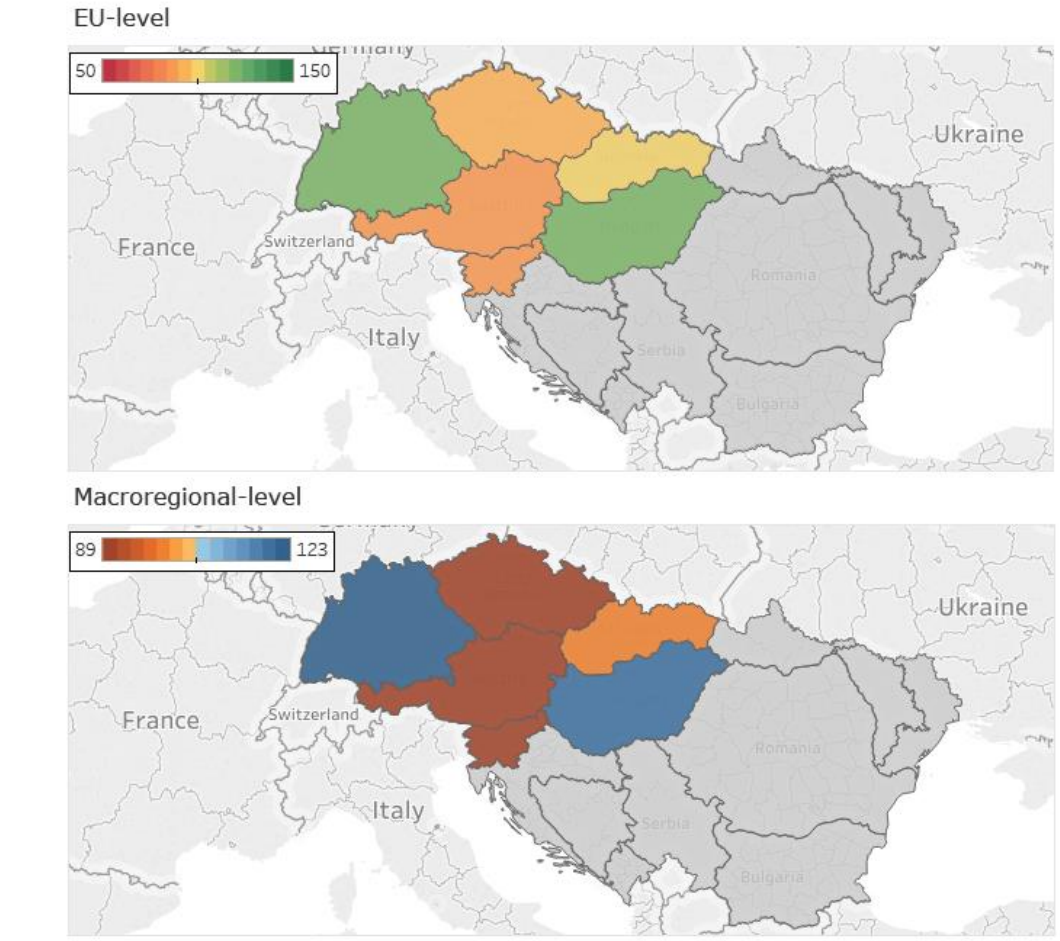
The theme Environment – Air Quality consists of 2 indicators: Share of urban population exposed to PM_{10} (particulate matter) above regulated threshold and Share of urban population exposed to NO_2 (nitrogen dioxide) above regulated threshold.
There are several air pollutants that have an adverse impact on human's health. The difference between PM_{10} and $PM_{2.5}$ is their size (in microns). These pollutants include dust, coming from construction, coal plants, bacteria and other organic dust. PM_{10} means all particles in size below 10 microns, while $PM_{2.5}$ means particles under 2.5 microns in size. Hence $PM_{2.5}$ is included in PM_{10}, and only the latter is used in this analysis. PM does not include gases like SOx and NOx; their concentration is calculated separately. While PM_{10} particles can penetrate only lungs, smaller $PM_{2.5}$ particles (visible only in electronic microscope) can pass from lungs into the blood supply.
The PM_{10} monitoring data at EEA – AirBase provide the basis for estimating the exposure of the urban European population to values of the PM_{10} higher than the daily limit value stipulated under the Air Quality Directive. This is set at 50 µg/m3 and should not be exceeded on more than 35 days during a calendar year. The exposure is estimated based upon PM_{10} measured at all urban and suburban background monitoring stations for most of the urban population, and at traffic stations for populations living within 100 meters from major roads.

The most exposed country to PM_{10} in 2014 in the macro-region is Bulgaria (97% of population is exposed to concentrations above the reference level for PM_{10}). Other countries with high exposure to PM_{10} in the Danube area (apart from Bulgaria) are Slovakia (46% of population is exposed to concentrations above the reference level for PM_{10}), Hungary (29%) and Czech Republic (27%). A lower exposure to PM_{10} can be found in Romania (3% of population is exposed to concentrations above the reference level for PM_{10}), Germany (1%), Austria and Slovenia each with 0%. Thus, the Danube region is quite strongly exposed to PM_{10}. The exposure to NO_2 is high for Germany (7% of population), 1% in Austria, Czech Republic and Slovakia and 0% in the rest of the countries of the macro-region.

The composite indicator combining the two indicators shows Slovenia, Austria, Romania and Hungary as best performers followed by Bulgaria. They all have values much higher than the EU-median, with Slovenia being the EU's top performer. The lowest performers are Slovakia, Germany and the Czech Republic, not far below the median. In comparison with the EU-level situation, the Danube region performs relatively well.

2.5.10 Environment: Air Pollution

Figure 2-29: Air Pollution Index by country in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the values for each country



Text Box 2-24: Explanation of the indicator: 'Air Pollution'

The theme Environment – Air Quality consists of 2 indicators: carbon monoxide emissions per capita and carbon monoxide emissions per 1000 USD GDP.
To compare the carbon monoxide emissions per capita and per unit of GDP (Kg per 1000 USD) of the individual European macro-region countries, data from the Organisation for Economic Co-operation and Development (OECD) has been used. Although data have not been available for the same year for every country in the analysis, the comparison gives a picture of the situation. This analysis excludes the following countries as there were no data available: Bulgaria, Croatia, Moldova, Romania and Ukraine.

CO emissions per capita

The countries of the Danube macro-region produced a combined amount of 327.02 kg carbon monoxide emissions per capita in 2008. In the macro-region, Hungary is leading the ranking with 38.65 kg of produced emissions per capita, followed by Germany with 42.53 kg per capita. Slovakia, Czech Republic, and Slovenia follow with values ranging from 45.54 to 64.68 kg per capita in Slovenia. Austria registers the highest emissions amount of 73.06 kg per capita.

The country ranking stays the same in 2014, however the combined carbon monoxide emission outcome decreased to 273.50 kg per capita, which corresponds to a reduction of 16%. The three best performing countries are Hungary, Germany and Slovakia (with values ranging from 29.41 in Hungary to 41.57 kg per capita in Slovakia). Czech Republic and Slovenia follow with values of 50.59 and 52.41 kg per capita. Austria registers with 62.95 kg of produced carbon monoxide emissions per capita the highest value in the macro-region.

CO per unit GDP

In the Danube macro-region, the analysed countries produced a combined amount of 10.69 kg carbon monoxide emissions per 1000 USD GDP in 2008. Best performing is Germany with a total of 1.06 kg per 1000 USD GDP, followed by Hungary with 1.69 kg per 1000 USD GDP. On the third and fourth place are placed Austria and Slovakia with 1.70 and 1.84 kg per 1000 USD GDP, while Slovenia and the Czech Republic come in on fifth and sixth place with values of 2.16 and 2.24 kg per 1000 USD GDP.

In 2014, the countries of the macro-region produced a combined total of 8.91 kg carbon monoxide emissions per 1000 USD GDP, which is a combined decrease of 17% of the produced carbon monoxide emissions. The country ranking stays the same, except for Slovenia, which was outperformed by the Czech Republic. Slovenia is placed on the last place in the Danube macro-region in 2014. The values for the carbon monoxide emissions produced by the countries are: Germany 0.86; Hungary 1.27; Austria 1.47; Slovakia 1.57; Czech Republic 1.83; Slovenia 1.91 kg per 1000 USD. There are no data available for Bulgaria, Croatia, Moldova, Romania and Ukraine.

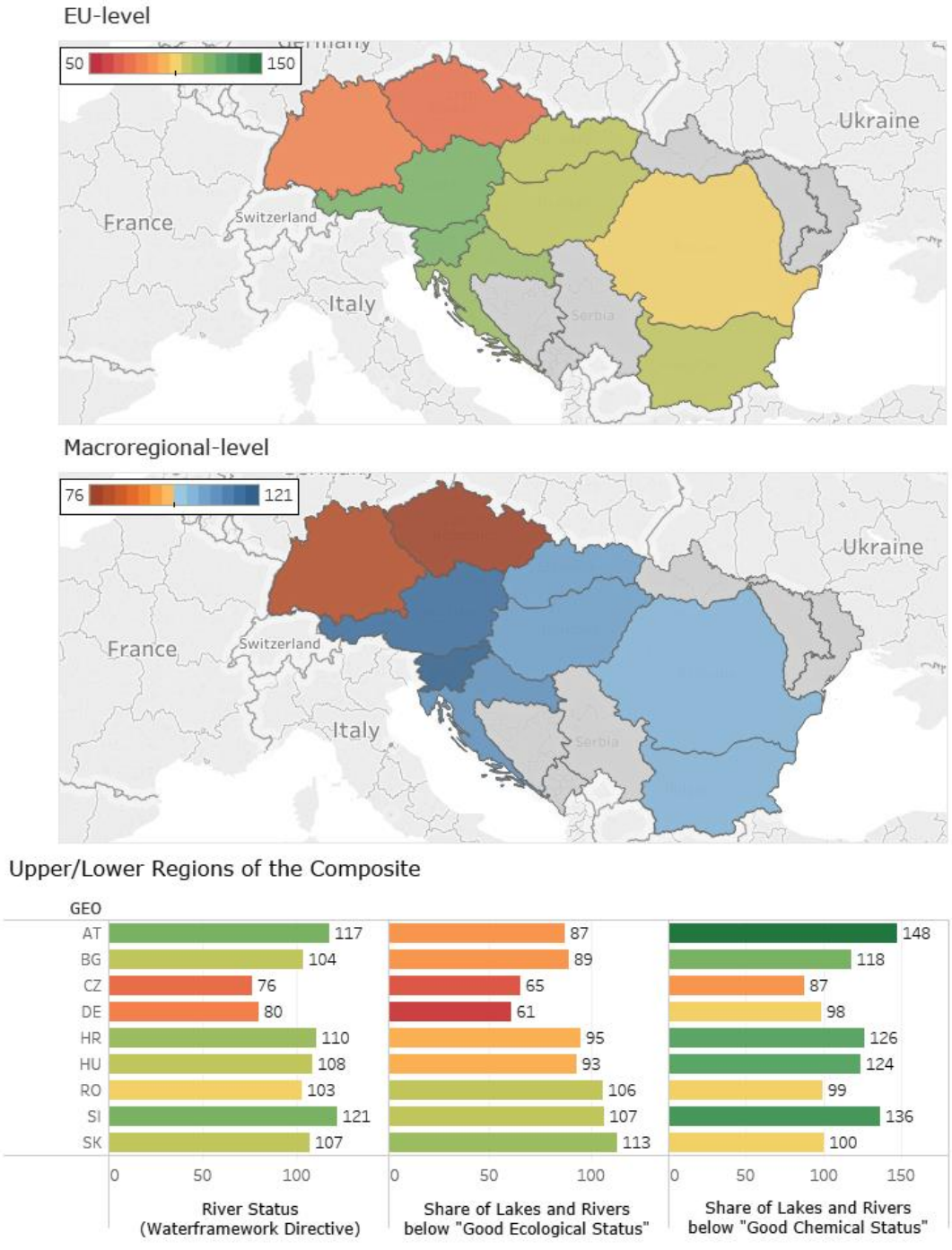
Composite

The composite indicator combining the two indicators shows for 2014 Germany and Hungary as best performers followed by Slovakia. They all have values better or around the EU-average. The lowest performers are Austria, Slovenia and the Czech Republic. Compared to the year 2008 the ranking did not change.

Note that the benchmarking inverts the scale, so that higher values indicate lower emissions.

2.5.11 Environment: River Status

Figure 2-30: River Status by country, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-25: Explanation of the indicator: 'Waterbodies'

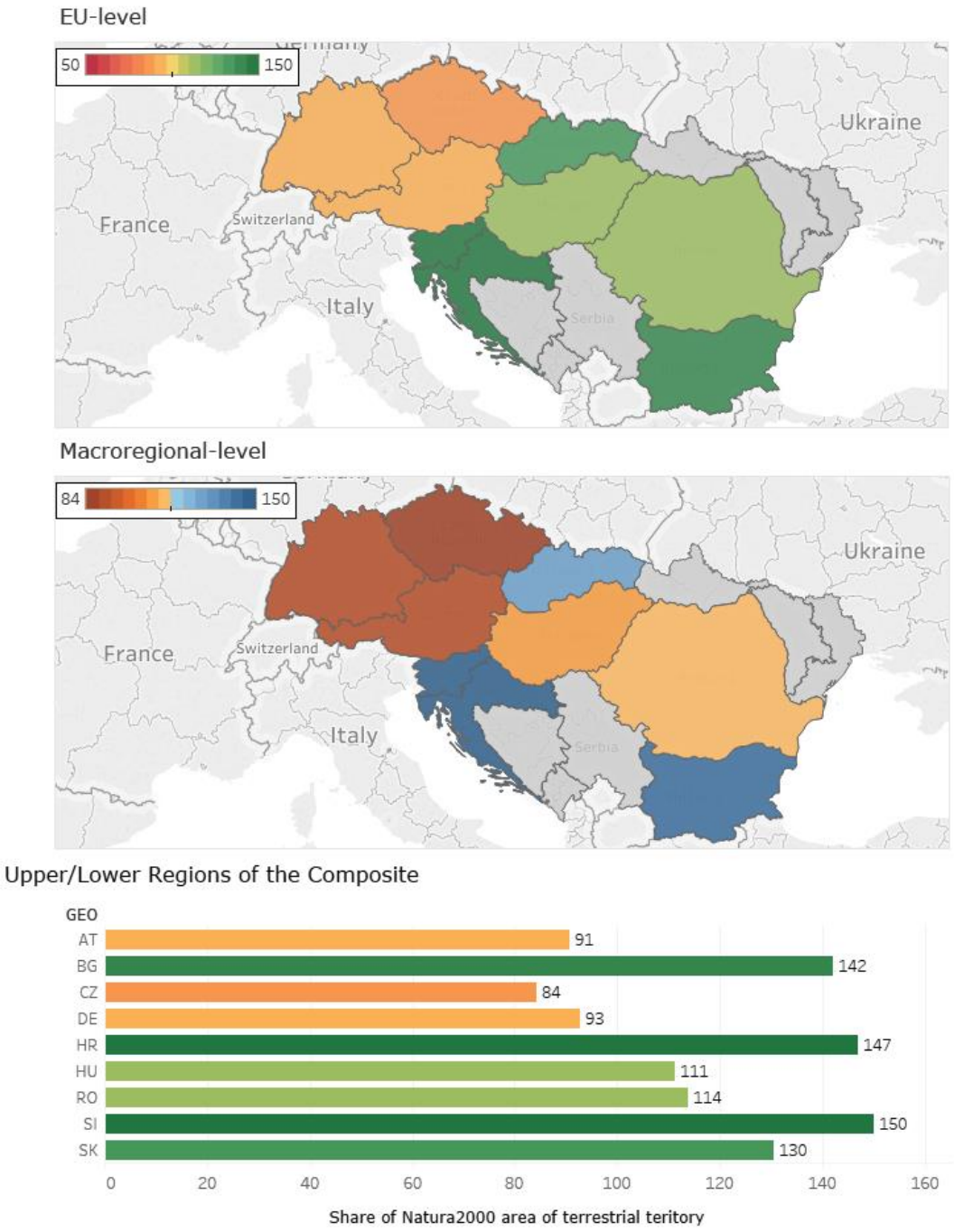
Anthropogenic activities adversely impact the waterbodies of Europe; mostly through the use pesticides and fertilisers in agriculture. Of which the latte leads to eutrophication of waterbodies, which negatively impacts the aquatic biodiversity, due to an excessive bloom of algae's.
In order to improve European Waterbodies, the EU commissioned the Water Framework Directive, which requires the Member States to achieve at least "Good Ecological Status" and "Good Chemical Status" of surface waters[1]. Ecological Status refers to biological and hydrological quality of the water, and its "chemical characteristics"[1]. The ecological status can be classified into four categories: High, Good, Moderate, and Poor. The chemical status describes in turn the water's quality in terms of it content of chemical substances, and is classified as either Good or Fail.
The categories of surface waters under this directive are coastal waters, transitional waters, rivers, and lakes.
The Directive set 2015 as the year, until which all waterbodies had to achieve a good status. However, this was not achieved, and a re-drafting of the Water Framework Directive is scheduled before the end of this decade.
Fertiliser inputs from agriculture may also stream down into open seas. The resulting increased Nitrogen and Phosphorus concentrations promote the growth of phytoplankton. In order to estimate the biomass of phytoplankton, chlorophyll-a concentrations in water provide reliable inference [1]
The indicators in this section assess the share of waterbodies that are below good status. This is done for inland waterbodies (rivers and lakes) and sea waters (coastal and transitional waters) separately. For sea waters, also the chlorophyll-a concentrations are benchmarked.

When considering the ecological status of rivers and lakes, Slovakia, Slovenia and Romania have the lowest shares of waters of moderate, poor and bad quality with about less or about 40%. The highest shares of rivers and lakes of lower quality have Germany (about 87%) and the Czech Republic (about 83%).

A look at the chemical quality of rivers and lakes in the macro-region shows the largest share of fails in the Czech Republic with about 29% followed by Germany (about 8%). The highest chemical quality can be found in Austria and Slovenia (below 2% fails).

2.5.12 Biodiversity: Natura 2000

Figure 2-31: Natura 2000 share by country in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the benchmarked values for each country.



Text Box 2-26: Explanation of the indicator: 'Natura 2000'

The indicator shows what proportion of territory is covered by terrestrial Natura 2000 sites at the country level. This gives an indication of a country's efforts towards biodiversity, conservation and sustainable use of its territorial areas. It includes both sites designated under the Birds and the Habitats Directives, and accounts for any overlaps. The marine areas are not included in the proportion of land area, although some countries have designated substantial marine zones as Natura 2000 sites.

The indicator is published in the Natura 2000 Barometer (for the current value at the end of 2015) and the Natura Newsletter for other years.

Ukraine, Moldova, Montenegro, Serbia and Bosnia-Herzegovina are not included in the Natura 2000 Barometer data set.

Natura 2000 is "a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right."[65] It covers both terrestrial and marine zones in all 28 EU countries. The network includes sites designated under the Birds Directive and under the Habitats Directive. The indicator used is the proportion of land area covered by Natura 2000 sites under both Directives.

In the EU as a whole, 18% of land area is designated as Natura 2000 sites. The top performer in the EU is Slovenia with nearly 38% of its area designated as either Sites of Community Importance under the Habitats Directive, or Special Protection Areas under the Birds Directive (or both). Denmark, on the other hand, has only 8.3% if its area designated as Natura 2000 sites. The EU-median is 17%. These values are used for benchmarking the values of each country.

In general the majority of countries in the Danube macro-region have higher values than the median benchmark. Among them, Slovenia, Croatia and Bulgaria have the highest shares of their territory designated as Natura 2000 sites (see Table 2-14). Czech Republic and Austria have the lowest shares, somewhat below the EU-median benchmark. Since they are landlocked they do not have any marine areas designated as Natura sites, meaning they are, in fact, the countries with the lowest performance in this respect.

[65] http://ec.europa.eu/environment/nature/natura2000/index_en.htm

Table 2-14: Indicator and benchmarked indicator values for Natura 2000 indicator

Country	% of territory designated as Natura 2000 site	Benchmarked value
Austria	15.1	91
Bulgaria	34.5	142
Czech Republic	14.0	84
Germany	15.5	93
Croatia	36.6	147
Hungary	21.4	111
Romania	22.6	114
Slovenia	37.9	150
Slovakia	29.6	130

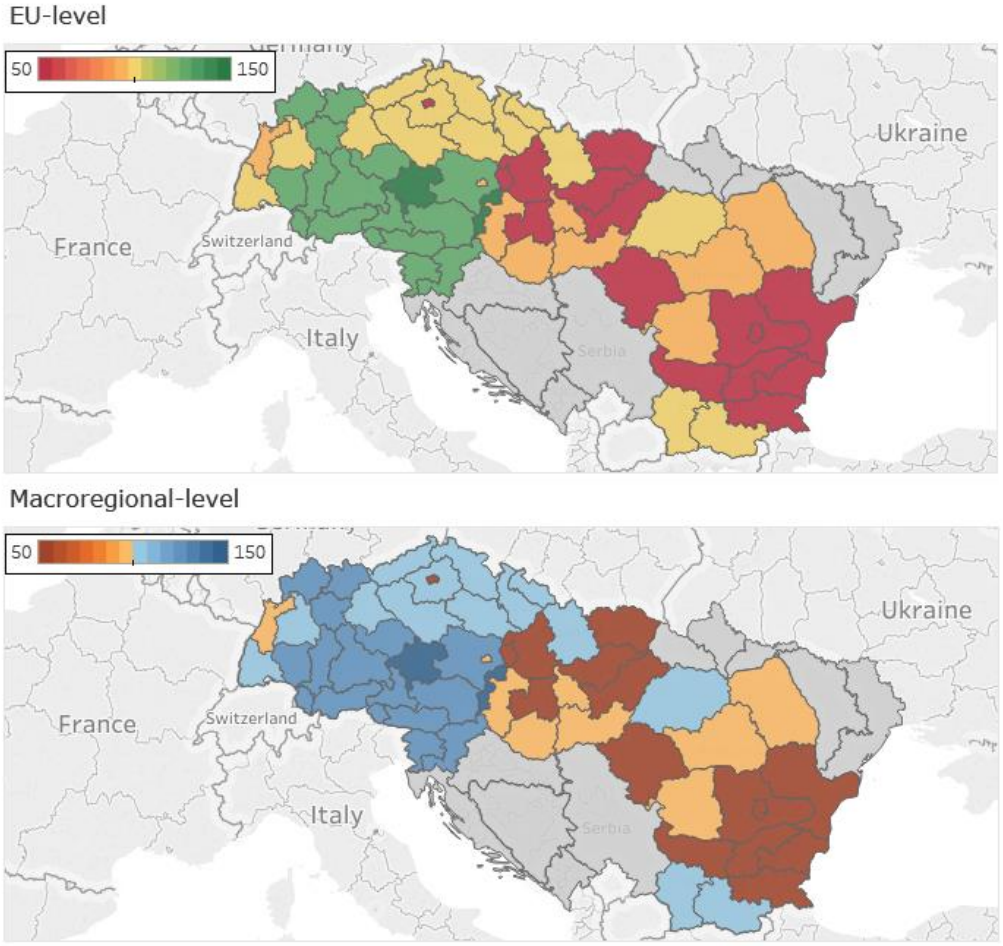
In comparison to the Member States of this macro-region, the enlargement countries have a substantially lower share for 2007, as the table below shows: Merely 4.5% on average, which is about five times smaller than the Member State average. Yet, it should be noted that this data is three years older, and thus not well-comparable.

Table 2-15: Share of territory as designated area in 2007 by country-level. Source: EEA.

	% of territory as designated area
Bosnia Herzegovina	0.8
Serbia	7.0

2.5.13 Diversity of Land Cover (Shannon Evenness Index)

Figure 2-32: Shannon Evenness Index by NUTS-2 level regions in 2012, on an EU-wide (top) and Macro-regional (middle) comparison.



Text Box 2-27: Explanation of the indicator: 'Shannon Evenness Index'

Shannon Evenness Index (SEI) used here was obtained from the LUCAS survey data. LUCAS is carried out in the EU countries.

This index takes values between 0 and 1, where 0 represents a completely homogenous landscape, i.e. where all area has only one type of land cover. On the other hand, the value of 1 represents a perfectly heterogeneous landscape, where all considered land cover types are present at equal amounts. Therefore when interpreting the values of this index, the higher values indicate higher land cover diversity. The indicator does not by itself provide a value judgement of different landscape types.

Data is available for all EU Member States in the macro-region, except Croatia, as it was gathered before Croatia's accession to the EU. Data is not available for Albania, Serbia, Montenegro and Bosnia and Herzegovina.

Note that due to the categorisation of data from the source, several regions score the same value on the benchmark. As a result, too many regions qualify as top or bottom scorers to be displayed in the bottom part of the figure.

Diversity of land cover refers to the number of different types of landscape present within a certain area. Some countries or regions might have vast areas covered with the same type of cover, others might consist of many smaller areas with a variety of types of land cover and land use.[66] Eurostat's land use/cover area frame survey (LUCAS) gathers data on land use cover, by direct observation in the field.[67] The survey is carried out every three years in all EU Member States, with latest survey conducted in 2015. However the latest published survey is from 2012, carried out in 27 EU countries, before Croatia's accession. From the data gathered in these surveys, a measure on landscape diversity – Shannon Evenness Index – can be inferred. At the EU level this index was 0.7 according to the 2012 survey, varying from around 0.4 to over 0.8 on a NUTS-2 region level.

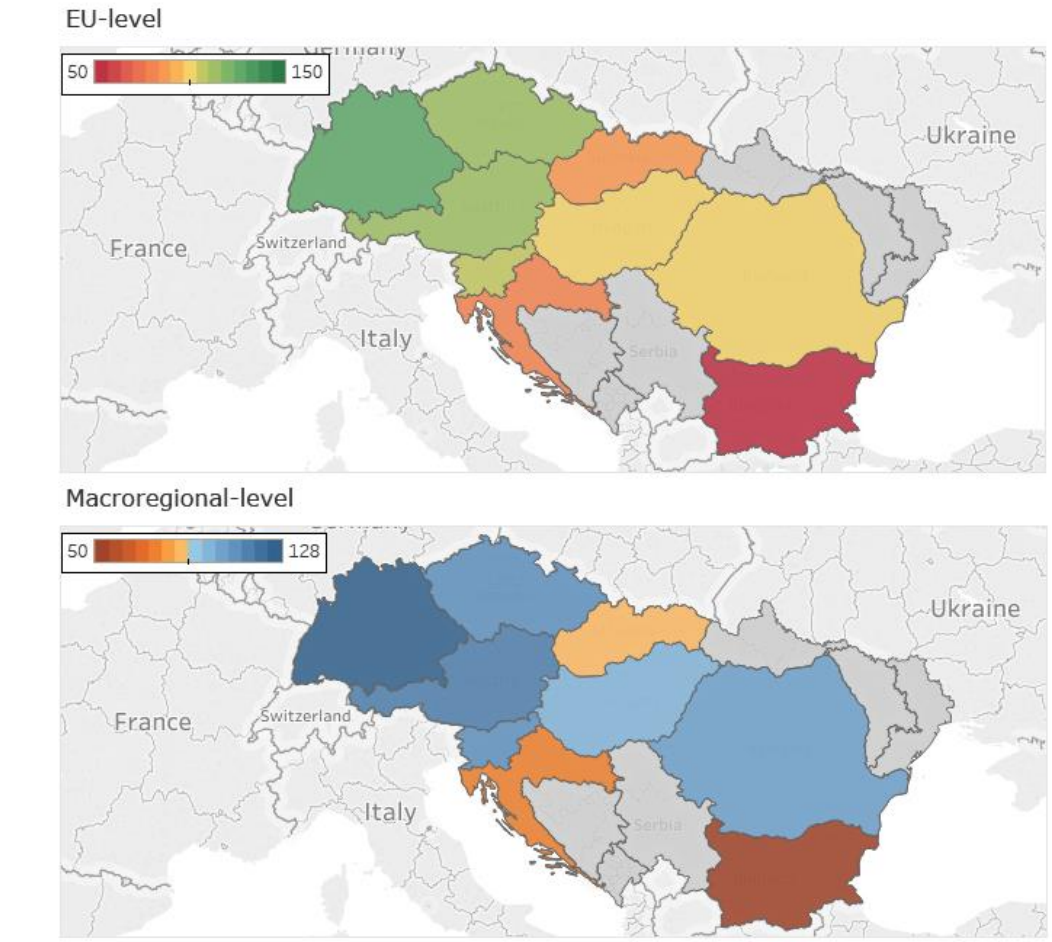
In the Danube macro-region, the NUTS-2 regions of Austria and Slovenia score the highest land cover variances, with SEI values over that found on the EU level. It is particularly the Danube valley regions that show high diversity. Slovakia and Hungary exhibit the lowest SEI values. This could be because they are relatively homogenous countries with a strong dominance of one land cover type. In the case of Hungary the dominant land cover type is cropland; in the case of Slovakia the dominant land cover type alternates between cropland and woodland dependant on the NUTS-2 region. Meanwhile Germany and the Czech Republic remain close to the EU average value of SEI. Bulgaria has relatively low landscape diversity, except of two Southern regions, and Romania has relatively high land cover variance in the Northern regions, as shown in Figure 2-32.

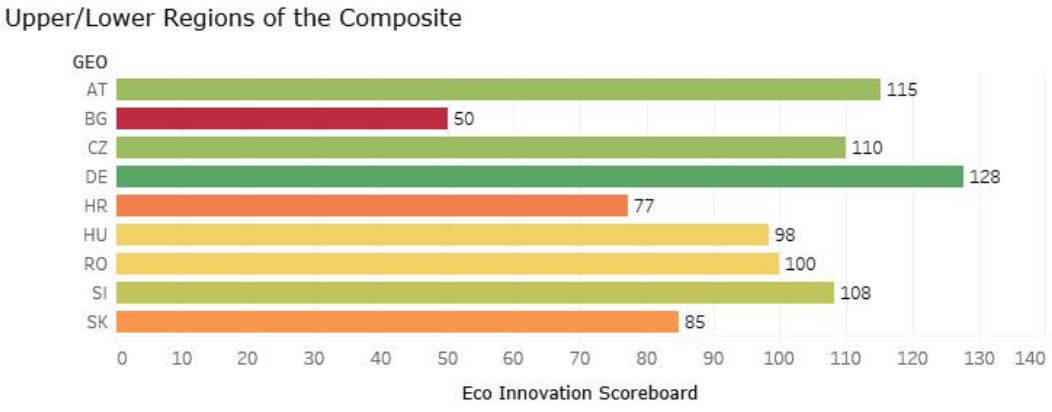
[66] http://ec.europa.eu/eurostat/statistics-explained/index.php/Land_cover_and_land_use_(LUCAS)_statistics

[67] http://ec.europa.eu/eurostat/web/lucas/methodology

2.5.14 Eco-Innovation Scoreboard

Figure 2-33: Eco Innovation Scoreboard by country in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components





Text Box 2-28: Explanation of the indicator: 'Eco-Innovation Scoreboard'[68]

The Eco-Innovation Scoreboard (Eco-IS) and the Eco-Innovation Index measure the eco-innovation performance across the EU Member States. Different aspects of eco-innovation are measured by using 16 indicators grouped into five dimensions: eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency and socio-economic outcomes. The Eco-Innovation Index pictures the performance of individual Member States in different dimensions of eco-innovation compared to the EU average by stressing their strengths and weaknesses. The Eco-IS and the Eco-Innovation Index show a picture on economic, environmental and social performance. [1]

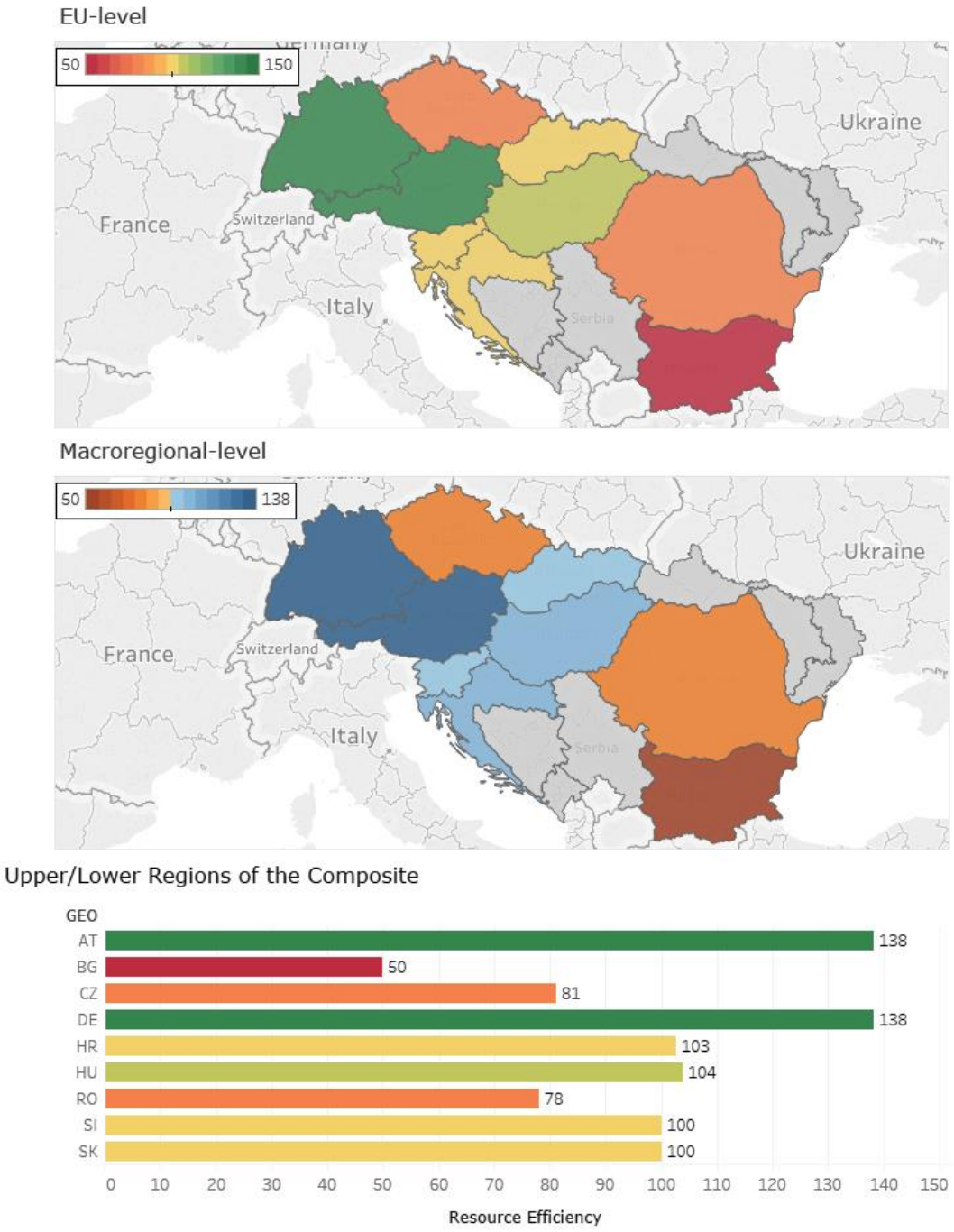
The Eco-Innovation Index is a composition of indices for eco-innovation inputs, eco-innovation activities, eco-innovation outputs, resource efficiency outcomes and socio-economic outcomes. Each of these indices consists of many sub-indices. It is only published for the Member States of the European Union. The latest data available refers to the year 2015. The basic value for this index is the average of all 28 Member States of the European Union.

The overall performance concerning the scores for eco-innovation is in the Danube region quite low. Only two countries, namely Germany and Austria show scores above the European average. Germany performs best with 29% above the EU-average, followed by Austria with 8%. All other countries which are assigned to the Danube region perform substandard. However the Czech Republic and Slovenia show values which are slightly below the average. The Czech Republic's value is only 1% below the European average and Slovenia's value is only 4% below the average. Hungary and Romania exhibit values which are by about 20% below the average. The lowest values in the Danube macro-region are found in Bulgaria and Croatia. These are 51% and 73% respectively below the EU-average.

[68] https://ec.europa.eu/environment/ecoap/scoreboard_en

2.5.15 Resource Efficiency (composite of Eco Innovation Scoreboard)

Figure 2-34: Resource Efficiency by country in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-29: Explanation of the indicator: 'Resource Efficiency' [69]

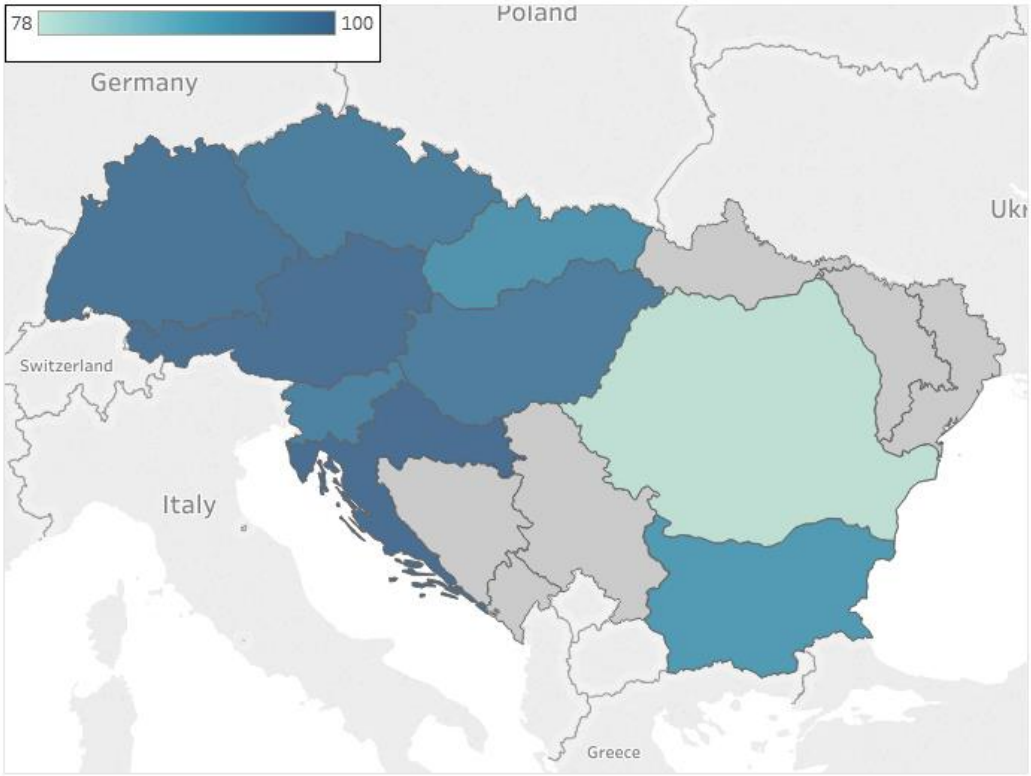
Eco-innovation can at the same time rise the creation of economic value, while reducing pressures on the natural environment.[1]
"The component of resource efficiency outcomes puts eco-innovation performance in the context of a country's resource efficiency. The four indicators in the component of resource efficiency outcomes are: Material productivity (GDP/Domestic Material Consumption), Water productivity (GDP/Water Footprint), Energy productivity (GDP/gross inland energy consumption), GHG emissions intensity (CO_2e/GDP)."[1]
The Resource Efficiency Index is only published for the Member States of the European Union. The latest data available refers to the year 2015. The basic value for this index is the average of all 28 Member States of the European Union.

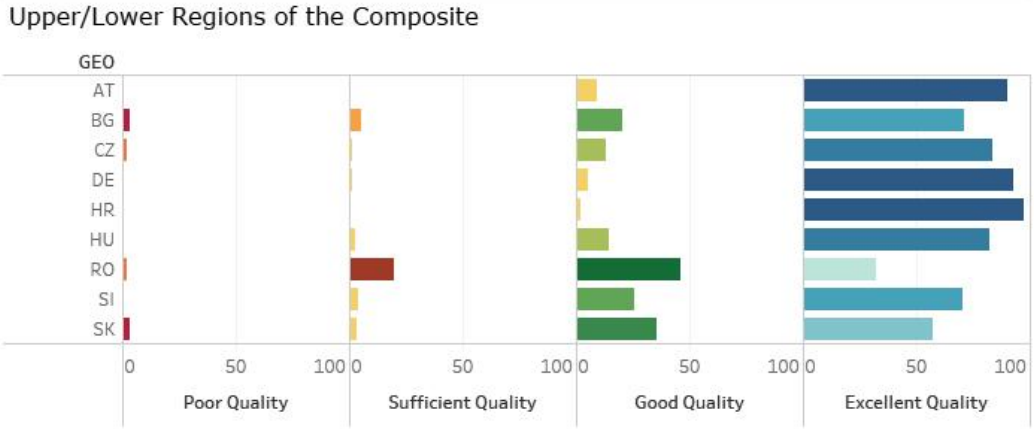
The two best performing countries of the Danube region are Austria and Germany. Both perform 7% better than the European average. The other countries, which are part of the Danube macro-region have a lower performance on this indicator. The best performance among the rest of the countries exhibits Hungary, which scores 19% below the average. Croatia, Romania, Slovenia, Slovakia and the Czech Republic show values of the resource efficiency index between 20% and 36% below the EU-average. The lowest values of the indicator in the macro-region registers Bulgaria which performs by 54% below the average.

[69] https://ec.europa.eu/environment/ecoap/scoreboard/resource-efficiency-outcomes

2.5.16 Bathing Water Quality

Figure 2-35: Bathing Water Quality by country in 2015. The top figure shows the percentage share of a country's Bathing Waters with a 'Good' or 'Excellent' status. The bottom figure shows the percentage share of waters in the respective status category (sums up to 100%)





Text Box 2-30: Indicator description: Bathing Water Quality

The index of the bathing water quality of the evaluated regions is classified into four categories: excellent, good, sufficient and poor, which enables people to choose better quality bathing water. The indicator is expressed as proportion of bathing sites within each category. The report of the European Environment Agency published in 2016 was used for the analysis. It contains information about more than 21 000 European coastal and inland bathing water sites, from which 85% show an excellent water quality.
The theme bathing water quality consists of indicators evaluating the water quality for various kinds of water categories such as river, lake, coastal water and transitional water. The analysis is based on the information provided by the European bathing water quality report which is published every year by the European Environment Agency (EEA) and the European Commission, in order to help citizens to make informed choices concerning their touristic destinations.

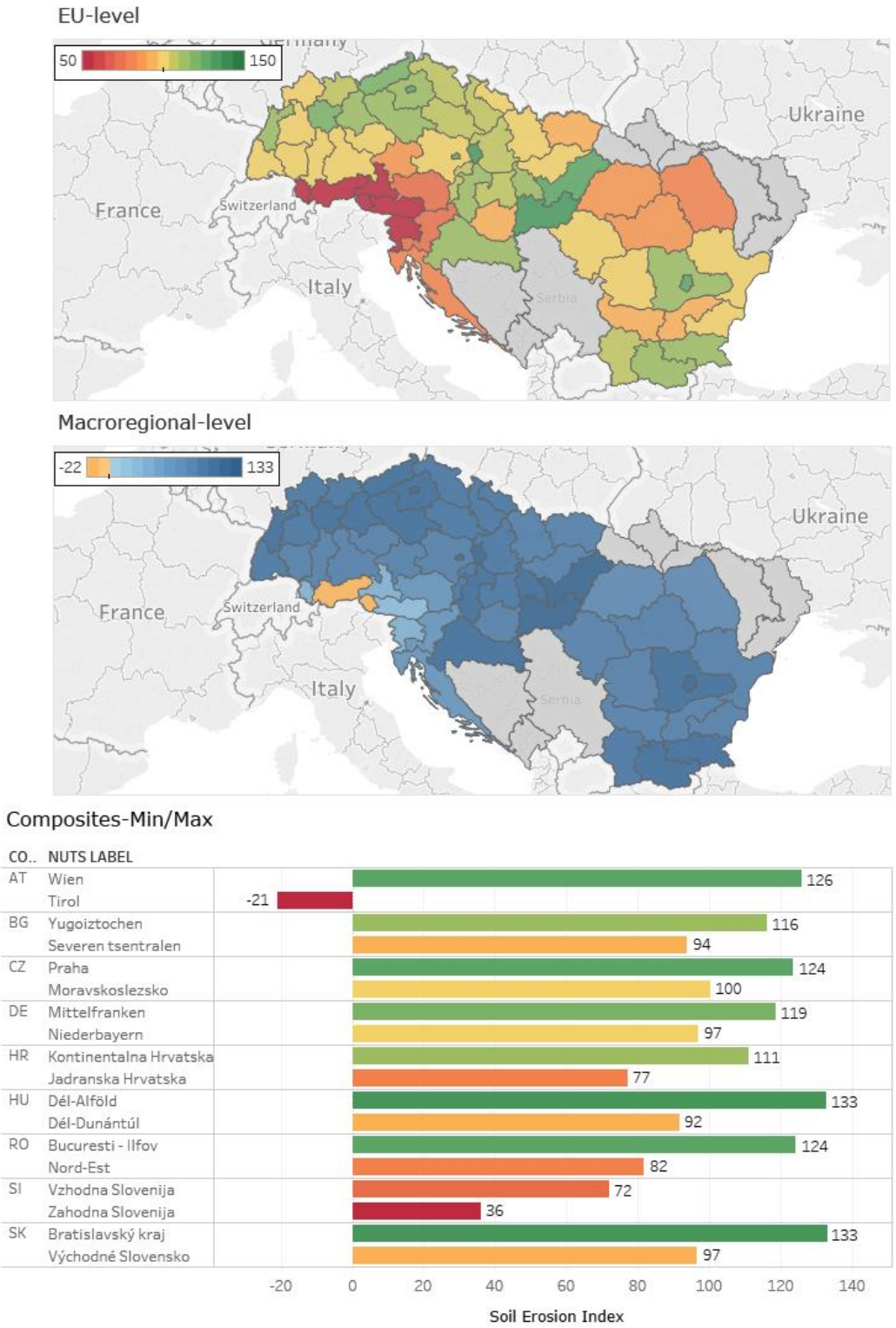
Note that since the analysis was conducted a new report was published (on the 23rd of May 2017).

The EEA report assesses the bathing water quality of all 28 EU Member States as well as of Albania and Switzerland. In the Danube macro-region, according to the evaluation of the EEA, Austria shows the highest results in bathing water quality. Germany also shows a high number of water sites with at least a good water quality, specifically Germany has 90.3% of excellent quality water sites and 6.3% which meet the Directive's standard for good. The majority of Croatia's water sites are qualified as excellent and many more are showing a good water quality. The Czech Republic also registers a high percentage of excellent bathing water sites, in total, 79.1% are qualified as excellent and 12.4% as good. According to the directive's standard 78% of Romania's bathing water sites have at least a good water quality. However, 20% were identified as only having a sufficient water quality and 2% did not meet the minimum standards and therefore have a poor water quality. Bulgaria is one of the EU Member States where more than 3% of the bathing water did not meet the minimum requirement standards and had poor water quality. Slovakia, as part of the Danube macro-region, is one of those countries where a large share of bathing water sites. However, it could not be classified since the sites were either newly opened, closed, not yet assessed or the required amount of samples had not been taken yet. Therefore 15.2% of the bathing water sites in Slovakia could not been evaluated.

2.5.17 Agricultural Impact

Soil erosion by water

Figure 2-36: Soil Erosion by NUTS-2 in 2010, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components.



Text Box 2-31: Explanation of the indicator 'Soil Erosion by Water'

The indicator used here is one of the 28 Agri-environmental indicators used to monitor environmental aspects under the EU's agricultural policy. It is expressed as estimated erosion of soil in tonnes per hectare per year[70] (i.e. how many tonnes of soil from a hectare is removed by water and deposited elsewhere). The indicator is aggregated for NUTS-3 region level, thus allowing assessment in the macro-regions. This indicator is not measured, but modelled using the Revised Universal Soil Loss Equation (RUSLE) model, methodology developed and documented by JRC.[71] The indicator is re-published by Eurostat, dataset [*aei_pr_soiler*], with the latest year 2010 at the time of downloading. This indicator covers the territory of the EU28, hence candidate and potential candidate countries are not included in the dataset.

Higher values of this indicator show higher erosion, hence poorer performance. When benchmarking, the scale is inverted, so higher values indicate a better situation, i.e. lower erosion.

Benchmark is calculated on a country level (i.e. EU-median, top and lowest performer on a country level), therefore some NUTS-2 regions may score below the minimum benchmark (50), or above the maximum benchmark (150).

Soil erosion is defined as the displacement of material from the land surface by water (rainfall, irrigation, and snowmelt) or wind. It is considered one of the main threats to soil, as acknowledged by the European Commission's Thematic Strategy for Soil Protection[72]. The strategy stresses the importance of soil and the impact erosion and other types of soil degradation has on the climate, water quality, food safety and biodiversity. Soil formation is a very slow process, and heavily eroded or otherwise degraded soil would take hundreds of years to regenerate. The rates of regeneration differ, and are estimated to be around 1.4t/ha/year in Europe (Verheijen et al., 2009[73]). According to JRC, to protect most vulnerable soils, rates of soil erosion above 1 tonne per hectare per year should be considered unsustainable, and more than 10 t/ha/year indicate a high-risk[74]. Indicator showing specifically soil erosion by water was chosen for two reasons. First, this type of erosion is more widespread than wind erosion. Second, even though no actual measures of erosion rates exist on the European

[70] URL: http://ec.europa.eu/eurostat/statistics-explained/index.php/Agri-environmental_indicator_-_soil_erosion

[71] Panagos, P., Borrelli, P., Poesen, J., Ballabio, C., Lugato, E., Meusburger, K., Montanarella, L., Alewell, .C. 2015. The new assessment of soil loss by water erosion in Europe. *Environmental Science & Policy*. 54: 438-447

[72] Communication COM(2006) 231; http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52006DC0231

[73] F.G.A. Verheijen, R.J.A. Jones, R.J. Rickson, C.J. Smith. 2009. *Tolerable versus actual soil erosion rates in Europe*. Earth-Science Reviews, 94 (1–4) (2009), pp. 23–38. This paper defines "upper limit of tolerable soil erosion" as that equal to the rate of soil formation.

[74] JRC. 2012. *The state of soil in Europe.* A contribution of the JRC to the EEA Environment State and Outlook Report.

level, there are good quality estimates for the entire territory of the EU, at a high level of resolution.

Data shows that the average erosion in the EU28 is 2.46 t/ha/year (Eurostat; Panagos *et al*, 2015). Generally the situation is better in the northern countries than elsewhere, the country with lowest erosion rate being Finland at 0.06t/ha/yr. Italy is on the opposite end of the scale with 8.5t/ha/yr. These values as well as the EU-median (2.1t/ha/year) are used in the benchmarking.

The Danube macro-region, shows an all in all moderate level of soil erosion. In general, around half of the NUTS-2 level regions in the Danube macro-region perform better than the median, meaning that in this respect the region is similar to the EU as a whole. However, the levels of soil erosion vary greatly within the macro-region. The Slovakian sub-region of Bratislavsky Kraj is reported to have the lowest level of soil erosion, with an indicator value of 0.7 tonnes per hectare per year. Two NUTS-2 regions in Hungary are also evaluated to have a level of soil erosion lower than the "safe" level of 1 t/ha/year, with values of 0.8 t/ha/yr in Dél-Alföld) and 0.9 t/ha/yr in Észak-Alföld). All three score 130 and above on the benchmarked scale. On the other side of the spectrum, five regions lie below the lowest performer on the EU level, with soil erosion estimated at 9.6 to 17.5 tonnes per hectare per year (which corresponds to 40 and -21 on the benchmarked scale). Four of these regions are the Alpine regions of Austria, and one is the Slovenian region Zahodna Slovenija, which has both mountainous and coastal areas. The Austrian regions in the Danube valley perform significantly better on this indicator, with values between 1 and 3.5 t/ha/yr (126 and 89 on the benchmarked scale).

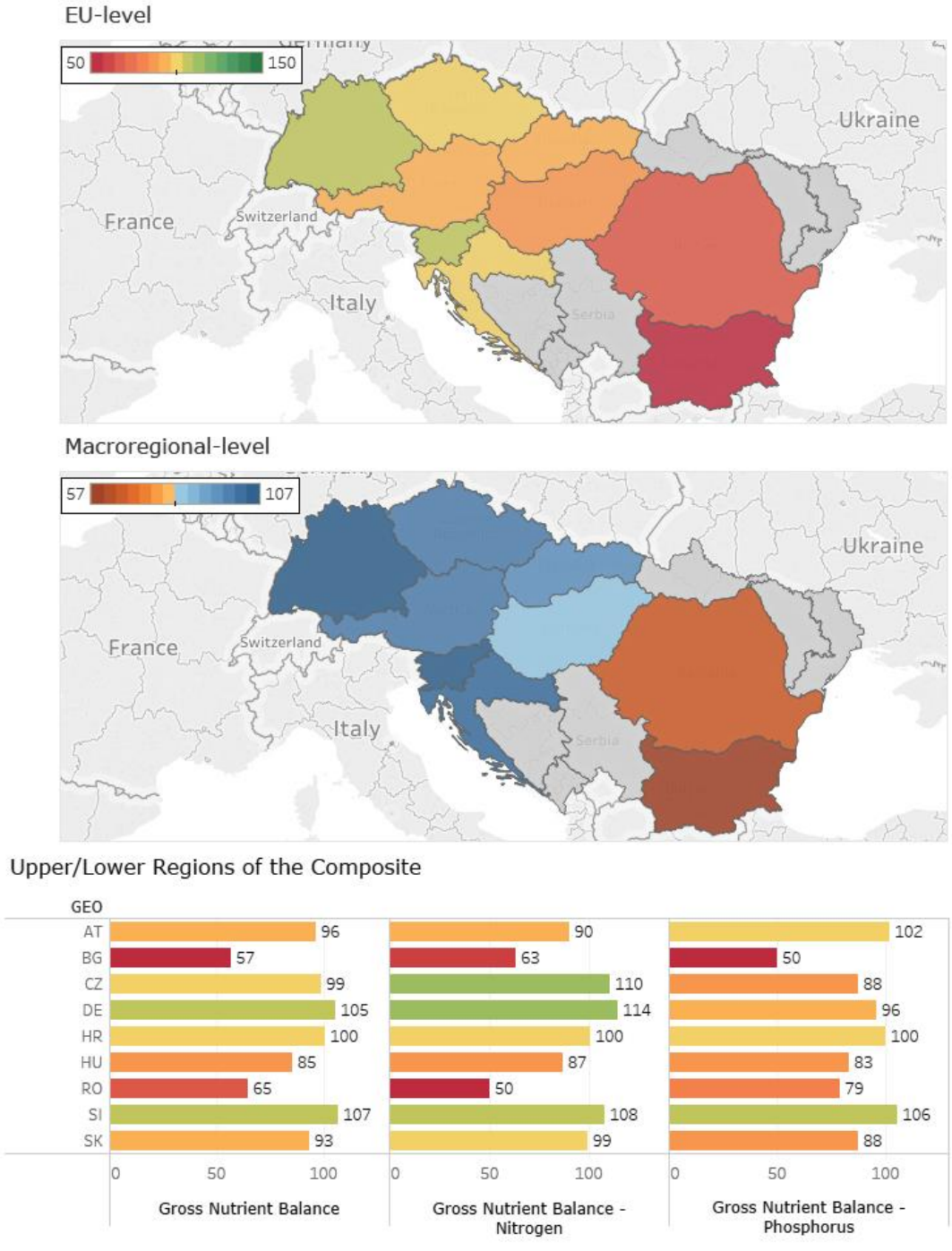
Regions in Slovakia and Hungary other than the top three all have values around the EU-median, with Hungarian regions showing a bit more variation. Similar situation can be observed for Czech Republic and Bulgaria, while in Romania most regions lie below the median, showing higher risk of soil erosion. Finally, in Croatia, the coastal region Jadranska Hrvatska performs significantly worse than the inland area Kontinentalna Hrvatska (4.98 and 1.62 t/ha/year respectively, benchmarked values 77 and 111). The latter is the region which is traversed by the Danube.

Soil erosion levels in the German NUTS-2 regions in the Danube macro-region are more homogeneous, with values better or only slightly worse than the EU-median. However, all areas in the Danube macro-region display values worse than that observed at the country-level. Northern parts of Germany (that are part of the Baltic Sea Region), perform better on this indicator, showing a level of commonality between areas in the Danube Region, arising due to similar geographical and climatic conditions while being distinct from other parts of the country.

Overall, the results indicate higher homogeneity between regions that lie closest to the Danube valley. Lowest values are found in the mountainous and coastal areas.

Gross Nutrient Balance

Figure 2-37: Gross Nutrient Balance by country in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-32: Explanation of the indicator: 'Gross Nutrient Balance'

According to EEA[75], the indicator Gross Nutrient Balance "estimates the potential surplus of nitrogen on agricultural land". The estimation accounts for nitrogen and phosphorus additions to agricultural lands as well as the amounts that are removed from the system, via crops harvested and eaten by feedstock.

The indicator measures the balance of nutrients, expressed as kg of nitrogen and phosphorus per ha of Utilised Agricultural Area (UAA).[76]

The data is available for EU countries only.

The composite indicator is the average of benchmarked gross nitrogen balance and gross phosphorus balance values.

The strong use of artificial fertilisation for crops in Europe, or more generally a surplus of nutrients, has several implications on the environment, of which most prominent are eutrophication and nitrification. While a too high and too long a surplus is not desirable, a deficit can also have negative implications for land-use.

In the Danube macro-region the picture of gross nutrient balance in the macro-region on country level is heterogeneous. Bulgaria registers a negative nutrient balance, while Romania displays a low positive nutrient balance. In Germany (85 kg/ha) and Slovenia (76 kg/ha) the balance is high positive. In the middle range Croatia, Hungary and Slovakia show balance values between 37 kg/ha and 54 kg/ha respectively. In the EU context, these values are only somewhat lower or higher than the EU-level median, with the exception of Bulgaria and Romania, which are significantly below this benchmark.

2.6 Political, Institutional & Governance Indicators

The political, institutional and governance indicators draw a picture on the political state of the macro-region. The indicators in this section inform about the quality of governance and the institutional capacity. In the context of Cohesion Policy, these indicators essentially reflect the likely capacity of the macro-region's countries to effectively pursue interventions on the economic, social as well as territorial cohesion.

In addition, the selected indicators in this chapter inform about the quality of civil freedom as well as the enforcement of law on macro-regionally relevant problems: Human trafficking and Drugs. The selected indicators are shown in the table below.

[75] URL: http://www.eea.europa.eu/data-and-maps/indicators/gross-nutrient-balance-1

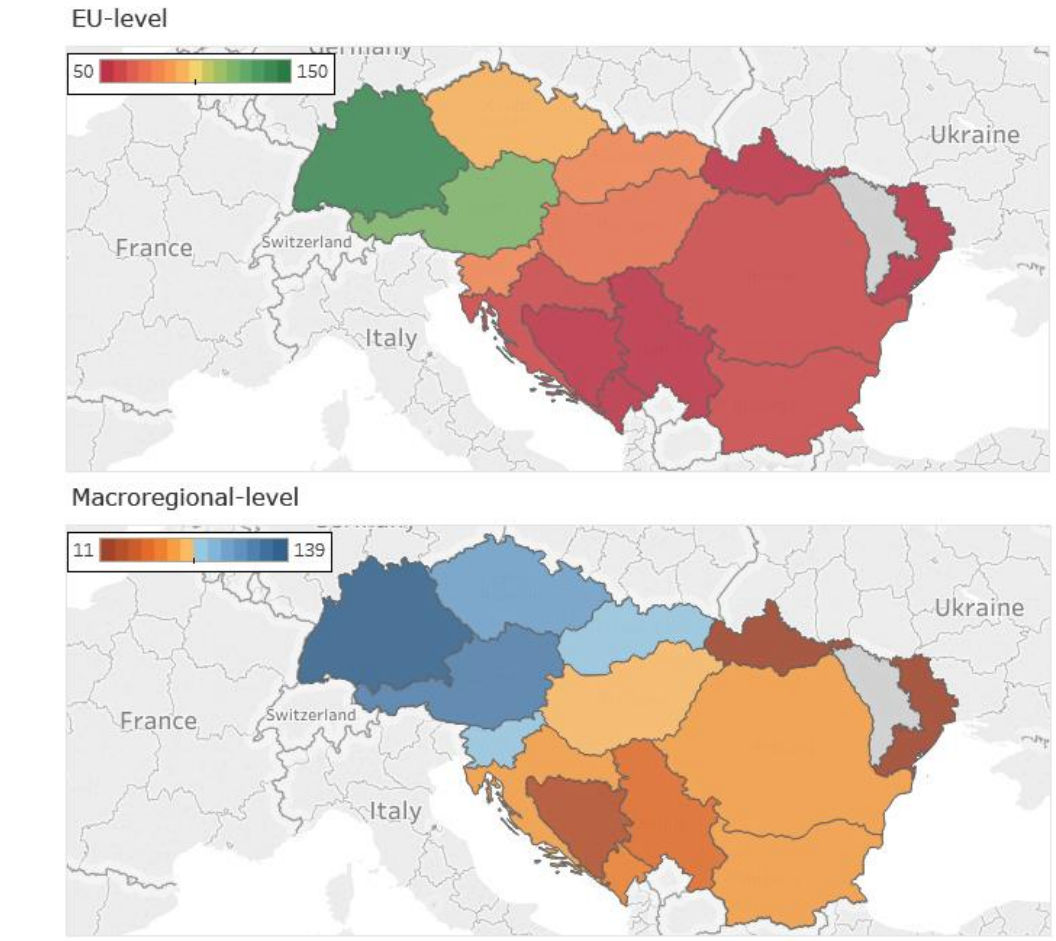
[76] http://ec.europa.eu/eurostat/cache/metadata/EN/aei_pr_gnb_esms.htm

Table 2-16: Overview of Political, Institutional & Governance indicators

Composite	Components
Governance	Government effectiveness
	Regulatory Quality
Public Institutions	*none*
Voice & Accountability	*none*
Human Trafficking	*none*
Number of Drug Seizures	*none*

2.6.1 Governance

Figure 2-38: Governance by country in 2015, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-33: Explanation of the indicator: 'Governance'

Governance is defined as the "processes of governing […] undertaken by a government […] over a […] territory […] through laws, norms, power or language."[77] It includes "the processes of interaction and decision-making among the actors involved in a collective problem that lead to the creation, reinforcement, or reproduction of social norms and institutions."[78] In this context, a government has the responsibility and authority to make binding decisions in a given geopolitical system (such as a state) by establishing laws.[79] Thus, Governance refers to the way the rules, norms and actions are structured, sustained, regulated and held accountable. A government may operate as a democracy, where citizens vote on the people who govern with the aim to achieve a public good.

The governance of the macro-region is analysed using two governance indicators: Regulatory Quality and Government Effectiveness. Regulatory Quality refers to "the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development"[80]. Government Effectiveness reflects the "perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies."[81] Both indicators are part of the World Bank's broader Worldwide Governance Indicators (WGI) Project of the World Bank Group.[82]

An analysis of the composite indicator Governance shows a high quality of governance in Germany and Austria with scores for this indicator amounting to 139 and 120 points, respectively. A value close to the EU-median can be found in the Czech Republic (95). While Germany and the Czech Republic improved their performance in the period 2008 to 2015, the position of Austria slightly deteriorated. Another group of countries in the middle/low position comprises of Slovakia, Slovenia, and Hungary with values ranging from 73 of the EU-median in Hungary to 81 in Slovakia. The position of all these countries deteriorated since 2008, as a results of declining regulatory quality and government effectiveness. The last group comprises Bulgaria, Croatia, and Romania with scores ranging from 57 of EU average in Romania to 61 in Croatia and Bulgaria. While in Croatia the value of this indicator slightly deteriorated since 2008 the position of Romania and Bulgaria improved significantly. In Romania, the improvement of the score of the composite indicator Governance was due to a strong rise in the score for regulatory quality. The lowest score for the

[77] *Bevir, Mark (2013). Governance: A very short introduction. Oxford, UK: Oxford University Press.*

[78] *Hufty, Marc (2011). "Investigating Policy Processes: The Governance Analytical Framework (GAF). In: Wiesmann, U., Hurni, H., et al. eds. Research for Sustainable Development: Foundations, Experiences, and Perspectives.". Bern: Geographica Bernensia: 403–424.*

[79] Wikipedia 2017, https://en.wikipedia.org/wiki/Governance

[80] URL: http://info.worldbank.org/governance/wgi/pdf/wgi.pdf

[81] URL: http://info.worldbank.org/governance/wgi/pdf/wgi.pdf

[82] URL: http://info.worldbank.org/governance/wgi/#home

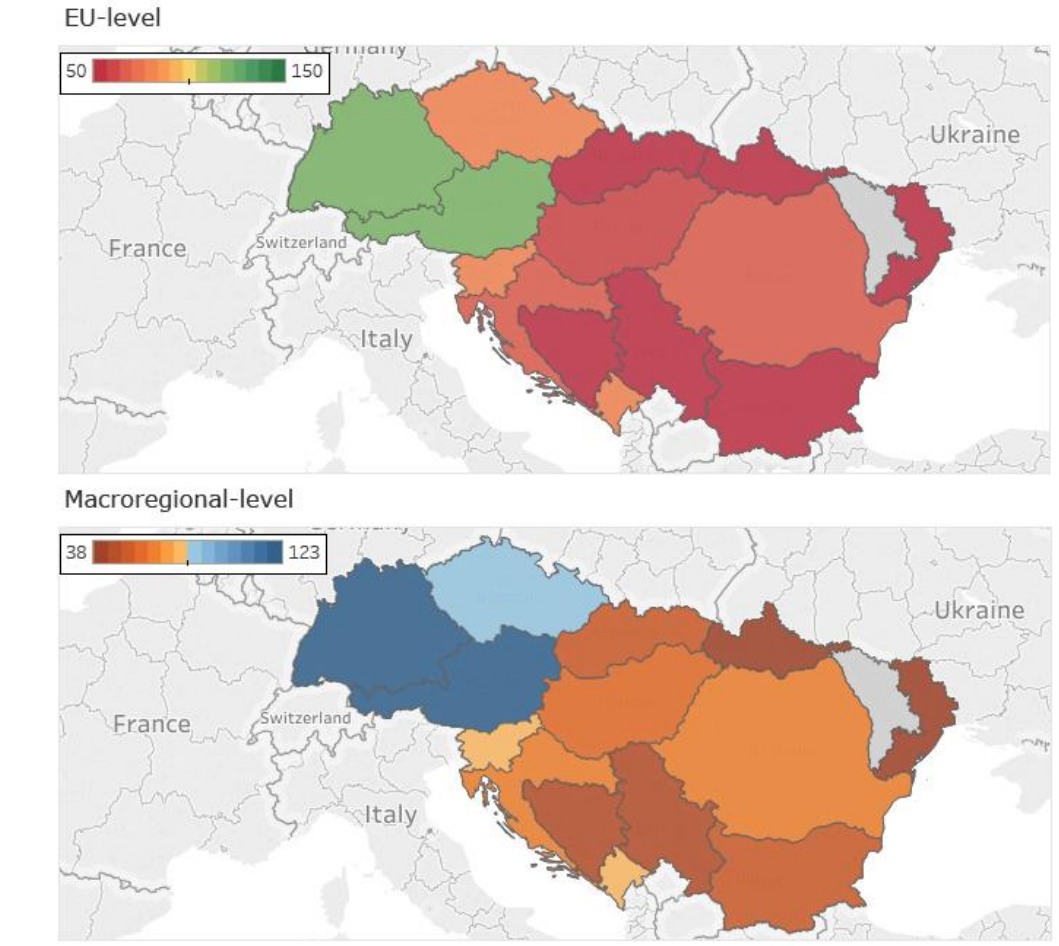
composite indicator Governance (11) is in Ukraine, score which has only slightly improved in the period 2008 to 2015.

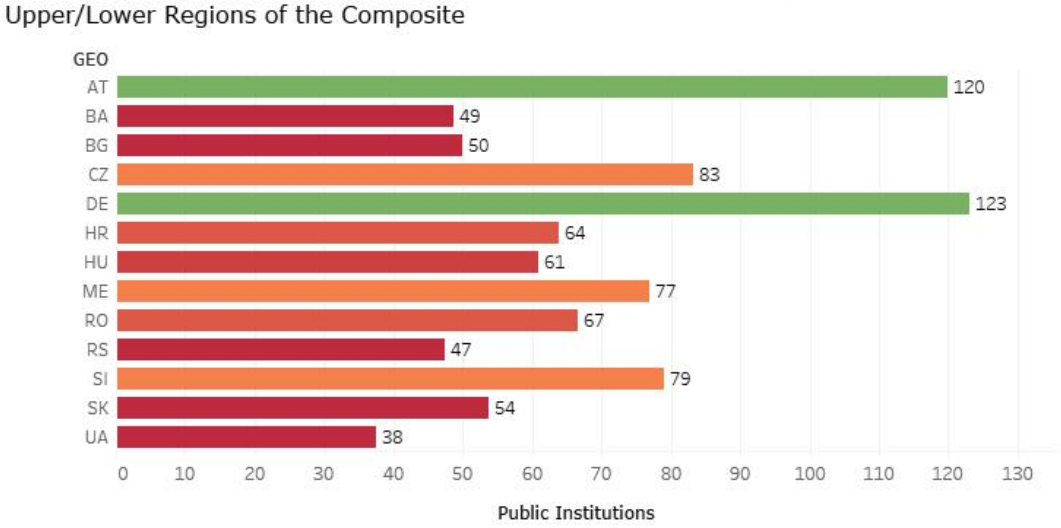
When it comes to the (potential) candidate countries of the Danube macro-region, Bosnia-Herzegovina (23), Serbia (46), Albania (46), and Montenegro (50) all score at the bottom or below the EU scale. However, while the score for Bosnia-Herzegovina has not change over time, all other countries in this group made considerable progress between 2008 and 2015, mainly due to improvements in regulatory quality.

Thus, the countries whose regions make up the macro-region exhibit a high variation ranging from the countries that perform very well on this indicator when compared to the EU as a whole and to countries where there is a significant scope for improvement. Old Member States perform better than newer Member States, and among the latter, the newest ones, Romania, Bulgaria and the most recent Member State Croatia have lower values than those that have been members for a longer time: Slovenia, Slovakia and not least the Czech Republic. The candidate countries (Montenegro and Serbia) are steadily approaching the governance standard found in the EU, while the Danube's only potential candidate country (Bosnia-Herzegovina) is still far below that standard.

2.6.2 Public Institutions

Figure 2-39: Public Institutions by country in 2015-2016, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components





Text Box 2-34: Explanation of the indicator: 'Public Institutions'

The indicator on public institutions is a composite of the World Economic Forum's (WEF) Global Competitiveness Index for 2016[83]. This composite consists in turn of indicators on 'property rights', 'ethics and corruption', 'undue influence', 'public-sector performance', and '(public) security'. The public institutions indicator thus reflects the quality with which public entities ensure that the "basic requirements"[84] of a competitive/fair economy are upheld. Vice-versa, it also reflects how much of an existing factor unfair or preferential treatment is. To a limited degree, this indicator also reveals the institutional capacity, mostly reflected through the 'public-sector sector performance' composite. At last, this indicator provides partial inference on the compliance with the EU-Acquis, chapter 23, Judiciary and fundamental rights[85].

An analysis of the indicator Public Institutions shows, similarly to the governance indicator above, a high quality of public institutions in 2016 in Germany and Austria with scores that separates them by far from the rest of this macro-region. However, the quality of public institutions in both countries declined in 2016 compared to 2008.

A decline can also be observed in Slovenia to a score of 79, Croatia to 64, Slovakia and Hungary each to 54 and 64 in 2016. On the other hand, a rise of the quality of public institutions can be noticed in the Czech Republic to a score of 83, Romania to 77, and Bulgaria to 50. The lowest scores are found for 2016 in the Ukraine (38). Moreover, the quality of public institutions in these countries deteriorated in 2016 compared to 2008. Apart from Montenegro, which performs higher than several Member States, the (potential) candidate countries have a quality of public institutions like in Bulgaria, which form the EU's bottom end. It should however be noted that Bosnia-Herzegovina's and Serbia's performance declined over the years.

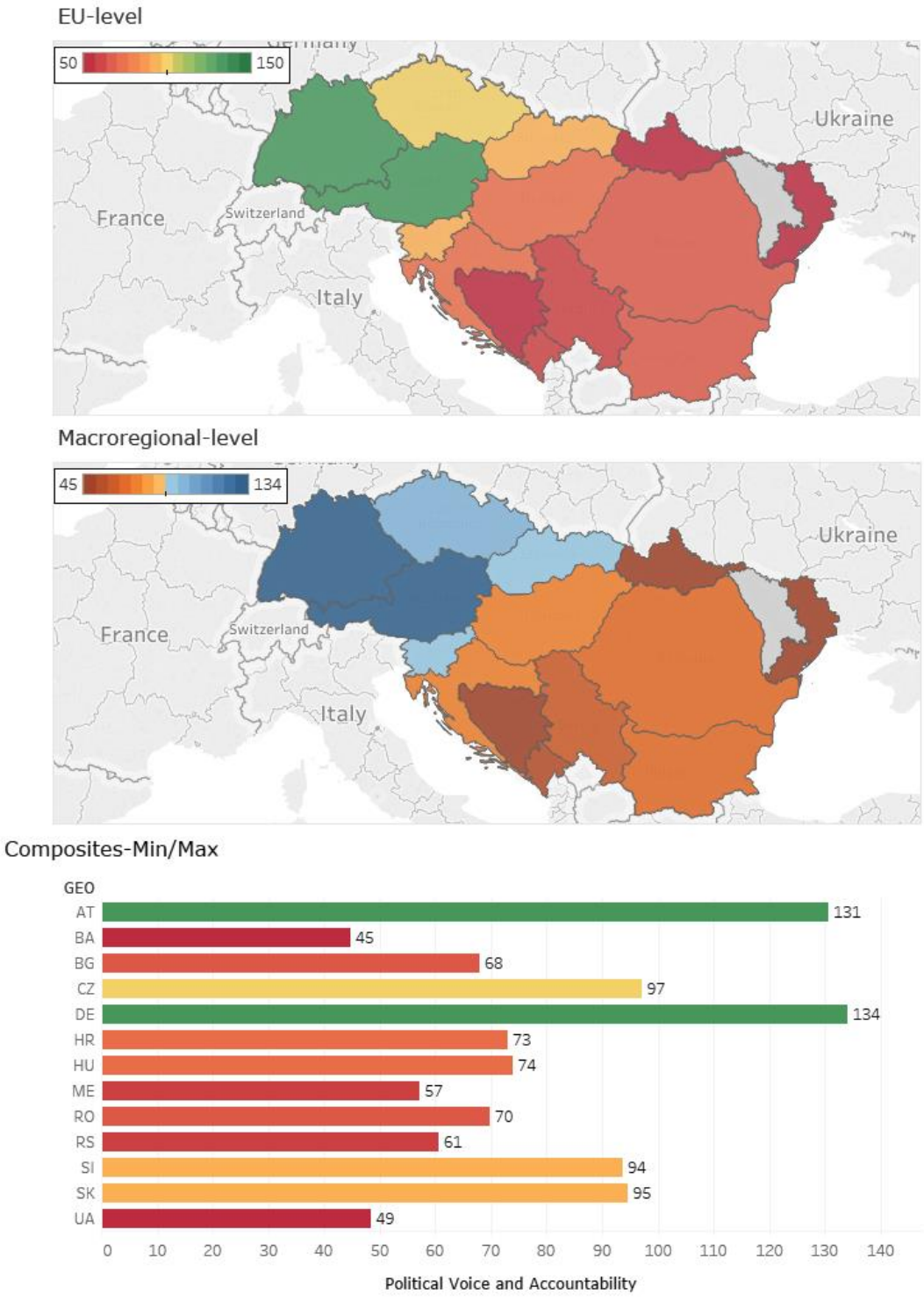
[83] World Economic Forum, Global Competitiveness Index, http://reports.weforum.org/global-competitiveness-report-2015-2016/institutions/

[84] World Economic Forum, Global Competitiveness Index, http://reports.weforum.org/global-competitiveness-report-2015-2016/institutions/

[85] https://ec.europa.eu/neighbourhood-enlargement/policy/conditions-membership/chapters-of-the-acquis_en

2.6.3 Voice and Accountability

Figure 2-40: Voice and Accountability by country in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-35: Explanation of the indicator: 'Voice and Accountability'

The indicator Voice and Accountability mirrors "*the freedom of a country's citizens in selecting their government, as well as freedom of expression, freedom of association, and a free media*".[86] In its essence, it is an indicator on democracy, i.e. civil freedoms and the therewith indirect accountability of governments', as a result of freedom of expression and free media. As with the public institutions indicator, this indicator provides partial inference on the compliance with the EU-Acquis, chapter 23, Judiciary and fundamental rights[87] . The underlying indicator is part of the World Bank's broader Worldwide Governance Indicators (WGI) Project of the World Bank Group.

An analysis of the indicator Voice and Accountability shows again a significantly stronger performance in 2016 in Germany and Austria, outperforming the third strongest (Czech Republic) by 34 benchmark points. The scores of the indicator Voice and Accountability improved in 2016 compared to 2008 in Germany and remained nearly unchanged for Austria. While the Czech Republic, Slovakia, and Slovenia show values for Voice and Accountability at around 95 points, Hungary, Romania, Bulgaria, and Croatia exhibit values lower than 75. A decline since 2008 can be observed in Slovenia, Hungary, Romania, and Bulgaria, which nevertheless score well-above the EU's bottom performing country. Croatia, Slovakia, and the Czech Republic in turn show improved scores. Looking at the candidate countries (Montenegro and Serbia), the scoring is higher than the EU's bottom performer (not in this macro-region). Compared to 2008, these scores have however remained stable or slightly declined, exhibiting backward developments in these countries. In the case of Bosnia-Herzegovina, a slight decrease can also be seen.
The Ukraine performs slightly below the EU's bottom end and also shows a small decline in 2016 compared to 2008.

[86] http://info.worldbank.org/governance/wgi/pdf/va.pdf

[87] https://ec.europa.eu/neighbourhood-enlargement/policy/conditions-membership/chapters-of-the-acquis_en

2.6.4 Human Trafficking

Figure 2-41: Human trafficking in Europe. Source: Eurostat Report on Trafficking in Human Beings 2015

Country of origin / citizenship of victims reported	Countries reporting victims in 2010 - 2012, sorted in decreasing order of the number of registered victims by citizenship EU, EFTA, EU Candidate and Potential Candidate Countries																											Total Registered Victims
	RO	BG	NL	HU	PL	FR	SK	DE	LV	CZ	RS	LT	UK	ES	EE	HR	IE	EL	SI	BE	IT	CH	FI	DK	CY	LU	MT	IS	
Romania	3 230		218	<5	65	427		434		6	<5		493	464		<5	19	126	<5	62	472	13	5	23	24	7	<5		6 101
Bulgaria		1 698	421		44	167	<5	370		35	<5		63	29			5	75	<5	49	50	13		<5	15	<5	<5		3 043
Netherlands			1 079										<5																1 080
Hungary	<5		394	153	<5	40		156					243				<5	<5	9	<5		41		<5					1 046
Poland			187		263	12		92		<5		<5	405				5			6		<5	<5	<5	<5		<5			976
France			<5			476		<5					6													<5		<5		491
Slovakia			49				78	26		10			296						6	6		<5		<5					477
Germany		<5	19			<5		389					<5																415
Latvia			12					25	277	<5			34				<5	<5						<5	<5				355
Czech Republic		<5	26			<5		41		34			233				<5		5	<5			<5	<5					351
Serbia	<5		<5			5		20			230		<5			<5		<5	<5	5									269
Lithuania			22			<5		16				50	146				<5	<5						<5		<5			244
United Kingdom			6			<5							197							<5									205
Spain			<5			8		<5					<5	117															132
Estonia			<5					<5					<5		55								8		<5	5			77
Turkey			11					41			<5		<5							<5			<5		<5				61
Croatia			<5								<5					25				<5		<5							32
Ireland													<5				31												32
Portugal			9			<5		<5					7							<5				<5		<5			27
Greece	<5		5					<5										4							<5				14
Slovenia								<5											12										13
Belgium			<5			<5		<5					<5																8
Italy			<5		<5	<5		<5					<5																6
Montenegro								<5			5																		6
Austria			<5			<5					<5											1							4
Switzerland						<5																	<5						3
Finland			<5																				1						2
Norway								<5																					2
Denmark																								1					1
Cyprus																									1				1
Total victims	3 233	1 700	2 476	156	375	1 153	79	1 626	277	87	241	51	2 138	610	55	29	66	212	40	142	522	73	20	39	47	22	4	1	15 474

Key: Citizens of reporting country; 10 – 99 victims; 100 – 399 victims; 400+ victims

Text Box 2-36: Explanation of the indicator: 'Human Trafficking

According to the Eurostat Report of Trafficking in Human Beings a person is considered to be a victim of trafficking in human beings when the crime against her/him fulfils the constituent elements of trafficking in human beings as defined in the EU Directive 2011/36 on preventing and combating trafficking in human beings, protecting its victims. An "identified victim" is defined as "a person who has been formally identified as a victim of trafficking in human beings by the relevant formal authority in a Member State". [88]

According to the Eurostat Report of Trafficking in Human beings it is generally difficult collect data on trafficking. The primary reason being that victims do not always report the crime to the police or do not even want to cooperate with the police. Registering victims in an accurate manner is further largely depended on the capacity to identify victims in the form of formal authorities or the existence of a national register[89]. The data on Human Trafficking in the EU Member States used for the current analysis covers a three year period from 2010 to 2012. To avoid population sizes of countries having an effect on the interpretation of the statistics, a registered victim prevalence rate has been calculated for victims of trafficking, by expressing the number of registered victims with citizenship of a particular country as a proportion of that country's population, averaged across 2010-2012.

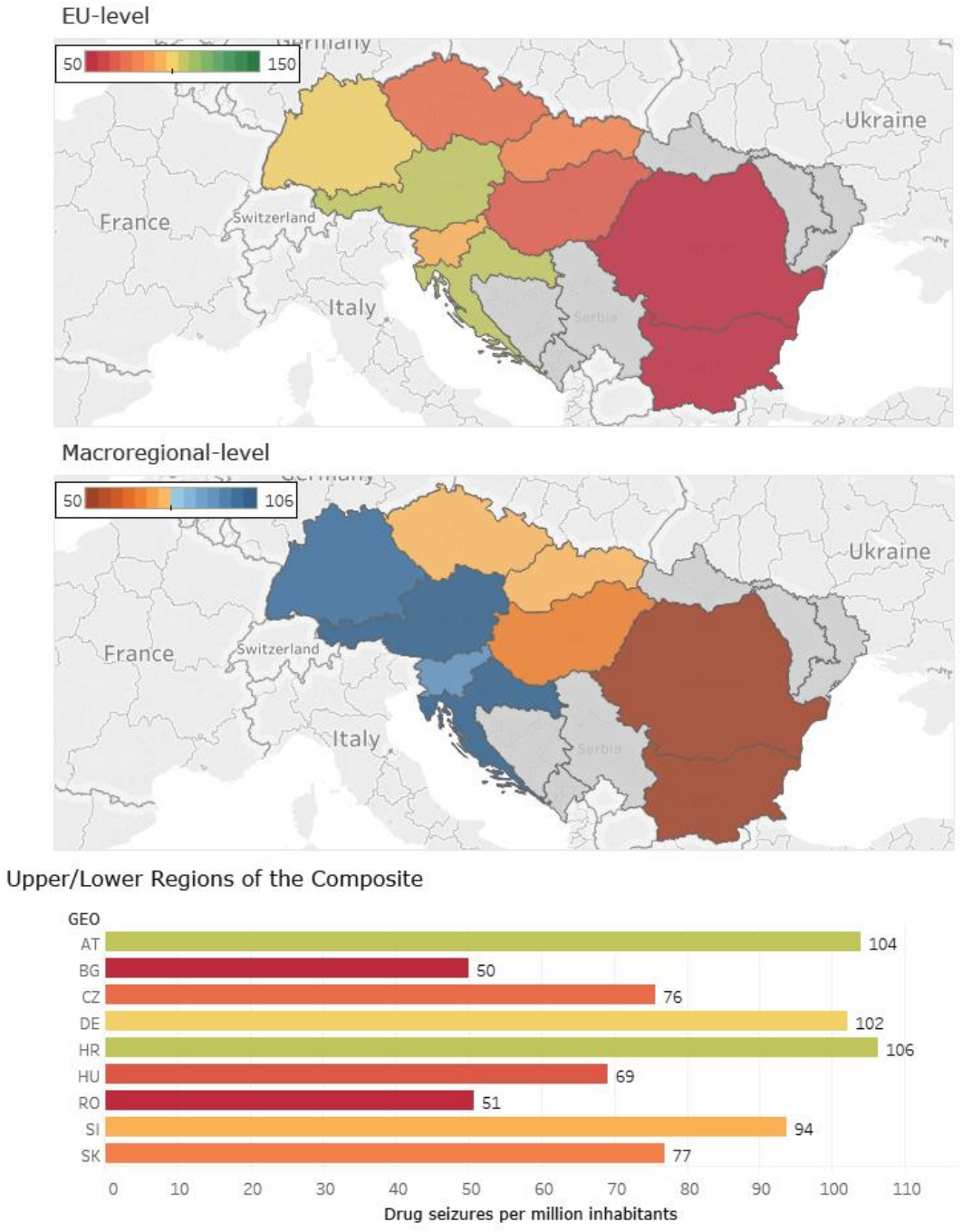
During the period 2010 to 2012, most registered victims of human trafficking in the Danube macro-region were citizens of Romania (6.101), Bulgaria (3.043), Hungary (1.046), Slovakia (477), and the Czech Republic (351). These victims came in contact with authorities both in their home countries and in other EU countries. Most Romanian victims were to be found besides in Romania also in the United Kingdom, Italy, Spain, Germany, France, and the Netherlands. These are also the countries hosting the most Romanian migrants. Bulgarian victims were to be found besides in Bulgaria also in the Netherlands, Germany, and France. The most Hungarian victims have been registered in the Netherlands, United Kingdom, and in Germany. The most Slovakian and Czech victims have been registered besides their countries of origin also in the United Kingdom.

[88] Publications Office of the European Union (2015): Trafficking in Human Beings, Luxembourg, 2015.

[89] Publications Office of the European Union (2015): Trafficking in Human Beings, Luxembourg, 2015.

2.6.5 Number of Drug Seizures

Figure 2-42: Drug Seizures by Country in 2014, on an EU-wide (top) and Macro-regional (middle) comparison. The bottom figure shows the Upper/Lower Regions, including their components



Text Box 2-37: Explanation of the indicator: 'Number of Drug Seizures'

Europe is an important market for drugs. The drugs are either locally produced or they are produced in other world regions and are trafficked in Europe. There are regional differences in stimulant consumption patterns across Europe. Cocaine use appears higher in Western and Southern European countries, while amphetamines are more used in Northern and Eastern Europe.[90]

An analysis of the number of drug seizures per 1 million inhabitants for the year 2014 gives a picture of the drug consumption and the countries' capacity to combat drug trafficking. The source of the data on the number of drug seizures is the European Drug Report 2016 and Eurostat for the data on population. The data on drug seizures are available only at country level, no data are available for NUTS-2 regions.

In the macro-region, countries like Croatia, Austria, Germany, and Slovenia record the highest number of drug seizures per 1 million inhabitants, ranging from 344 in Croatia to 227 in Slovenia, resulting in benchmarking scores of 110-103, and thus putting them above the EU-median. Countries in the middle spectrum are Slovakia, the Czech Republic, and Hungary with a number of seizures ranging from 150 per 1 million inhabitants in Slovakia to 114 seizures in Hungary. The lowest number of drug seizures in the region can be found in Bulgaria with 24 seizures and in Romania with 27 seizures/ 1 million inhabitants, although these countries are part of one of the main routes for trafficking heroin, the so-called Balkan route. These results point to the medium and low consumption of drugs in these countries and a relatively good performance of the drug police in combating drug trafficking.

[90] European Monitoring Centre for Drug and Drug Addiction (2016): European Drug Report, Trends and Developments, Luxembourg: Publications Office of the European Union, 2016, ISBN: 978-92-9168-890-6, doi:10.2810/04312

2.7 Meta-analysis

2.7.1 Macroeconomic Indicators

Regional development is a complex, multidimensional concept. Various factors such as: endowment with natural resources, quantity and quality of labour, availability of and access to capital, investment in physical and technological infrastructure, factor productivity dynamics, sectorial structure of the economy impact on regional development.[91]

Economic Performance

The Danube macro-region is heterogeneous. Countries of the Danube macro-region are at different stages of their economic development. Within the macro-region, there are mature economies such as Germany and Austria. [92] These countries are characterised by a high GDP per capita (well above the EU average), labour productivity and low to moderate growth rates. These are also the countries that exhibit the most social progress, as measured by the Social Progress Index. A second group consists of the more advanced Member States like the Czech Republic, Slovenia, and Slovakia with relatively high GDPs per capita (about and above 80% of EU average) and productivity levels and moderate growth rates. Their social systems are less advanced compared to the former group. A third group comprises the remaining Member States, Bulgaria, Croatia, Hungary, and Romania with GDPs per capita varying between 47% in Bulgaria and 68% in Hungary of EU average, moderate to low productivity and high GDP growth rates. The GDP growth differential to the other group takes yearly values of about 1.5 to 2 percentage points. Thus convergence is currently taking place at a moderate pace. The performance of their social systems is much lower than in the other two groups and needs to progress to reduce the gap to the advanced countries in the group.

A fourth group of countries is made up of the candidate countries Montenegro, and Serbia, the potential candidate country, Bosnia and Herzegovina, and the neighbouring countries, Moldova and the Ukraine. These countries exhibit much lower levels of GDP per capita compared to the EU countries in the macro-region. While the country with the lowest GDP per capita, i.e. Bosnia and Herzegovina, managed to raise its GDP per capita in the period 2008 to 2014 by a modest two percentage points, the GDP per capita in Montenegro, Serbia and the Ukraine decreased in the same period.

Between 2008 and 2015, the GDP per capita gap to the EU average was reduced by 8 percentage points in Romania and by 6 percentage points in both Hungary

[91] Nijkamp P. and M. Abreu (2003). Regional development theory. PN218MA-EOLSS. URL: ftp://dlib.info/opt/ReDIF/RePEc/vua/wpaper/pdf/20090029.pdf

[92] Investopedia, 2017: "A mature economy is the situation where the country's population has stabilized or is in decline, and where the pace of economic growth has also slowed. A population has stabilized or is in decline when the birth rate is equal to or less than the mortality rate. A mature economy is characterized by a decrease in spending on infrastructure, and a relative increase in consumer spending." Read more: Mature Economy http://www.investopedia.com/terms/m/mature-economy.asp#ixzz4vedfmFqg

and Slovakia. As a result of the severe impact of the economic and financial crisis, Croatia and Slovenia saw a drop of 5 and 7 percentage points.

Employment

At the same time, unemployment has been reduced considerably in the latest years in all new Member States, and the activity rates have increased. Reducing youth unemployment and long-term unemployment remains a challenge, especially in the new Member States of the macro-region. The investigated indicators on unemployment, youth unemployment and long-term unemployment show low unemployment rates for Moldova and the Ukraine, and therewith high scores on the benchmark. However, for the Western Balkan countries all three indicators show high unemployment levels, and hence low scores on the benchmark. Moreover, they also show an increasing trend from 2008 to 2015, which suggests persistent structural problems on the labour markets in these countries. Problems may be due to a mismatch between the available qualifications and the requirements of employers and also to an active informal job market, which may rather reinforce than reduce poverty. [93] The economic activity and employment rates are relatively low, whereas a gender gap in employment can be observed.

Social Progress

The performance on social progress of Serbia and Montenegro is comparable to that of Romania and Bulgaria, while Moldova and the Ukraine show a lower performance compared to the above-mentioned candidate countries.

Inside the individual countries of the macro-region and especially inside the third and fourth groups of countries, there are large economic and social disparities. Urban regions and especially the regions where the capital cities are located show higher development levels and growth rates compared to the other regions in the countries. "Agglomeration advantages" in terms of e.g. the number of companies or research institutions in urban regions support high GDP and skilled labour force concentrations and fast growth in urban centres. Businesses may benefit from lower transport costs as they are closer to their markets and their infrastructure is better developed. They may take advantage of learning from others, as they are closer to information sources and they may be part of clusters where the availability of skilled and more productive workers is higher. Furthermore, the overall regional productivity may increase in such urban agglomerations due to more intensive use of infrastructure by a larger number of firms.

To conclude, there are large disparities inside the macro-region on the macroeconomic and social fronts between the advanced EU-members and advanced new members and the other EU and non-EU Member States. However, these disparities have been continually reduced since the outbreak of the financial and economic crisis in 2008. There are large internal disparities (especially in Romania, Bulgaria, Hungary, Slovakia) between the urban regions

[93] See Williams, C., 2014, The Informal Economy and Poverty: Evidence and Policy Review, https://www.researchgate.net/profile/Colin_Williams/publication/260453006_The_Informal_Economy_and_Poverty_Evidence_and_Policy_Review/links/02e7e5319cc6d0fcf6000000/The-Informal-Economy-and-Poverty-Evidence-and-Policy-Review.pdf

and the rural and peripheral regions in the individual countries. Slow progress has been observed in lowering internal disparities. So far, progress has mainly been concentrated on the urban centres.

2.7.2 Macro-regional Integration

During the last two decades, the fast growth of trade in intermediate inputs contributed to the enhancing growth of the countries in the macro-region. Multinational firms account for a large share of input trade. They create global vertical production networks by locating input processing in their foreign affiliates. Vertical production networks allow multinational firms to take advantage of lower wages for less-skilled labour and lower production costs, lower trade costs, and lower corporate income tax rates.[94]

Trade Integration

Turning to the trade and investment relations between the countries of the Danube macro-region, besides the strong role of multinational companies, traditional, neighbourhood and historical relations dominate the picture. Integration in the macro-region is high, above the EU average. Germany and Austria are main trade and investment partners for all countries in the macro-region and for each other. However, due to the small part of Germany that is part of the Danube macro-region and the fact that Germany, as a large country, has a more diversified pool of trade partners compared to the small countries in the macro-region, only about 8% of its exports stay in the region.

Bosnia and Herzegovina, Croatia, Hungary, and Serbia present the highest trade integration among the countries in the Danube macro-region, with a share of the macro-region in their total exports accounting for about 50%. A similarly large share of the macro-region in total exports of 45% or more is seen in the Czech Republic, Slovakia and Slovenia; countries that have strong ties with Germany. They are all part of the supply chain for the German automobile industry.

A medium degree of integration can be observed for another group of countries (Bulgaria, Romania, and Moldova) with shares of macro-region's exports in total exports ranging from 30% in Bulgaria to about 37% in Romania. The relations are traditionally very strong among the following groups of countries: Czech Republic and Slovakia, Austria and Germany, Romania and Hungary, Serbia, Croatia and on the one hand Montenegro and Bosnia and Herzegovina on the other hand. Slovenia and Croatia also have a big share in each other's exports. Romania has a large share in Moldova's exports. A large part of trade and investment takes place inside these groups. The Ukraine is more integrated with the Commonwealth of Independent States (CIS). Compared to the EU average, the Danube macro-region shows an above average integration intensity. Trade integration within the macro-region increased in 2015 compared to 2008 in all countries except for Bosnia and Herzegovina, Montenegro, Serbia, and Moldova.

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[94] Hanson, G. H., R. Mataloni Jr. M. J. Slaughter (2003). Vertical production networks in multinational firms. NBER Working Paper Series. Working Paper 9723 http://www.nber.org/papers/w9723

Labour Integration

The data on migration as well as remittances also show a high degree of integration inside the macro-region (above the EU28), however less strong than in the Alpine or Adriatic Ionian macro-regions. The flow of migrants mainly goes from East to West (Germany and Austria) or from the new EU Member States and non-EU countries to the EU-15 Member States, whereas the flow of remittances takes the opposite direction. In addition, there is a flow between the countries in the groups mentioned above. Integration in student exchanges mirrored in the share of mobile students from abroad is however below the EU average. However, one has to bear in mind the scarce data for the macro-region and the EU (data are available only for 17 EU countries).

Energy Integration

The macro-region displays an above EU average integration in the energy sector. Around 10% of all energy products produced are exported to countries in the macro-region. The highest integration is seen in Bosnia and Herzegovina where 100% of its energy exports stay in the macro-region. Generally, there is high integration between the countries of former Yugoslavia. Due to reasons mentioned above, Germany's integration in the energy sector within the Danube macro-region is very low.

Accessibility Potential

The Danube macro-region is faced with a remarkable regression of accessibility (i.e. the ease of getting around from place to place) from the north-west towards the south-east. The highest values are registered in Germany and Austria. On the contrary, Bulgaria, Romania, and Croatia show low values for accessibility. The whole Danube macro-region is characterised by wide differences inside the countries. Romania, for example, is home to one of the best performing regions (Bucuresti – Ilfov) but also to one of the poorest performing regions (Sud-Est).

Transnational Cooperation

Organisations in the countries of the macro-region were strongly involved in the regional cooperation programmes. The region Zahodna Slovenija (Slovenia) hosts most organisations involved in territorial cooperation with as many as 118 organisations, followed by Vienna (Austria) with 80. It is noted that there is a divide between the urban regions with more organisations being part of strong networks and rural regions with less organisations.

2.7.3 Competitiveness

In recent years, efforts at regional level have been intensified to improve location-specific conditions for production and services and/or the performance of headquarters functions, which at the same time intersected with a more focused approach to attract potential investors. Regions no longer delegate the acquisition of foreign direct investment to the national level but get themselves engaged such activities with region-specific institutions and instruments (for example in the form of an autonomous regional brand management).[95] As a

[95] Grozea-Helmenstein D., C. Helmenstein, T. Slavova (2009). *Who is the best? Insights from the benchmarking of border regions.* Trames. Journal of the Humanities and Social Sciences, 13(63/58), (3). pp. 285-302.

result, the markets are shaped more according to regional instead of national boundaries. This implies a second level of interregional competition.

Economic Competitiveness

The regions are struggling to adapt to constantly changing conditions in order to at least maintain competitiveness and, if possible, to increase it.[96] In the framework of this study, competitiveness has been analysed by using various indicators. The overall competitiveness indicators show a similar picture to that identified from the macroeconomic overview and integration. The top ten performing regions were all located in Germany. Austria's regions Niederösterreich and Vienna and Slovakia's region Bratislavksý kraj followed. Regions that include the capital cities in Slovenia, Hungary and Romania show average achievement on competitiveness. The lowest performing regions are found in Romania and Bulgaria. The average and low performers maintained their positions over time and did not manage to improve their scores on any of the competitiveness indicators in the recent scoreboards. With respect to sectorial competitiveness, there are wide disparities between urban regions and regions where the capital cities are located and rural regions.

Innovation and Digitalisation

In 2016, only Germany registered regions marked as "Leader" in the Regional Innovation Scoreboard. Austria was listed as "Strong" as were regions in Slovenia and Slovakia. Bulgaria and Romania were at the bottom of the list. The EU Digitalisation Index showed almost the same picture. Germany and Austria scored slightly above the EU median, followed by Slovenia, the Czech Republic, and Slovakia. Romania had the lowest score in the macro-region, and also throughout the EU. Almost every country was able to improve their scores except for Bulgaria and Romania.

Education

A crucial factor for competitiveness is education. The highest scores were observed in Karlsruhe (Germany), Praha (Czech Republic), Zahodna Slovenija (Slovenia), and Bratislavský (Slovakia). Austria and Slovenia scored highest in "Participation rate in education and training", because of the well-established dual vocational education system. At the other end of the spectrum, Romania, Bulgaria, and Hungary displayed the highest rates of young people outside education/training and employment.

While Montenegro and Serbia are performing relatively well on the investigated education indicators with a low share of early school leavers and a high share of the population aged 30-34 having completed tertiary or equivalent education, Bosnia and Herzegovina showed relatively lower performance on these indicators. Since 2008, all three countries have registered improvements. Moldova has a high share of early school leavers and also a high share of population with tertiary achievement. Compared to 2008, it is noted that there is a slight deterioration on both indicators in 2015 and 2014 respectively.

Transport

[96] Grozea-Helmenstein D., C. Helmenstein, T. Slavova (2009). *Who is the best? Insights from the benchmarking of border regions.* Trames. Journal of the Humanities and Social Sciences, 13(63/58), (3). pp. 285-302.

The outcomes of the completion of the trans-European Transport Network (TEN-T) are quite heterogeneous in the Danube macro-region. Slovenia (100%) and Austria (97%) were the leaders in completing the TEN-T road core network. Hungary (81%), Croatia (61%), and Germany (59%) followed. Croatia was the leader by the indicator Conventional Rail, followed by Bulgaria. The completion of TEN-T inland waterways are quite advanced in the region. Only the regions in Germany, Romania, and Hungary lag behind. The quality of transport infrastructure is low for road and railway and good for air and multimodal transport modes.

Tourism

The tourist hotspot, measured in number of tourism arrivals per capita, in the Danube macro-region is Austria, followed by Croatia and Germany. Croatia even registered the highest increase since 2008. Undoubtedly, there is a huge potential for growth in the new EU Member States. Low figures for non-residents staying in hotels and similar establishments per inhabitant are observed in the candidate and potential candidate countries and the non-EU country Moldova. The best performing country of this group is Montenegro. In all other countries, the arrivals per inhabitant are very low. A positive development between 2008 and 2015 indicates however that tourists are slowly discovering destinations in these countries.

Energy

In terms of Energy Efficiency, the countries in the Danube macro-region are grouped near the EU median, albeit with large disparities in Energy Intensity. While Austria needed about 100 tonnes of oil equivalent per million euros of GDP, Serbia needed almost 500 tonnes of oil equivalent per million euros. However, Serbia was found to have improved the most since 2000. Austria is also the leader when it comes to the use of renewable energy with a share of 33% in final consumption. All the countries in the region had managed to increase their share of renewable energy since 2008.

Environment

Except for Austria and Germany, all other countries in the Danube macro-region reported higher CO_2 emissions per unit of GDP. The best air quality was found in Slovenia, followed by Austria, and Romania. Also the "worst" performer in the Danube macro-region, Slovakia, is by far above the EU bottom-line.

Resource efficiency and eco-innovation indicates Germany’s and Austria’s leader role in the Danube macro-region. The other countries are located next to the EU median or below it, with Bulgaria at the bottom.

Bathing water quality is good in most countries. In Romania and Bulgaria, bathing water quality is lower. The Danube macro-region has a moderate level of soil erosion. About half of the NUTS-2 level regions in the Danube macro-region perform better than the EU median. Overall, higher homogeneity is observed between the regions closest to the Danube valley. The lowest values are found in the mountainous and coastal areas.

To summarise, among the key competitiveness factors of the macro-region are the relatively high growth in the SME sector, a medium but steadily improving position on digitalization, progress in completing the Composite TEN-T infrastructure for road and water. The macro-region shows a mixed performance

when it comes to education and sustainable energy use as well as tourism, air pollution and water quality.

2.7.4 Political, Institutional and Governance indicators

Governance

Overall, the macro-region can be considered to be effective in terms of policy implementation. The divide inside the region between the EU-15 and the new EU members is evident when looking at governance performance (government effectiveness and regulatory framework), quality of public institutions and voice and accountability, showing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media.

The performance on governance reveals wide disparities within the Danube macro-region and allows for segregation of countries into three groups. The first group is Germany and Austria, which are the only countries that performed above the EU median. Germany even managed to improve its quality of governance. The second group with scores in the range of the bottom half of EU countries consists of the remaining EU Member States of the macro-region and Montenegro. Serbia has a quality of governance only slightly below the EU's lowest performing country, while Bosnia and Herzegovina and Ukraine exhibit a quality far below that. The candidate countries show thus a quality of governance close to what can be found in the bottom end of the EU, while the potential candidate country Bosnia and Herzegovina still needs major improvements.

Public Institutions

A similar picture is seen for the indicator Public Institutions. Germany and Austria are the only two countries in the region that perform above the EU median. The (potential) candidate countries are far from this level and have to tackle a lack of quality in public institutions.

Crime

In 2010 and 2012, Romania reported 6,101 victims of human trafficking. Romania was followed by Bulgaria (3,043), Hungary (1,046), and Slovakia (477). Most of the victims were found in Romania, the United Kingdom, Italy, and Spain. Romania and Bulgaria also underperform in terms of the number of drug seizures. Although one of the main heroin trafficking routes passes through both countries, reported seizures were 27/million inhabitants in Romania and 24 seizures/million inhabitants respectively. [97] These figures are considerably lower than the corresponding figures for top performing countries, such as Croatia (344).

In summary, looking at political, institutional, and governance factors, Germany and Austria are high-quality performers. The new EU member states score below the EU median. However, the less advanced countries are progressing towards closing the gap to the best performers.

[97] European Monitoring Centre for Drug and Drug Addiction (2016): European Drug Report, Trends and Developments, Luxembourg: Publications Office of the European Union, 2016, ISBN: 978-92-9168-890-6, doi:10.2810/04312

REVIEW OF THE MACRO-REGIONAL STRATEGIES

EUSDR (TASK 2)

3 Review of the Macro-regional Strategies (Task 2)

3.1 Introduction to Task 2

The below sets out the key research questions that have framed the conduct of the analyses presented in this report on Task 2 for the EUSDR, as well as the sources of information that have been consulted to answer these research questions.

Each macro-regional strategy contains a range of context specific elements. Terminologies are not always the same, but in essence all strategies define their objectives, their priorities, their focus areas and provides related indicators for monitoring. In terms of governance each strategy has its own multi-layered structure which ensures transparent and consistent decision making and the ability to implement: across regions/countries and sectors, and within regions/countries. Bearing this in mind, and given that the information to inform the answering of the below research questions must to a large extent be based on primary data collection, the summaries are based on a targeted collection of data.

Approach

The approach to the analysis of the macro-regional strategies has been to select a number of policy/priority/pillars (hereafter called PAs) in each strategy as case studies. Interviews have been made around the cases PA. For the EUSDR, 5 cases have been selected, namely PA1A Waterways mobility, PA4 Water quality, PA7 Knowledge society, PA9 People and skills, and PA11 Security.

Outline of this report

This report is structured in four sections one per sub-task, corresponding to the research questions as listed in Table 3-1.

Table 3-1 Overview of Task 2 research themes

Research themes		Source of information
a	Description of objectives via relevant indicators, examination of the strategic relevance of the macro-regional level for the priorities selected	Desk review and expert interviews
b	Description of the main achievements of the strategies – content-wise and process-wise – whether it is new actions and new projects or adjustments or new developments of the policies concerned	Desk review, interviews, focus groups, case studies
c	Compare the objectives with the achievements, assess the quality of the objectives setting and the extent to which they have been achieved as well as the added value provided by the macro-regional approach for tackling the shared issues identified. Analyse in particular for which priorities the macro-regional approach proved especially relevant and providing the participating countries and regions with more effective results than would have been the case had these priorities been pursued in a different geographical scope – more limited or larger	Data gathering and analytical results from 2a and 2b, Contribution analysis, interviews, case studies, desk research, surveys
d	Description and assessment of a) whether the macro-regional strategies (MRS) have influenced the implementation of European Structural and Investment Funds (ESIF) programmes, b) Whether and how programmes are contributing the implementation of MRS – and the strengths and weaknesses of current approach and c) whether and how a macro-regional approach contributes to strengthening the territorial cohesion objectives of EU	Interviews, surveys, EU spending programmes

3.2 Methodology for Task 2

Research theme a

Task 2a reviews the objectives of each Strategy. This is done by examining the strategical relevance of each objective in the macro-regional context. In other words, this task scrutinises whether a given objective (1) corresponds to an identified need or opportunity for intervention, and (2) whether the macro-regional approach provides a concrete benefit.

The need for intervention

The need for intervention is primarily identified through a pre-defined set of indicators that have been developed and are reported on in section 2 of this report. Where needed, additional indicators or external literature supplement the judgement. The need for intervention is considered at three geographical levels: i) the macro-region as a whole, ii) the macro-region's individual countries, and iii) internal levels (e.g. urban vs rural).

The macro-regional relevance

The macro-regional relevance is established through expert knowledge and external literature. The results of the review were tested and discussed with independent regional experts on each of the four macro-regions.
The review applies a traffic light methodology to categorise each objective in terms of need and macro-regional relevance. Further details about the methodology as well as the detailed results of this task can be found in Appendix A.

Research theme b

The focus of Subtask 2b is to describe the implementation of concrete activities linked to the policy fields covered by the strategies. This provides an understanding of the progress towards achieving the specific objectives set out in the formative strategic documents.

We illustrate the actual performance of each strategy at the PA level through a set of case studies. These case studies investigate the ways that the MRS structure facilitates, and otherwise affects, the cooperation between stakeholders towards achieving progress in the priority areas at an 'operational level'. From these, we can then develop concrete examples of the various factors that contribute to the achievements. A particular focus will be on the way that contents and processes of the strategies helped stakeholders to drive progress. The application of case studies brings about additional advantages, which mostly evolve from generating an insight into specific contextual mechanisms and the ways in which the frameworks provided by the MRSs support progress in the priority areas, especially concerning cooperation.

The core research team will prepare the frameworks for processing the data we obtained in the interviews. The responses will be integrated to facilitate the sorting of qualitative responses across different countries and stakeholder types.

Organising and documenting the findings

Information from the cases, interviews, and desk research is synthesised into evidence matrices, which each provide overviews of the results and impacts for each MRS. The developed intervention logic provides the typology of categories for the types of results and impacts observed. Information from the cases will be extracted to demonstrate the areas in which stakeholders created new actions, projects, adjustments, or policies. All examples of results and impacts will be summarised in the evidence matrix, and the source of evidence will be identified.

Research theme c

This section includes an analysis of the objectives (from the Action Plan), targets (from road maps or workplans)[98], achievements (progress reports), and indicators (where available) of the PAs analysed for the four macro-regional strategies. These are illustrated in a logframe for each priority area. For each priority area, the progress towards targets and objectives is tracked through examples of achievements and progress registered in the progress report. The achievements are discussed drawing on the analysis of the achievements in Section 3.1.

Verifiable indicators

Where possible, the progress towards achieving the objective has been illustrated via one or more objectively verifiable indicators (OVI). The indicators used are either those included in the target by the priority areas (where

[98] List of European Union Strategy for the Danube Region (EUSDR) Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

available), or examples of those that were identified/analysed in in Task 1 and Task 2a. To the extent possible, data for two periods is included for the indicators in order to describe the progress. These periods are however not identical for all indicators but span the period 2010-2017.

Research theme d

Subtask 2d Impact of MRSs on ESIF and vice-versa

This subtask focusses on analysing the linkages between the MRSs and the ESIF programmes that support territorial cohesion.

The coordination between the structures of the MRSs and the relevant Operational Programmes in the Member States and ETC programmes is examined to determine the influence of the MRSs on the formation of the OP and the impact they have had on complementary spending programmes.

Activity 2.12 Linkages between MRSs and EU spending programmes

The first part of this analysis will look at the extent to which the MRSs are used to influence the design of ESIF programmes in the macro-regions. Influence shall be defined as the (used) possibility of the MRSs to steer/guide the activities funded under the ESIF programmes. This would be done either through incorporating the priorities of the MRSs or securing that the actions/activities of the spending programmes support the objectives and PAs of the MRSs. The analysis will concentrate on a desk review of programme documents and programme portfolios.

Data collection methods

This analysis report is based on an integrated data collection framework, driven by the approaches used to address the analytical tasks and intended to provide a picture as comprehensive as possible. This task draws on evidence through three major stages of data collection: desk research, an interview programme with 82 stakeholders, and a survey of approximately 6000 actors. The interview programme and survey have be used to gather qualitative data to answer questions related to each research theme and sub-themes, i.e. the research themes analysed in this report, as well as research themes relating to Task 3 and Task 4.

Desk research

As a first step, a desk research of the strategies has been conducted, relying on existing data. This has been accomplished by studying, in particular:

- the strategy's Action Plans (and other strategic documents),
- the work plans of the individual PAs, and
- the progress or implementation reports of the PAs
- supplemented with other data, e.g. from the strategy's or individual area's websites and publications.

Most of the reviewed data is published and thus readily available, but particularly with respect to the progress and implementation reports, much of

the information material we have relied on concerns draft versions requested from the individual area's coordinators.

Appendix A presents a list of sources consulted. It includes for example several documents produced as part of various evaluation initiatives for cohesion policy programmes, as well as academic and analytical publications on the MRSs. Further, also documents have been analysed that outline the European policy framework related to cohesion policy, such as Communications, regulations, and evaluations linked to specific regional programmes. These documents support the analysis of the context in which the strategies have been developed as well as the rationale for the development of MRSs in addition to or instead of initiatives taken at the local, national, or European level.

Identification of case studies

Twelve case studies have been conducted in order to investigate the ways that the MRS structure facilitates, and otherwise affects, the cooperation between stakeholders towards achieving progress in the priority areas at an 'operational level'.

Initially, a pre-selection of the case studies was made based on preliminary desk research (as presented in the inception report), which subsequently was elaborated based on explorative interviews with key stakeholders and representative at EU level. Accordingly, the final and current selection of cases was made informed by inputs from key stakeholders and the Commission. The case are presented in fact-sheet and used in the analysis across case studies.

Interviews

The interviews have been carried out in a structured format. They cover the core analytical themes and issues identified in through the desk research and through explorative interviews. Standard interview guides have supported us in addressing the identified analytical dimensions. In addition, the guides have assured conformity of the interviews with the objectives of assigning attribution, evaluating progress and outlining the value-added of each strategy.

The interviews with relevant stakeholders were conducted in the 12 selected policy/priority/thematic/action areas (case studies). Interviewees were identified and selected in cooperation with the relevant Directorates-General (DGs) as well as the PAs' coordinators. The interview period runs over a span of five months, namely from April 15th to September 15th. For each area, an average of 6-7 interviews have been conducted.

Validity and bias of interview finding

The interview findings are used in the analysis as a key source. All interviews are recorded by the study team in reports. Throughout the analysis, selected interview findings are present in tables and text (shortened and adapted by the team in order not to reveal the identity of the interviewee). The study team has identified relevant interview statements (answers to the question, which reflect the content of the question). To the extent possible, the selected statements reflect a condensation of both positive and negative assessments and opinions of the interviewed stakeholders (where available). A certain bias may be inherent in the statements as those stakeholder, who agree to partake in an interview, are often more involved and active stakeholders and thus generally more positive (biased).

In the table below, an overview of the case studies and the respective interviews conducted is presented.

Table 3-2 Overview of case study interviews conducted

Strategy	Policy Area / Priority Area / Pillar / Action	No. of interviews conducted
EUSBSR	PA Education	8
	PA Innovation	7
	PA Nutri	6
	PA Safe	8
	PA Transport	10
EUSDR	PA 1A Waterways mobility	5
	PA 4 Water quality	6
	PA 7 Knowledge Society	5
	PA 9 People and skills	11
	PA 11 Security	4
EUSAIR	Thematic Steering Group (TSG) 4 Sustainable tourism	5
EUSALP	(AG) 6 Natural / cultural resources	5
Explorative Interviews		9
Total		**88**

Survey

The third part of the data collection framework consists of conducting a survey of approximately 6000 stakeholders – comprising key actors such as the PAs' coordinators and steering group members, as well as other stakeholders. Lists[99] of stakeholders were provided by each strategy (PA coordinators or communication officers) or the EU Commission.

The questionnaire used for the survey was initially drafted based on the findings of the desk research. Subsequently, it was further elaborated based on the explorative interviews/case study interviews and the first analysis, and was finalised in accordance with comments from DG REGIO.

The survey has been designed with the objective to test the insights already gained through desk research, case studies and interviews with regard to the intervention logic of the macro-regional strategies and the PAs. Therefore, the survey serves to verify and confirm findings and thus validate the evidence upon which the analysis of Task 3 and Task 4 is based. Moreover, the survey has provided the opportunity for stakeholders to contribute with additional insights through open answers and commenting opportunities, which numerous respondents have taken advantage of.

[99] Based on conference participation, newsletter subscription lists, among others.

The survey respondents consist of different types of stakeholders in the four strategies, and have been sent an electronic invitation to participate in the online-survey based on their association with a (or several) strategies. The table below presents an overview of how many stakeholders the invitation was sent to as well as the number of respondents. This report is based on the final survey data extracted on 14.09.2017.

On the survey closing date, 14 September 2017, 999 respondents (Table 3-3) had answered the survey (around 16%). The names and contact data of the 6000 respondents invited to answer the electronic survey were provided by the four macro-regional strategies. It is assumed that these lists cover a representative selection of actors in the four macro regions. Data is drawn at strategy level, as the numbers per policy/priority/thematic/pillar vary considerably. An uneven level of responses may bias the results. Across the four strategies more respondents at policy level than project level have answered. Since the questions for policy and project area are separated, this should not result in a bias.

Table 3-3 Overview of survey recipients and respondents

Strategy	No. of recipients to whom the survey was sent	No. of answers received[100]
European Union Strategy for the Baltic Sea Region (EUSBSR)	3891	429
European Union Strategy for the Danube Region (EUSDR)	927	233
European Union Strategy for the Adriatic-Ionian Region (EUSAIR)	1003	258
European Union Strategy for the Alpine Region (EUSALP)	264	79
Total	**6085**	**999**

Finally, Table 3-4 below provides a brief overview of the timeline of the survey.

[100] On survey closing date, 14.09.2017

Table 3-4 Timeline of survey

Event	Date (2017)
Survey open & invitations sent	7 July
1st reminder sent	21 July
2nd reminder sent	4 August
3rd reminder sent	21 August
4th reminder sent	6 September
Survey closing date	14 September

3.3 Review of the EUSDR (Task 2a) – Summary

Contents of section

This section contains a summary of Task 2a, the review of the EUSDR. The main report, as well as the methodological framework applied, can be viewed in Appendix A below.

Review of EUSDR (summary)

The table below shows the summarised results of the review of the EUSDR's priority areas through relevant indicators. The review assessed each priority area in relation to the need for intervention and macro-regional relevance. The assessment is that the choice of priority areas corresponds to existing needs in the macro-region. Either because the Danube region as a whole performs lower than the EU level, or because a large disparity between the individual countries has been observed. Furthermore, all priority areas demonstrate that the macro-regional approach proves to be beneficial.

Need and/or opportunity

All priority areas of the EUSDR correspond to a need for intervention or opportunity for cooperation. The strongest evidence for a need has been identified based on unfavourable indicator values of the (potential) candidate and neighbouring countries, as well as new Member States. When data was available for the (potential) candidate and/or neighbouring countries, i.e. priority areas 1, 2, 3, 6, and 10, the chosen indicators showed performances below the lowest performing country in the EU. [101] Some cases nevertheless exist where this group of countries performed better than the EU's lowest performer, such as for example Montenegro exhibiting the third highest quality of public institutions under priority area 10. The two old Member States of this macro-region, Austria and Germany, barely show indicator values that point to a need for intervention.

Macro-regional relevance

All EUSDR priority areas demonstrate macro-regional relevance and generally respond to existing weaknesses in the macro-region, for which the macro-regional approach provides advantages. This is found in several forms, like:

[101] The specific indicators are as follows. PA1: 'Logistics Performance Index', 'Accessibility Potential'; PA2: Partially on 'Energy Integration'; PA3: 'Arrivals at tourism accommodation establishments'; PA6: '% of territory as designated area' and 'Quality of public institutions'

- addressing issues that are not influenced by national borders, but affect the whole macro-region (esp. PAs 4-6);
- establishing a larger geographical framework to optimise and improve the utilisation of economic resources (e.g. human or RDI resources) (esp. PAs 7-9); or
- capitalising on the new opportunities and addressing the new challenges that are brought about from the European Single Market (esp. PAs 1-3, 10-11). [102]

The review identified, though, one priority area with a less prominent macro-regional relevance. For priority area 8 (Competitiveness of Enterprises), competitiveness is overall an EU-wide issue and not only relevant to the Danube region. However, the EUSDR includes some of Europe's least competitive regions (both EU Member States and particularly (potential) candidate countries). This requires a more specific tailoring of the interventions to the Danube region's specific needs, to ensure that the regions manage to improve their relative competitiveness towards Europe's leading regions. The priority area's focus on cluster development and innovation, are further particularly relevant topics/themes in a transnational context, as the transnational scale brings several benefits in the form of, e.g. access to wider knowledge, a larger network, and a raised profile (CNBC, 2013).[103]

Overall conclusion

The choice of priorities for this strategy leads to the overall conclusion that each theme is considered strategically relevant on the macro-regional level, as a concrete need for action as well as macro-regional relevance have been identified for each priority area.

[102] A.1 Improve Mobility and Multimodality, A.2 Encourage more Sustainable Energy, A.3 Promote Culture and Tourism, People to People Contacts; B.4 Restore and Maintain the quality of waters, B.5 Manage Environmental Risks, B.6 Preserve Biodiversity, Landscapes, and the Quality of Air and Soils, C.7 Develop the Knowledge Society through Research, Education, and Information Technologies, C.8 Support the Competitiveness of Enterprises, including Cluster Development, C.9 Invest in People and Skills, D.10 Step up Institutional Capacity and Cooperation, D.11 Work together to Promote Security and Tackle Organised and Serious Crime

[103] CNCB, 2013, Handbook on transnational clustering, http://www.central2013.eu/fileadmin/user_upload/Downloads/outputlib/CNCB_HANDBOOK_internationalised_clusters.pdf.

Table 3-5: Summarised review of the EUSDR's pillars

Priority Area	Theme of intervention	SWOT	Traffic Light
A.1 Improve Mobility and Multimodality	Transport infrastructure	Weakness	Corresponds to need + Macro-regionally relevant
A.2 Encourage more Sustainable Energy	Energy	Weakness	Corresponds to need + Macro-regionally relevant
A.3 Promote Culture and Tourism, People to People Contacts	Culture and Tourism	Weakness	Corresponds to need + Macro-regionally relevant
B.4 Restore and Maintain the quality of waters	Environmental Status of Inland Waterbodies	Weakness	Corresponds to need + Macro-regionally relevant
B.5 Manage Environmental Risks	Climate Change Adaptation & Environmental Risks	Threat	Corresponds to need + Macro-regionally relevant
B.6 Preserve Biodiversity, Landscapes, and the Quality of Air and Soils	Human Environmental Impact	Weakness	Corresponds to need + Macro-regionally relevant
C.7 Develop the Knowledge Society through Research, Education, and Information Technologies	Knowledge Society	Weakness	Corresponds to need + Macro-regionally relevant
C.8 Support the Competitiveness of Enterprises, including Cluster Development	Competitiveness	Weakness	Corresponds to need + Macro-regionally relevant
C.9 Invest in People and Skills	Human Capital	Weakness	Corresponds to need + Macro-regionally relevant
D.10 Step up Institutional Capacity and Cooperation	Institutional Capacity & Cooperation	Weakness	Corresponds to need + Macro-regionally relevant
D.11 Work together to Promote Security and Tackle Organised and Serious Crime	Crime	Weakness	Corresponds to need + Macro-regionally relevant

Survey results on need

The results of the survey show that the majority of the respondents somewhat agree that the action plan addresses present and future needs. The identified needs are accordingly also relevant for regional cooperation. While this is in line with the findings of the review above, the survey highlights that not all stakeholders agree on these two aspects. Table 3-6 shows the result of the survey. Respondents either strongly (25%) or somewhat agree (64%) that the challenges in the regional areas are reflected. The score indicates that needs and opportunities, in the opinion of the stakeholders, could be better reflected. A smaller share of the respondents agrees that the action plan is regularly updated. 27% of the respondents even somewhat or strongly disagree. And 17% fully agree and 57% somewhat agree that the action plan reflects the needs of the future global challenges.

More than three quarters of the respondents think that the identified needs in the action plan are relevant for regional cooperation. These identified needs are furthermore fully or somewhat coherent with the national/local priorities. 12% fully agree and 57% somewhat agree. 29% of the respondents disagree at the same time.

Table 3-6 Survey results (EUSDR): Does the action plan for the policy/priority/pillar/thematic area include needs relevant for the macro-region?[104]

Percentage distribution of answers/ Sub-question	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Do not know	Respondents	Standard deviation
The major challenges for the macro-region are reflected in the action plan	25%	64%	8%	0%	3%	100	0,77
There is a regular revision/update of the action plan to adapt to changing needs	24%	45%	18%	9%	4%	100	1,04
Needs identified in the action plan are well-suited for regional cooperation	17%	62%	17%	2%	2%	100	0,77
The needs identified for the macro-region reflect future global challenges affecting the area	17%	57%	21%	1%	4%	100	0,86
The needs identified are coherent with national/local priorities	12%	57%	24%	5%	2%	100	0,81
					Total	100	0,85

3.4 Achievements of the EUSDR (Task 2b)

Five priority areas were selected as case studies for the analysis of the achievements of the EUSDR: PA 1A, Waterways mobility; PA4, Water Quality; PA7, Knowledge Society; PA9, People and skills; and PA11, Security. An analysis of the achievements of these five priority areas is presented in the sections below. The section is divided into two subsections: 1) achievements content-wise (subsection 3.1.1) and 2) process-wise (subsection 3.1.2). The tables included in the following subsections show the key findings from the interviews, the survey and the desk study across the five case studies. The case priority areas are described in individual factsheets at the end of the chapter (Section 3.4).

3.4.1 Achievements – contents-wise

Content achievements of the EUSDR (2b)

Overall, the analysis of the case priority areas shows contents-wise achievements in a number of areas. The analysis finds (interviews and survey) achievements in the five case priority areas in terms of increased mobilisation of finance, increase in generation of joint project and cooperation on major issues.

Most of the survey respondents (Table 3-7) only 'somewhat agree' with the questions relating to whether new tools, services, commons standards and technical capacity have been developed. Also interviewed stakeholders only partly confirm that there has been an increase in the priority areas with regard to policy dialogue, EU policy implementation or an impact on national policy. Some of the interviewed stakeholders find that it is too early in the process to assess achievements with regard to implementation of joint policies and implementation of EU policies.

[104] Survey results per 14.09.17 (policy level)

Table 3-7 Survey results (EUSDR): What are the results (medium/longer term, 3-5 years) of the cooperation in the policy/priority/thematic area?[105]

Percentage distribution of answers/ Sub-question	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Do not know	Too early to say	Respon-dents	Standard deviation
There has been an increase in the technical capacity of actors	11%	57%	14%	7%	8%	3%	91	1,21
New tools (technical excellence) have been developed in the area	10%	59%	16%	5%	3%	5%	91	1,19
New or improved services/products/training have been developed	13%	46%	24%	7%	4%	5%	91	1,25
Common standards have been developed in the area	7%	36%	33%	7%	5%	12%	91	1,41
New funding concepts have been developed (e.g. private, International Financial Institutions)	12%	34%	30%	12%	5%	7%	91	1,32
Increase in implementation of EU polices in the macro-region	13%	56%	11%	4%	7%	9%	91	1,43
The results have led to changes and improvements in national policy	8%	30%	36%	12%	4%	10%	91	1,34
Total							91	1,31

Policy dialogue

In the survey, 31% and 47% of the respondents strongly or somewhat agreed that the MRS process facilitates synergies between policies and helps understand the big picture at the policy level better (Table 3-8). Interviewed stakeholders in PA1A confirm that policy dialogue has increased. This has been achieved through mobilisation of top political levels in the countries concerned. Three ministerial declarations have been issued on the basis of the work done in PA1A (Table 3-8).

Examples of policy dialogue are also found in PA11, where a Ministerial conference on Combatting Terrorism in the Danube Region took place in January 2016. This conference was followed up by several workshops on specific topics[106], according to the progress report and interviewed stakeholder in PA11. Interviewed stakeholders in PA9 state that cooperation and the policy dialogue have been significantly developed and strengthened. Furthermore, both groups of stakeholders observed an increase in the development of common/joint policies.

Interviewed stakeholders in PA4 state that the policy dialogue increased and that a cooperation platform had been developed, which did not exist earlier. A Joint Trilateral meeting with EUSDR PA4 and the International Commission for the Protection of the Danube (ICPDR) and Sava Commission took place in Budapest (September 2017). The meeting aimed at updating the PA4 roadmap and at coordinating the implementation of the related activities.

[105] Survey results per 14.09.17 (policy level)

[106] Implementation Report for EUSDR PA11 (31.12.2016).

On the other hand, in the survey, only 8% and 30% of the respondents strongly or somewhat agreed that the results have led to changes and improvements in national policy. Furthermore, interviewed stakeholders across the PAs find that the steering committees are not really working at the policy level, yet. The steering committees only have an advisory capacity and the lack of real mandate limits the development of joint/common policy. For PA7, interviewed stakeholders find that priorities have been aligned, but that a real policy dialogue or common development of policy is still to come.

Those interviewed stakeholders who confirm that the implementation of joint policies has increased mostly refer to existing (pre-EUSDR) conventions or frameworks (PA4 or PA11). Some interviewed stakeholders (PA7, PA4, and PA9) find that there is a lack of commitment from the countries to participate in the steering committee. The lack of commitment is amplified by lack funding for activities (travel costs) and projects to push the development of joint policies.

Table 3-8 EUSDR: Findings from interviews, survey and desk research – examples of policy dialogue

Priority area	Results – examples from progress reports[107]	Interviews – selected findings[108]	Survey – results[109]
PA1A Waterways mobility	Three ministerial declarations have been issued	Mobilisation of top political level in support of the work of the policy areas Good cooperation in the steering groups secures the policy dialogue across countries, is definitely there The implementation has significant and positive contribution to that. So dialogue and discussions are there, soft projects, cooperation issues are there (but tangible results are highly awaited) Policy and cooperation level are excellent, can feel positive results. All countries are there at the SG meeting, all countries respond to requests	31% and 47% for the respondents strongly or somewhat agreed to that the MRS process facilitates synergies between policies; helps better understand the big picture at the policy level 8% and 30% for the respondents strongly or somewhat agreed to that the results have led to changes and improvements in national policy
PA11 Security	Ministerial Conference on Combating Terrorism in the Danube Region (January 2016, Sofia)	There is definitely an increase in policy dialogue across countries There are also many new topics. E.g. terrorism – it is very important with policy dialogue Increase development of common/joint policy in macro-region	
PA4 Water quality	Joint Trilateral meeting with EUSDR PA4 and the International Commission for the Protection of the Danube (ICPDR) and Sava Commission aiming at update and coordination of PA4 EUSDR roadmap activities implementation (09/09/2017, Budapest)	Increased possibility for cooperation, also with non-EU member countries. The policy dialogue has improved the understating of key issues Overall progress in policy dialogue; could however be further improved Political attention has been acquired, can be used to flag important topics of water management to other sectors Work is not on policy level, and steering committees are only advisory. There are attempts to develop - focus is more on implementation Increase in policy work, but this is not the primary focus (implementation is)	

Mobilisation of finance

The survey shows that 12% and 34% of the respondents strongly or somewhat agree that new funding concepts have been developed (e.g. private companies and International Financial Institutions). Yet, interviewed stakeholders find that the mobilisation of financing for the activities and projects in the priority areas has increased. In, for example, PA1A, Waterways mobility, some of the

[107] Progress reports for the respective priority areas, see section 3.5

[108] Interviews with priority area stakeholders May-September 2017

[109] Survey results per 14.09.17 (policy level)

stakeholders find that the increase in mobilisation is 'outstanding'. The processes established by the steering group have identified financing for important projects that have been difficult to finance in the past. Furthermore, interviewed stakeholders (PA1A) found that the priority area management is very adept in ensuring that project developers are aware of available financing for projects labelled by the priority area.

Interviewed stakeholders across the four other areas find that new funding sources have been made more accessible for actors and that the EUSDR has developed an information framework facilitating funding. For instance in PA7, the 'Danube Funding and Coordination Network' was established, with the primary objective "to coordinate and synchronise national, bilateral and regional efforts in the Danube Region", which "should lead to the implementation of concrete joint funding actions for STI [Science & Technology & Innovation] activities".[110] In some priority areas (PA7, PA4), there are still issues with regard to funding of specific activities (travel, admin costs, etc.). Furthermore, allocation of national budget funding for national activities (parts of projects) is still a challenge and hampers the full implementation of actions (see Table 3-9 below).

Table 3-9 EUSDR: Findings from interview, survey and desk research – examples of mobilisation of finance

Priority area	Results – example from progress reports[111]	Interviews – selected findings[112]	Survey – results [113]
PA1A Waterways mobility	N/A	The participation of MOVE + REGIO in the SG has help secure financing in these countries especially to non EU-members (through Connecting Europe Facility) Countries must assign fix budget for maintenance / operation (e.g. river training works), etc. This is what people / sector are waiting for. Maintenance / operation should be done by the countries themselves, but they don't all have the budget for that. [most importantly BG]	12% and 34% for the respondents strongly or somewhat agreed to that new funding concepts have been developed (e.g. private, International Financial Institutions)
PA7 Knowledge society	Danube Funding and Coordination Network established	PA is strong on mobilisation of finance PA tried to establish a fund – but it was too early with the countries in the areas, but countries open up bilateral funds for multilateral COST action, Eureka are also important	
PA4 Water quality	Project preparation and identification of financing (e.g. JOINTISZA and DANUBE SEDIMENT)	Mobilization is easier: SG is informed about calls which leads to better understanding on various EU financing mechanisms The DTP, Horizon2020, Life, CBC could be more embedded into the strategy It has become better, but the biggest problem is the lack of national funds for projects in the country New roles have been defined; the added value is: better link between and the funding instruments, e.g. ERDF but also on the national level, e.g. the Ministries dealing with the ESIF, e.g. in the OPs Concerning fundraising and partners: focus on networking, there is a serious contribution through the MRS frame	

[110] https://www.danubeknowledgesociety.eu/wg-3-danube-funding-coordination-network-dfcn

[111] Progress reports for the respective priority areas, see section 3.5

[112] Interviews with priority area stakeholders May-September 2017

[113] Survey results per 14.09.17 (policy level)

Joint development of projects and generation of project ideas

In the survey, 20% and 49% of the respondents strongly or somewhat agree that there is an increase in capacity for cooperation. This corresponds well with the interview finding that shows that project generation remains a specific activity of most of the priority areas in the EUSDR. Some of the priority areas have developed a plan (master plan/road map) that identifies the activities to be undertaken, whereas other priority areas develop projects ad hoc. According to interviewed stakeholders in PA1A, the intensive cooperation in the steering group promotes the generation of project ideas and increases the joint development of projects. Interviewed stakeholders in PA11 also seem to support this view. Furthermore, a very important milestone for PA1A is the development of a masterplan that provides a common framework for projects and activities. The plan also identifies whether the activities are to be financed through cooperative projects or by national budgets.

In the other priority areas (PA4, PA7 and PA9), interviewed stakeholders are more hesitant with regard to whether the work in the priority areas has resulted in joint project development. Networks and other opportunities for stakeholders to meet have been put in place, but lack of financing has been an obstacle, according to the interviewed stakeholders in PA7. More findings concerning the joint development of projects and project ideas are summarised in Table 3-10 below.

Table 3-10 EUSDR: Findings from interview, survey and desk research – examples of increased joint development of projects and generation of project ideas

Priority area	Results – examples from progress reports[114]	Interviews – selected findings[115]	Survey – results [116]
PA1A Waterways Mobility	Project preparation and identification of financing (port related projects)	Networking has improved. People participated in SG and ensured that stakeholders could get involved in several ways. It's a step forward There are not many ready-made joint projects – project generation and development are important activities	20% and 49% of respondents strongly or somewhat agree to that there is an increase in capacity for cooperation
PA7 Knowledge Society	Project preparation and identification of financing	The coordination between funds does not really work and there is no real link between funds and the MRS - With the exception of DTP – this is a big problem	
PA11 Security	Project planning and preparation (e.g. within field of "Deradicalisation")	PA is strong on mobilisation of finance Tried to establish a fund – but it was too early	

Increased cooperation on major issues in the macro-region

According to several stakeholders across the five priority areas, the cooperation in the MRS has resulted in that problems have been addressed through working together. The survey supports this finding with 25% and 64% of respondents strongly or somewhat agreeing (at policy level) that the major challenges for the macro-region are reflected in the action plan. Especially, stakeholders in PA1A and PA11 find that this has happened. For example, cross-border controls procedures are a key topic in PA1A –a practical manual as well as

[114] Progress reports for the respective priority areas, see section 3.5

[115] Interviews with priority area stakeholders May-September 2017

[116] Survey results per 14.09.17 (policy level)

recommendations for improvement of procedures was developed. In the other priority areas (PA9, PA7), interviewed stakeholders are not convinced that the work has addressed major issues within their own priority area, but found that the EUSDR overall had supported cooperation on major issues (Table 3-11).

Table 3-11 EUSDR: Findings from interviews, survey and desk research – examples of increased cooperation on major issues in the macro-region

Priority area	Results – examples from progress reports[117]	Interviews – selected findings[118]	Survey – results[119]
PA1A Waterways mobility	Practical manual for cross-border controls (published August 2015) Recommendations and measures for improvement of cross-border control procedures	Cooperation and thus help for financing Danube-related activities (maintenance, etc.), which is a major issue for the macro-region Bridges created with particularly DG MOVE, REGIO + ENV (sometimes ENER + RESEARCH). So building of coop not only btw countries, but also btw DGs + also with the European Parliament. Showing that problems of the Danube region, not problem of only HU + RO, but of the entire region. Meeting in Trieste discussed the extension of TEN-T corridors – this discussion comes mainly from the EUSDR (where the importance of these transport connections has been made)	25% and 64% of respondents strongly or somewhat agree to that the major challenges for the macro-region are reflected in the action plan
PA11 Security	International symposium "Organized Property Crime – New Approaches in Combating Domestic Burglaries"	The is an increase in cooperation on major issues The cooperation under PA11 has taken a concrete shape and achieved visible results. It has created new impulses and led to transnational projects	
PA7 Knowledge society	No example in progress report	There are various responses to the need for research and mobility in the region – brain drain in the some of the countries in the regions There is more cooperation on major issues such as: Flood risk management and navigation There is a question on how to implement the activities across the Danube regions. There is a danger of too many activities at too many different levels lacking actual results. The future roll-out of projects is not clear	

Increase in implementation of (regional/EU) polices in the macro-region

In the survey, 13% and 56% of the respondents at policy level strongly or somewhat agree that there is an increase in implementation of EU polices in the macro-region. This corresponds with the fact that interviewed stakeholders in two of the priority areas, PA4 and PA11, point to an implementation impact (River Information Services are implemented in a harmonised way based on the RIS Directive (2005/44/EC) and the Implementation of 2nd Danube River Basin Management Plan). One stakeholder in PA1A confirmed that it was important to help implement EU transport policy, but that the steering groups also wanted to give all member countries (EU Member States and non-EU members) the possibility of contributing (bringing national concerns to the discussion). Interviewed stakeholders in PA7 and PA9 did not see an impact on implementation of EU policies, probably because there is less EU acquis in these priority areas (Table 3-12).

[117] Progress reports for the respective priority areas, see section 3.5

[118] Interviews with priority area stakeholders May-September 2017

[119] Survey results per 14.09.17 (policy level)

Table 3-12 EUSDR: Findings from interviews, survey and desk research – examples of implementation of (regional/EU) polices

Priority area	Results – examples from progress reports[120]	Interviews – selected findings[121]	Survey – results[122]
PA1A Waterways mobility	River Information Services are implemented in a harmonised way based on the RIS Directive (2005/44/EC) and the implementation project IRIS III	Important to implement EU transport policy + issues important to local stakeholders There are also navigation problems in Germany – here it is not so much due to budget, but due to environmental issues	14% and 58% of the respondents at policy level strongly or somewhat agree that there is an increase in implementation of EU polices in the macro-region
PA4 Water quality	Implementation of 2nd Danube River Basin Management Plan (achieved in current period	It's more an implementation impact. After picking up MRS, we have much more cooperation and implementation. E.g. by making our internal action plans Again, creating networks, moving stakeholders contributing to the MRS objectives (6)	
PA9 People and skills	N/A	Does not happen in non-EU members states (4) Cooperation, beyond dialogue, at policy level is however the weakest point in the progress. At the SG meeting there is discussion about the policy, but there is weak follow up; after reporting at home, there is little action on what we can do in common and thus little impact. Also there is no feedback after reporting at state level. (8)	

3.4.2 Achievements – process-wise

Process achievements of the EUSDR

Overall, the analysis finds achievements 'process-wise' in a number of priority areas. The survey shows that the work in the macro-regional strategy strengthens cooperation in a number of ways which will be discussed below. The top scorer of the survey is: 'the MRS process brings together actors across countries'. The survey respondents also give the 'bringing in new across sectors' and 'across levels and type' a high score (Table 3-13).

[120] Progress reports for the respective priority areas, see section 3.5

[121] Interviews with priority area stakeholders May-September 2017

[122] Survey results per 14.09.17 (policy level)

Table 3-13 EUSDR: What is the added value of cooperation under the macro-regional strategies (MRS) in the policy/priority/pillar/thematic area?[123]

Percentage distribution of answers/ Sub-question	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Do not know	Respondents
Continuing on from previous cooperation and building on existing transnational networks[124]	45%	47%	3%	4%	1%	96
The MRS process brings together (new) actors across sectors (cross-sectoral cooperation)	51%	37%	10%	2%	1%	93
The MRS process brings together actors across countries	63%	31%	4%	0%	1%	93
The MRS process brings together actors across levels (national/regional) and type (public/private)	47%	38%	10%	2%	3%	93
The MRS process facilitates access to funding (the cooperation leads to an increase in funding)	13%	51%	26%	10%	1%	93
The cooperation brings legitimacy to the work and increases recognition of issues/needs/challenges	30%	49%	15%	5%	0%	93
The MRS process facilitates/deepens cooperation with third countries	32%	45%	10%	6%	6%	93
The MRS process facilitates synergies between policies; helps better understand the big picture at the policy level	31%	47%	16%	4%	1%	93

Building on collaboration in topic/area which already existed in the region (before the strategy)

An important aspect of the analysis has been to determine whether the strategies have added value to existing cooperation. 45% and 47% of the respondents (policy level) strongly or somewhat agree that they are continuing previous cooperation or building on existing transnational networks (Table 3-13). Interviewed stakeholders, in most of the priority areas, confirm that cooperation existed before the macro-regional strategy was launched and, in some priority areas, this cooperation was very developed (Table 3-14).

The cooperation has both been enhanced (deepened) and expanded to cover more countries. This is in particular the case for PA1A and PA4 – two priority areas that did see on-going cooperation before the EUSDR. In PA4, interviewed stakeholders find that the macro-regional strategy is building on a stable environment, especially the work of the ICPDR, although the roles of the ICDPR and MRS are different (the former deals more with regulative issues, the latter with political issues and searching for funds.). Work with the ICPDR has further broadened the context and helped put additional resources into areas. Noteworthy among the outcomes of this cooperation is the implementation of the Danube River Basin Management Plan, as mentioned in PA4's progress report (Table 3-14). Interviewed stakeholders in PA11 also agreed that the cooperation builds on the existing cooperation in the field of security in the Danube Region. The EUSDR has added value to the existing networks.

[123] Survey results per 14.09.17. Note that this table does not provide totals, as it integrates questions from different parts of the survey.

[124] What are the drivers for collaboration within your area/topic? per 14.09.17

Table 3-14 Survey results (EUSDR): Findings from interviews, survey and desk research – examples of building on collaboration in topic/area which already existed in the region (before the strategy)

Priority area	Results – examples from progress reports[125]	Interviews – selected findings[126]	Survey – results[127]
PA1A Waterways Mobility	River Information Services are implemented in a harmonised way based on the RIS Directive (2005/44/EC) and the implementation project IRIS III	Obviously the cooperation between waterway authorities, but was enhanced through EUSDR Did not start from scratch - Inland waterways has structure which dates back 60 years. The Danube Commission has been an important forum Strategies gave larger framework, where cooperation between countries and pillars is requested. Has given major reason to discuss issues, which was else very seldom taken on board The IW [inland waterways] sector is very small, know each other on expert level. Political level different	45% and 47% of the respondents at policy level strongly or somewhat agree that they are continuing on from previous cooperation and building on existing transnational networks
PA4 Water quality	Implementation of 2nd Danube River Basin Management Plan (achieved in current period)	Previous cooperation difficult to judge, but now there is much better cooperation with international partners. Everyone thinks more transboundary/nationally This is a very particular PA; there was no lack of cooperation. The MRS is no revolution. The ICPDR was formed in 1994, so there was a lot of work done In the area the work of the ICPDR was active long time ago. To a certain extent the same people sit in the MRS SC and the ICPDR, or they know each other very well. They are quite well integrated, have common agendas and projects	
PA11 Security	No example from report	Agree that collaboration existed before PA 11 is backed up with the clear and determined political will on continuously strengthening the cooperation in the field of security in the Danube Region One of the benefits of the involvement in the SG and the PAC, concerning development of new crime areas, they used MRS contacts for additional network, able to reach out Despite of the existence of the networks, the MRS is adding value	

The MRS process brings together (new) actors across sectors and countries

A second aspect has been to investigate whether the cooperation supports both horizontal and vertical cooperation. The survey shows that stakeholders at policy level find that the macro-regional strategy has brought more actors into the cooperation well as supported cooperation across countries. 63% strongly agree and 31% somewhat agree with the statement that the macro-regional strategies bring actors together across countries. Stakeholders interviewed for PA1A and PA4 very explicitly explain how the macro-regional strategy has brought stakeholders together in working groups and other fora, which would not have been possible without the strategy. The progress report for PA1A, for example, mentions a work plan for a joint working group with PA11 related to optimising administrative process concerning navigation on the Danube (Table 3-15). PA7 and PA11 also find that cooperation has improved, bringing new actors and sectors in contact. Interviewed stakeholders in PA9 found that there was 'room for improvement'.

[125] Progress reports for the respective priority areas, see section 3.5

[126] Interviews with priority area stakeholders May-September 2017

[127] Survey results per 14.09.17 (policy level)

Table 3-15 EUSDR: Findings from interviews, survey and desk research – examples of the MRS-process bringing together (new) actors across sectors and countries

Priority area	Results – examples from progress reports[128]	Interviews – selected findings[129]	Survey – results[130]
PA1A Waterways mobility	Work plan (for joint working group with PA 11) for optimization of administrative processes connected to Danube navigation	Established closer relations between other policy fields (incl. policy makers), e.g. working together with PA 11 (security) – joint working group to reduce administrative burdens. This would not have been possible, or at least not so easy, without the strategy Cooperation in other fields: environment, energy issues was strengthened	51% and 37% of the respondents at policy level strongly or somewhat agree that the MRS process brings together (new) actors across sectors (cross-sectoral cooperation) 63% and 31% of the respondents at policy level strongly or somewhat agree that the MRS process brings together actors across countries
PA4 Water quality	International workshop "Trust-building between Water and Agriculture Sectors in the Danube Region" in Bratislava on 04/10/2016	Meetings etc. with the strategic partners, ICPDR, representatives of PA4 and others. We went through the AP [Action Plan] and its milestones. It's important to also cooperate on other PA issues. E.g. there are cross-cutting issues with PA5, PA6, PA7. We can cooperate more on the horizontal level Allows putting emphasis on water and better integration with PA6, e.g. the Danube Area Task Force in PA6 [and:] the MRS also offers exchange among PAs, e.g. navigation sector, PA1A, PA5, PA6. There is potential for further improvement, it is a cross cutting issue. It depends on the actors	
PA7 Knowledge society	Pilot Multilateral Call on scientific and technological cooperation for 2017-2018	Science, innovation and education, SMEs have been brought together proving very good contact, how to cooperate and approach Horizontal role of PA7 is important to increase the performance of the other areas – but there is needed evidence that it happens and that it is working	

Cross-sectoral cooperation is also an important result of the work in the priority areas. Transport is linked with the environment and the energy sector in PA1A. Table 3-16 shows the survey results with regards to the value added of running a project within the macro-regional strategy. The sub-question with the highest score concerns 'involving more partners from more countries (geographical scope)'. 55% and 33% of the respondents highly or somewhat agreed with the statement in the question. Combined with the results of the survey at the policy level, where 51% and 37% of the respondents highly or somewhat agree with increased cross-sectoral cooperation, and 63% and 31% with increased cooperation across countries (Table 3-15), these results underline that both policy-level and project-level respondents rate highly the EUSDR's capacity to bring together new cooperation actors and partners.

[128] Progress reports for the respective priority areas, see section 3.5

[129] Interviews with priority area stakeholders May-September 2017

[130] Survey results per 14.09.17 (policy level)

Table 3-16 Survey results (EUSDR): What is the added value of running a project within the macro-regional strategy (MRS) in your area?[131]

Percentage distribution of answers/ Sub-question	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Do not know	Respondents	Standard deviation
We were able to involve new partners and increase the geographical scope (working within new thematic areas and/or geographical regions)	55%	33%	7%	0%	5%	83	0,97
We have been able to develop new concepts/ideas for tackling issues	54%	33%	6%	0%	7%	83	1,09
We have been able to attract new or additional funding	20%	45%	19%	4%	12%	83	1,2
We have developed new skills for cooperation on the issues in the area/topic	35%	47%	8%	0%	10%	83	1,14
We have been able to involve different levels of government/administration (multi-level governance)	31%	30%	25%	1%	12%	83	1,26
Total						83	1,13

The MRS process brings together actors across levels (national/regional) and type (public/private)

Vertical cooperation of multilevel cooperation (governance) is an issue discussed in many PAs in the EUSDR. In the survey, 47% and 38% of the respondents strongly agree or somewhat agree that the MRS brings actors together across levels (Table 3-17). This is lower than the horizontal cooperation described, above but still a significant result. Interviewed stakeholders for PA1A and PA7 find, in particular, that the work in the priority areas included other levels as well as the private sector and NGOs. Interviewed stakeholders for PA1A, PA7 and PA9 underline that the EUSDR provides opportunities to connect project implementers with policy-level actors by giving projects access to the steering committee meetings and by including private-sector representatives and NGOs as members of the steering group. The progress report of PA1A, for instance, highlights the streamlining of activities between PA1A, DG MOVE, and the Danube Commission – an activity clearly requiring vertical cooperation between the different levels of actors involved in the three institutions.

PA4, notably, does not have any (interviewed) stakeholders who have confirmed an increase in the vertical cooperation. Table 3-17 below presents a summary of these and other findings for PA1A, PA4 and PA9.

[131] Survey results per 14.09.17 (project level)

Table 3-17 EUSDR: Findings from interviews, survey and desk research – examples of multilevel cooperation (national/regional and public/private)

Priority area	Results – examples from progress reports[132]	Interviews – selected findings[133]	Survey – results [134]
PA 1A	Streamlined activities by DG MOVE, PA1a and Danube Commission	Vertical cooperation is core value added of the EUSDR Private actors and NGOs involved as observers in SG meeting, representing private shipping companies + environmental NGOs. Their involvement in the process is a benefit International organisations and national ministries are now partners in projects. And they send experts to the meetings In the current call for the DTP, giving a boost to NGOs to participate in the meetings and the forum; NGOs have identified the strategy as a new platform to give voice to their needs, demands and interests	47% and 38% of the respondents at policy level strongly or somewhat agree that the MRS process brings together actors across levels (national/regional) and type (public/private) 31% and 30% of the respondents at project level strongly or somewhat agree that they have been able to involve different levels of government/ administration (multi-level governance)
PA4	Memorandum of Cooperation between the Carpathian Convention (CC) and the EUSDR, PA4	Cooperation across the types of actors, yes, but not across the levels. There is a missing link between national and regional levels, and between public and the private sector PA4 try to involve stakeholders, organise events and workshops, matchmaking in the SC and pursue the identification for financing for Water Management investments	
PA9	"Strengthening Labour and Social Standards in the Digital Era. Social Partnership and Digitalisation in the Danube Region", Vienna, September 2016 Conference 'Building a Western Balkans Alliance for Work-based Learning' in Vienna (May 2016)	The MRS process brings together more public institutions and less private ones PA9 quite good in including a lot NGOs, also companies are important e.g. education models and triple-helix approaches Cooperation increase especially between local and national level	

Increase in cooperation with sector-relevant EU Commission service

Enhanced cooperation with EU Commission services is an important aspect of the cooperation within the EUSDR. Interviewed stakeholders find that the cooperation with relevant EU Commission Services is very important in order to ensure the policy and financing links. Interviewed stakeholders across the five priority areas differ with regard to their assessment of this cooperation – both within and in-between priority areas. In PA1A, the EU Commission Services participate frequently in meetings and have been instrumental in building the cooperation. Interviewed stakeholders state that only recently has the cooperation with EU Commission Services increased and not to the desired level. Interviewed stakeholders for PA7, PA9 and PA11 signal that more cooperation would be appreciated. Among the achievements in this area, the progress report of PA 11 mentions the speeding up of activities regarding Smart Specialization due to collaboration with the EC JRC (Table 3-18)

[132] Progress reports for the respective priority areas, see section 3.5

[133] Interviews with priority area stakeholders May-September 2017

[134] Survey results per 14.09.17 (policy level and project level, respectively)

Table 3-18 EUSDR: Findings from interviews, survey and desk research – examples of cooperation with sector relevant EU Commission services

Priority area	Results – examples from progress reports[135]	Interviews – selected findings[136]	Survey – results
PA1A Waterways mobility	Streamlined activities by DG MOVE, PA1a and Danube Commission	Relevant EU Commission services: We create a number of bridges, particularly between MOVE, REGIO + ENV (sometimes ENER + RESEARCH). So building of cooperation not only between countries, but also between DGs; and also with the European Parliament Yes, with DG MOVE + REGIO – who are the ones mostly behind 1A. Experts from both are there at SG meetings, also mostly at working group meetings, conveying the message the COM is willing to help + are requesting actions from MS + the projects as well. (Pushing ministries, waterway administrations to act to make good use of EU funds. When non-EU funds, e.g. for maintenance, are involved, still are active although cannot 'push'.)	Not covered by the survey
PA7 Knowledge society	The involvement and support provided by DG REGIO was very much relevant to PACs work. Close collaboration with the EC JRC speeded up activities regarding Smart Specialization (amongst other areas) in the DR	DG RD/JDR also DG education and culture – but space for improvement Cooperation has increased: JRC activities has stimulated the cooperation and the links to EU COM	
PA11 Security	With the undertaken activities we achieved a close involvement and good information of EC, DG Home. The implementation of the activities could only take place because of a very good cooperation with EC, DG REGIO and the DSP.	The main progress is in keeping an eye with what is happening with DG HOME. Till last year there was not much cooperation between DG HOME and DG REGIO. But DG Home recognised the value of PA11 and that it needs to be involved.	

Cooperation with third countries

The EUSDR involves both EU candidate countries and third countries (Ukraine and Moldova). An increase in the cooperation between both groups is an important part of the EUSDR. The survey shows (Table 3-13) that 32% and 45% of the respondents strongly or somewhat agree that cooperation has increased with third countries. This is clearly the least positive result in this group of questions. Stakeholder interviews (Table 3-19) show that this is an important aspects for the actors. Interviewed stakeholders would in general agree that increased cooperation has been achieved with third countries. Several interviewed stakeholders mention an increase in cooperation with especially Serbia (PA1A, PA9). Other interviewed stakeholders find that it has been difficult to engage third countries and, to some extent, candidate countries, due to funding issues both in relation to travel (participation in cooperation) and projects (PA4).

The cooperation with Ukraine and Moldova differs considerably across priority areas (Table 3-19). There is an increase in cooperation at policy level, where Moldova is part of the management (CO-PAC) in PA9, according to interviewed stakeholders. In PA9, the progress report also points to certain results as regards cooperation with third countries, namely the launch of the Western Balkan Alliance for Work-based Learning – which involves several EU and non-

[135] Progress reports for the respective priority areas, see section 3.5

[136] Interviews with priority area stakeholders May-September 2017

EU Member States, as well as EUSDR and non-EUSDR countries (Table 3-19). Some interviewed stakeholders also find that there may have been a lack of interest in the cooperation from the side of third countries, possibly due to limited relevance. In PA1A, for example, Moldova covers 600 metres of the river Danube, which makes the relevance of cooperation on waterway mobility limited. Other factors external to the EUSDR may also affect the cooperation in Ukraine (conflicts).

Table 3-19 EUSDR: Findings from interviews, survey and desk research – examples of cooperation with third-countries[137]

Priority area	Results – examples from progress reports[138]	Interviews – selected findings[139]	Survey – results[140]
PA1A Waterways mobility	Practical manual for cross-border controls (published August 2015) Recommendations and measures for improvement of cross-border control procedures	Ukraine is part of the cooperation but not part of projects yet Cooperation with Moldova reflects that Moldova only has 600m of the Danube (a port) and Moldova is not always able to send representatives. In relation to Ukraine there are a lot of important issues (environmental, commercial). There has been progress, but unsure whether this is not due to the MRSs Good cooperation with Bosnia (Danube) and Serbia (Sava). The Strategy has been positive influence on coop here. Serbia has very important connected issues	32% and 45% of the respondents at policy level strongly or somewhat agree that the MRS process facilitates/deepens cooperation with third countries
PA4 water quality	Memorandum of Cooperation between the Carpathian Convention (CC) and the EUSDR, PA4 Joint Trilateral meeting with EUSDR PA4 and ICPDR and Sava Commission (09/09/2017, Budapest)	There is a big possibility for cooperation - now (after the MRS) there is much better cooperation with international partners. However, the SG has long-term problem because representatives don't show up. Usually only 7-8 countries show up. Some representatives don't obtain the permits to travel to the meetings. May reflect lack of interest Cooperation has improved however It would be good to update the process for the future. For non-EU countries like BiH, a way must be found to be able to approach more funds including EU funds. For BiH the cooperation with ICPDR and the Sava Commission is crucial. The PA has strong cooperation with other actors beyond the region, e.g. Carpathian convention	
PA9 People and skills	Launch of Western Balkan Alliance for Work-based Learning' in Vienna (May 2016)* **includes representatives of public and private sector entities from AL, BA, XK, MK, ME, RS, AT, HR, FR, DE, IT, SI + other organisations*	Before MRS there was cooperation with a lot of countries. All countries involved in the Steering Group, except for Ukraine (only thematic/expert not policy level). Other forums are more separated (e.g. the Western Balkan forum (ENI countries) and EU28 forum). The MS - non-MS division is eliminated and CBC & TN cooperation can develop more easily Non-EU countries are forming partnerships, participate and seem much more engaged than before	

[137] Survey results per 14.08.17

[138] Progress reports for the respective priority areas, see section 3.5

[139] Interviews with priority area stakeholders May-September 2017

[140] Survey results per 14.09.17 (policy level)

3.5 Comparison of objectives of the EUSDR with achievements (Task 2c)

Comparison of objectives of the EUSDR with achievements (2c)

This section includes an analysis of the objectives (from the action plan[141]), targets (from the List of EUSDR Targets)[142], achievements (progress reports), and indicators (where available) of the five priority areas analysed for the EUSDR. These are illustrated in a logframe for each priority area. For each priority area, the progress towards targets and objectives is tracked through examples of achievements and progress registered in the progress report. The achievements are discussed drawing on the analysis of the achievements in Section 3.4.

Verifiable indicators

Where possible, the progress towards achieving the objective has been illustrated via one or more objectively verifiable indicators (OVI). The indicators used are either those included in the target by the priority areas (where available), or examples of those that were identified/analysed in Task 1 and Task 2a. To the extent possible, data for two periods is included for the indicators in order to describe the progress. These periods are, however, not identical for all indicators, but span the period 2010-2017.

Reporting and indicators

All priority areas in the EUSDR prepare reports twice a year in a standardised format and the reports are available on the website of the EUSDR. However, the progress reporting differs in terms of detail and quality. Progress is only in some progress reports directly measures on the target indicators, in most reports progress in measure in relation to milestones. This means that it is easier to track the achievements in some progress reports than in others.

PA 1A, Waterways mobility – Objectives vs. achievements

PA1A, Waterways mobility

PA1A, Waterways mobility, has set five targets. Target 1 is an impact target ('more transport via the Danube') and targets 2-5 are subordinate targets (output or result targets) related to the activities of the priority area.

The logframe for PA1A, Waterways mobility

In the logframe included in Table 3-20, the activities and the achievements (outputs/results) for PA1A, Waterways mobility, are documented, using the progress reports. The progress reports do not establish a direct link between the outputs/result and specific targets, and both activities and outputs often contribute to more than one target – directly or indirectly[143].

All the actions foreseen in PA1A have been launched. The database includes 111 projects in support of the actions. The most notable achievement is the 'Fairway Rehabilitation and Maintenance Master Plan' and the FAIRway Danube project, which should ensure the establishment of effective waterway management by 2020. A key strategic document to guide the activities of the PA1A, this plan

[141] EUSDR Action Plan

[142] List of EUSDR Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

[143] Delays of the Danube Transnational Programme have led to delays in other key implementation projects, such as Danube SKILLS.

outlines the key actions per country (national plans) to be carried out and monitored, in order to achieve the targets of the PA. Furthermore, a work plan has been developed, which is monitored by the strategy point (and in the future by the Transnational Programme).

Achievements also include the implementation of River Information Services, optimisation of administrative processes, a manual for cross-border controls, and the Danube Logistics Portal. All achievements are assessed as contributing to targets 2-4 directly. Target 3 will eventually involve investments which are outside the direct influence of the PA1A, but PA1A monitors the investment proposal prepared for the Danube.

Table 3-20 Logframe for PA1A Waterways mobility[144]

Input	Examples of activities	Examples of outputs/results	Targets
People/ organisations Funding Other (e.g. infrastructure, facilities, services)	• Development of master plan (FRMMP) • Data collection • Update/validation of plans (national action plans) • Project preparation and identification of financing (port related projects) • Issuance of Letters of Recommendation (strategic projects) • Project support provided • Implementation of systems (harmonised RIS) • Development of work plan and working group (red tape reduction) • Formulation of recommendations / measures, incl. collection of empirical feedback (control procedures) • Validation of best available technologies • Review of administrative agreement • Update of Portal (Danube Logistics)	• Fairway Rehabilitation and Maintenance Master Plan (FRMMP) • National Action Plans for monitoring the progress made on the implementation of the FRMMP • Letters of recommendation for port-related projects were released by the PA1a Steering Group for several projects (e.g. DAPHNE – Danube Ports Network and ENERGY BARGE). • River Information Services are implemented in a harmonised way based on the RIS Directive (2005/44/EC) and the implementation project IRIS III • Work plan (for joint working group with PA 11) for optimization of administrative processes connected to Danube navigation • Practical manual for cross-border controls (published August 2015) • Recommendations and measures for improvement of cross-border control procedures • List of best available greening technologies, as proposed by the PROMINENT project (Horizon2020) • Streamlined activities by DG MOVE, PA1a and Danube Commission • Full relaunch (by viadonau) of The Danube Logistics Portal in Spring 2016	Target (1) Increase the cargo transport on the river by 20% by 2020 compared to 2010. Target (2) Solve obstacles to navigability, taking into account the specific characteristics of each section of the Danube and its navigable tributaries and establish effective waterway infrastructure management by 2020. Target (3) Develop efficient multimodal terminals at river ports along the Danube and its navigable tributaries to connect inland waterways with rail and road transport by 2020. Target (4) Implement harmonised River Information Services (RIS) on the Danube and its navigable tributaries and ensure the international exchange of RIS data preferably by 2020. Target (5) Solve the shortage of qualified personnel and harmonize education standards in inland navigation in the Danube region by 2020, taking duly into account the social dimension of the respective measures.

Measuring progress via indicators

Progress on the targets is reported as satisfactory on Targets 2-5 in the progress report and delayed on Target 1 (Table 3-21). In order to assess the overall progress in the region towards the overall targets of PA1A, three indicators from

[144] Implementation Report of EUSDR Priority Area PA1a Mobility | Waterways, reporting period: 01/07/2015 to 30/06/2016 and 07/2016 - 12/2016

Task 1 and 2a reports have been used for Targets 1-3. Target 4 relates to the activities of the PA1A, and for Target 5, it has not be possible to find much information in the progress report, nor a suitable indicator.

Target 1 is an impact target measuring the progress towards the overall target of increased cargo transport on the Danube. The PA's progress report notes a delayed progress, due to an actual decrease in the cargo transport of 6.7% since 2010. The report mentions external influences as parts of the underlying cause (i.e. economic growth, supply chains changes). According to the progress report, the achievement of the target lies outside the direct influence of the PA, and the most important framework conditions, which can be influenced by PA1A (waterway infrastructure, port network, RIS and jobs & skills), are addressed by Targets 2 to 5 (Targets 2 to 5 are subordinate to Target 1)[145].

The progress towards Target 2 is assessed using the indicator 'completion of TEN-T Inland Waterways'. The data collected in Task 1 shows that five (Austria, Bulgaria, Germany, Hungary, and Slovakia) of the nine relevant Member States (Slovenia does not apply) have completed their inland waterways. Only Croatia, the Czech Republic and Romania have not completed theirs. While Croatia's achievement rate dropped to 33% between 2013 and 2014, the Czech Republic did make notable progress. This leads to the fact that, on average, the Member States of the EUSDR had a completion rate of 89% in 2013 and 2014. When compared to the 87% achievement throughout the EU, this result is therefore positive.

For Target 3 , the 'Logistics Performance Index' illustrates the quality of trade infrastructure, of which the quality of trade and transport infrastructure is one aspect. The average performance of the EUSDR on this index registers an increase of 9% between 2010 and 2016. The resulting score of 74 points on the benchmark shows, however, that the Danube macro-region still performs below the EU-wide level, with large scope for further improvements.

[145] Implementation Report of EUSDR Priority Area PA1a Mobility | Waterways, reporting 12/2016

Table 3-21 Progress on targets – PA1A Waterways mobility

Objectives	Targets[146] and indicators	Progress according to progress report[147]	Progress towards objectives via indicators (OVIs)
To improve mobility and multimodality	Target (1) Increase the cargo transport on the river by 20% by 2020 compared to 2010.	Delayed Progress	Status Report: (- 6.7%) since 2010
Improvement of infrastructure and economic performance of waterway navigation	Target (2) Solve obstacles to navigability, taking into account the specific characteristics of each section of the Danube and its navigable tributaries and establish effective waterway infrastructure management by 2020.	Satisfactory Progress	Completion of Ten-T Inland Waterways (%): 88.5% (2013) 88.5% (2014) -> (0%)
Improvement of the organisational framework and human resources for inland waterway navigation	Target (3) Develop efficient multimodal terminals at river ports along the Danube and its navigable tributaries to connect inland waterways with rail and road transport by 2020.	Satisfactory Progress	Logistics Performance Index (Benchmark): 68 (2010) 74 (2016) -> (9%)
No objective specified for Target (4)	Target (4) Implement harmonised River Information Services (RIS) on the Danube and its navigable tributaries and ensure the international exchange of RIS data preferably by 2020.	Satisfactory Progress	Related directly to PA1A activities
No objective specified for Target (5)	Target (5) Solve the shortage of qualified personnel and harmonize education standards in inland navigation in the Danube region by 2020, taking duly into account the social dimension of the respective measures.	Satisfactory Progress	Limited information

PA 4, Water quality – Objectives vs. achievements

PA4, Water quality

PA4, Water quality, has set five targets for its work (revised in 2016). The targets are of different character and levels (impact, output and results), and only some of the targets can be verified by external indicators.

The logframe for P4, Water quality

In the logframe presented in Table 3-22, the activities and the achievements (output/results) for PA4, Water Quality, are documented using the progress reports of the PA. The progress report does not establish a direct link between the outputs/result and specific targets as both activities and outputs result often contribute to more than one target – directly or indirectly. The key impact targets are to 'reduce the nutrient levels' and 'secure viable populations of Danube sturgeon species', and they are assessed by indicators in Table 3-23.

A number of activities support all five targets of PA4. Coordination activates are conducted, project prepared and financed, a road map has been developed, and implementation activities in relation to the river basin management plan

[146] List of EUSDR Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

[147] Implementation Report of EUSDR Priority Area PA1a Mobility | Waterways, reporting period: 01/07/2015 to 30/06/2016 and 07/2016 - 12/2016

initiated. Dissemination and workshop activities are building trust and supporting the cooperation, according to the progress reports. The work has improved policy dialogue as documented by the interviews and the survey (section 3.4.1).

A key output towards achieving Target 1 is the Implementation of the 2nd Danube River Basin Management Plan. This plan will have an effect on all the other targets as this provides the overall framework for the work of PA4. In support of Target 4, the ICPDR furthermore developed and updated the ecological prioritisation approach to addressing longitudinal continuity interruptions in the Danube River Basin incorporated into DRBM Plan – Update 2015. A number of projects are also implemented on sturgeon restoration projects[148] and for the strengthening of Tisza sub-basin cooperation[149].These projects should support the progress, specifically on Targets 3 and 5.

Table 3-22 Logframe for PA4 Water quality[150]

Input	Examples of activities	Examples outputs/results	Targets
People/ organisations Funding Other (e.g. infrastructure, facilities, services)	• Development Road Map • Implementation activities related to Road Map • Organisation of workshop • Project preparation and identification of financing (e.g. JOINTISZA and DANUBE SEDIMENT) • Implementation of plans (River Basin Plan) • Implementation of systems (GIS) • Development and update of communication / information materials (website, brochure) • Survey / field study work (e.g. on alternative collection and treatment wastewater in small rural settlements)	• Implementation of 2nd Danube River Basin Management Plan (achieved in current period) • International workshop "Trust-building between Water and Agriculture Sectors in the Danube Region" in Bratislava on 04/10/2016 • ICPDR Heads of Delegations – approval of the update of the Danube River Basin Management Plan, organisation of ICPDR Ministerial Meeting 2016 • Memorandum of Cooperation between the Carpathian Convention (CC) and the EUSDR, PA4 • Joint Trilateral meeting with EUSDR PA4 and ICPDR and Sava Commission (09/09/2017, Budapest) • Brochure on effective reduction of diffuse water pollution by nutrients from agricultural land • Brochure on information of the Drinking water directive update • Finalisation of the Danube Delta Analysis Report – coordinated by the ICPDR and supported by the ENVSEC Programme (period 1/2016)	1. Achieve the management objectives set out in the Danube River Basin Management Plan 2. Reduce the nutrient levels in the Danube River to allow the recovery of the Black Sea ecosystems to conditions similar to 1960s 4. Secure viable populations of Danube sturgeon species 3. Elaborate a Danube Delta Analysis Report as a step towards completion of the Delta management Plan (in progress) 5. Elaborate, adopt and implement the sub-basin management plans, such as Sava, Tisza and Prut sub-basins (in progress)

Measuring progress via indicators

In order to assess the overall progress in the region towards the overall targets of PA1A, three overall indicators from Tasks 1 and 2a have been used for Targets 1-3. The progress report records satisfactory progress on all targets, but

[148] Feasibility study on ex-situ conservation measures, Preparatory study on sturgeon behaviour at the Iron Gates dam, Ex-situ survey to preserve sturgeon genetic diversity in the Middle and Lower Danube - STURGENE, LIFE project on starlet restoration - STERLET

[149] The JOINTISZA project

[150] Implementation Report of EUSDR Priority Area 4 "to restore and maintain the quality of waters", reporting period: 07/2015 - 06/2016 and 07/2016 - 12/2016

without dates, this is difficult to verify externally. This progress is measured via milestones. No targets have been reached yet.

For Target 2: The share of rivers and lakes below 'good' ecologic status, according to the Water Framework Directive, provides an approximation of the nutrient levels in the Danube river basin, as those have a key impact on the ecologic status. 65% of the rivers and lakes of the Danube countries have an ecologic status below 'good', and thus a majority of waterbodies require a further reduction of nutrient inputs. The benchmarking score of 91 furthermore shows that the share is moderately higher than the EU median level of 100.

Target 4: The indicator 'Environment: River Status' consists, in addition to the share of rivers and lakes below 'good' ecologic status, of the share of rivers and lakes below 'good' chemical status. Both types of status provide information on the key conditions for a healthy aquatic fauna. As mentioned for Target 2, the countries of the Danube have a fair majority of waterbodies below 'good' ecologic status. The picture of the chemical status is, by comparison, much more positive: Only 6% have a chemical status below 'good', which results in a benchmarking value of 115, which is above the EU median level.

Table 3-23 Progress on targets – PA4 Water quality

Objectives	Targets[151] and indicators	Progress according to progress report[152]	Progress towards objectives via indicators (OVIs)
To restore and maintain the quality of waters	1. Achieve the management objectives set out in the Danube River Basin Management Plan	Satisfactory progress	• Share of rivers and lakes below 'Good Ecologic Status': 65 %, Benchmarked: 91 • Share of rivers and lakes below 'Good Ecologic Status': 65 %, Benchmarked: 91 • Share of rivers and lakes below 'Good Chemical Status': 6 %, Benchmarked: 115
	2. Reduce the nutrient levels in the Danube River to allow the recovery of the Black Sea ecosystems to conditions similar to 1960s	Satisfactory progress	
	3. Elaborate a Danube Delta Analysis Report as a step towards completion of the Delta management Plan	Satisfactory progress	
	4. Secure viable populations of Danube sturgeon species	Satisfactory progress	
	5. Elaborate, adopt and implement the sub-basin management plans, such as Sava, Tisza and Prut sub-basins	Satisfactory progress	

PA 7, Knowledge society – Objectives vs. achievements

PA7, Knowledge society

PA7, Knowledge society, focuses on developing cooperation in research, education and ICT. PA7 has established five targets. Targets 2-4 can be measured by indicators already provided in the targets. The assessment of Targets 1 and 5 draws on relevant indicators from Tasks 1 and 2a.

[151] List of EUSDR Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

[152] Implementation Report of EUSDR Priority Area 4 "to restore and maintain the quality of waters", reporting period: 07/2015 - 06/2016 and 07/2016 - 12/2016

The logframe for PA7, Knowledge society

In the logframe included in Table 3-24, the activities and the achievements (outputs/results) for PA7, Knowledge society, are documented using the progress reports of the PA. Activities include the development of projects and financing, development of websites and platforms, and organisation of stakeholder events. Outputs and results are still very much focused on getting the cooperation to function in terms of establishing networks (Danube Funding and Coordination Network established) and platforms (The Steering Platform on Research for the Western Balkans). In section 3.4.2, interviewed stakeholders pointed to the lack of commitment influencing the achievement and the difficulty in policy coordination. Although priorities have been aligned, there is still a need for platforms and coordination of information, according to stakeholders. The targets will generally not be achieved directly by the activities of PA7, except for Target 1. Many other factors influence these targets. The activities are assessed as important in terms of developing the policy framework and structures, which may contribute to achieving the targets.

Table 3-24 Logframe for PA7 Knowledge society[153]

Input	Examples of activities	Examples of outputs/results	Targets
People/ organisations Funding Other (e.g. infrastructure, facilities, services)	• Project preparation and identification of financing • Update of PA7 targets • Website development (danubeknowledgesociety.eu) • Establishment of platform for the better coordination of DR activities (DFCN) • (Co-)organization of events, fora and conferences (e.g. ICT Proposers' Day 2016) • Execution of workshops (DFCN) • Preparation and launch of multilateral call	• Increased interest for EUSDR, policy level recognition and visibility of the PA7 targets and actions among stakeholders • New website established • Danube Funding and Coordination Network established • Joint Statement of Ministers responsible for Research and Innovation of the participating countries of the EUSDR (including on reinforcing the alignment of funding, development and support of existing funding coordination mechanisms) • Pilot Multilateral Call on scientific and technological cooperation for 2017-2018 • COST ministerial conference held on September 25, 2016 in Bratislava • The Steering Platform on Research for the Western Balkans, Sarajevo, June 2016.	1. To increase the effectiveness of investment in R&I through establishment of a funding coordination network aiming to initiate a minimum of 2 dedicated EUSDR activities each year (e.g. joint calls; joint strategic project proposals (within a multilateral framework)). 2. To increase the number of EPO and PCT patent applications filed from the DR by 20% by 2020. 3. To enhance regional research and education co-operation to reach 20% of academic mobility within the region by 2020. 4. To increase the annual output of co-publications in the region by 15 % by 2020. 5. To develop RIS3 in all Danube countries (or their regions) by 2020.

Measuring progress via indicators

In order to assess the overall progress in the region towards the overall targets of PA7, three indicators from Tasks 1 and 2a have been used for Targets 1-4 (see also Table 3-25).

For Target 1, regarding increasing the effectiveness of the investment in R&I, the development can indirectly be described via the indicator 'Regional

[153] Implementation Report of EUSDR Priority Area 7 "To develop the Knowledge Society (research, education and ICT)", reporting period: 07/2015 - 06/2016 and 07/2016 - 12/2016

Innovation Scoreboard'. This indicator shows that the number of NUTS2 regions characterised as 'strong' or 'leader' innovators increased between 2008 and 2016. At the same time, however, the innovation capacity deteriorated in more NUTS2 regions than it improved. The 'EU Digitisation Index' shows furthermore that Member States of the EUSDR have, on average, improved by merely one benchmark point between 2014 and 2017. Particularly due to the time period (medium length) used for measuring innovation, the Danube macro-region did not make significant progress.

The indicators for Target 2 both show a drop in patent application. The number of EPO patent applications decreased between 2010 and 2014 by 9%. The reason for this decrease is a reduction of patent applications in Germany of 11%, which at the same time accounts for 88% in the region. The number of Patent Cooperation Treaty (PCT) applications shows an even stronger decrease of 32% between 2010 and 2013. Although Germany accounts for 75% of all patents in the region, the decrease is still 23% even if Germany is excluded.[154]

With regard to Target 3, the composite indicator 'Mobile students from abroad' of the 'Labour Integration Index' provides information about the degree to which students from the macro-region study abroad in a country of the macro-region, and thus academic mobility. The indicator shows that the EUSDR countries are on average more 'integrated' than the median level in the EU. At the same time, there are strong disparities: While Austria has one of the highest shares of students from the macro-region in the EU, Bulgaria, Croatia, Germany, Romania and Serbia each score less than 60 points on the benchmark, and thus have a particularly low share of abroad students from the macro-region. This indicates that there is still a long way to go in the macro-region.

Data with a 'time dimension' is not available for Target 4. However, one study provides a snapshot of 2003-2013, and demonstrates that a significant share of academic publication was co-published. The trend between 2010 and 2013 furthermore suggests an increase in annual co-publications.[155]

[154] EPO applications are also available by NUTS2 level, which would provide a more accurate presentation of Germany in the Danube. The most recent year available is however only 2012. The relevant German regions show an overall decline for this year. Similarly, data on PCT applications is also available, yet only until 2011.

[155] Danube-Inco.Net, 2015, Co-publication and co-patenting analysis among countries in the Danube region, https://danube-inco.net/object/document/15167/attach/D4-16_Co-publication_and_co-patenting_analysis_among_countries_in_the_Danube_Region_27-04-2015_updated_15-05-2015.pdf

Table 3-25 Progress on targets – PA7 Knowledge society

Objectives	Targets[156] and indicators	Progress according to progress reports[157]	Progress towards objectives via indicators (OVIs)
To develop the Knowledge Society (research, education and ICT)	1. To increase the effectiveness of investment in R&I through establishment of a funding coordination network aiming to initiate a minimum of 2 dedicated EUSDR activities each year (e.g. joint calls; joint strategic project proposals (within a multilateral framework)).	Satisfactory progress	'Regional Innovation Scoreboard'; 'Strong'/'Leader' innovating regions 15 out of 48 (2008) 16 out of 48 (2016) Improvement: 2 Deterioration: 3
			'EU Digitisation Index' (Benchmarked) 81 (2014) 82 (2017) -> (1%)
	2. To increase the number of EPO and PCT patent applications filed from the DR by 20% by 2020.	Satisfactory progress	Number of EPO patent applications (per million inhabitants) 25,837 (2010) 23,507 (2014) -> (-9%) (15% excluding Germany)
			Patent cooperation treaty (PCT) applications designated to the EPO 15,961 (2010) 10,836 (2013) -> (-32%) (-23% excluding Germany)
	3. To enhance regional research and education co-operation to reach 20% of academic mobility within the region by 2020.	Satisfactory progress	'Labour Integration Index', 'Mobility of students' (Benchmark) 106 (2015)
	4. To increase the annual output of co-publications in the region by 15 % by 2020.	Satisfactory progress	Co-Publication[158] 40 % (2003-2013)
			Intra Co-Publication[159] 48% (2003-2013)
	5. To develop RIS3 in all Danube countries (or their regions) by 2020.	Satisfactory progress	Related directly to PA1A activities (too early to measure)

PA 9, People and skills

PA 9, People and skills – Objectives vs. achievements

The overall objective of PA 9, People and skills, is to invest in People and Skills in the EUSDR. In order to reach this objective, five targets have been set. All

[156] List of EUSDR Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

[157] Implementation Report of EUSDR Priority Area 7 "To develop the Knowledge Society (research, education and ICT)", reporting period: 07/2015 - 06/2016 and 07/2016 - 12/2016

[158] Co-publication between at least one country from the Danube region, and at least one outside the Danube region.

[159] Co-publication between at least two countries from the Danube region

five targets are formulated broadly, identifying areas of cooperation such as employment, education, inclusion, and cooperation. Indicators of results and specific impacts are not formulated and thus not directly measurable. Activities described in the work programme[160] and reports indicate how the priority area will contribute to the overall themes.

The logframe for PA9, People and skills

The logframe presented in Table 3-26 describes the activities and the achievements (output/results) for PA9 and links these to the targets. The targets are a mixture of impacts and results. Activities include the development of projects and financing, development of websites and platforms, and organisation of stakeholder events.

The achievements have been identified in the progress reports from the PA9 as well as from interviews (see also section 3.4). Achievements recorded are described as outputs rather than results. Outputs focus on networking, communication and organisation of events to improve cooperation. The direct link to the targets lies implicit in that these activities will contribute to the targets. Interviewed stakeholders confirm that communication has improved: 'Platforms of communications exist but do not function very well as not all countries participate in the same way; not the same speed reaction from all countries for example to participate in meetings and events.'[161]

In this priority area, interviewed stakeholders agree less on progress on policy dialogue (see 3.4.1) – some stakeholders were very positive and others negative. This may reflect different expectations – some regard it as positive that there is dialogue and a forum to meet. For others, this is only a means to an end. Also on finance, the stakeholders differed in terms of their assessment of the effect of the EUSDR on mobilisation of finance. Some stakeholders also reflected that PA9 is a difficult area to cooperate on as the topic is traditionally national and it is thus difficult to find actions for stakeholders to cooperate on. Moving from a national approach to employment and education to a regional approach is a long term process. Some interviewed stakeholders reflected that participation in meetings and activities varied to specific sub-themes, depending on the particular interest of the countries.

[160] EUSDR | PA9 - Investing in People and Skills. Work Programme "Education and training, labour market and marginalized communities". MARCH 2016

[161] Interviews with priority area stakeholders May-September 2017

Table 3-26 Logframe for PA9 People and Skills[162]

Input	Examples of activities	Examples of outputs/results	Targets
People/ organisations Funding Other (e.g. infrastructure, facilities, services)	• (Co-)organisation of events, workshops + conferences • Project initiation (e.g. ESF empowerment projects) • (Strategic) project identification and labelling (e.g. "Down to Earth") • Project support provided (e.g. ESRA, RomaEdu-Danube) • Update of communication / information materials (website, folder) • Strengthening VET cooperation • Contribution to national coordination networks and platforms • Coordination activities (e.g. with EDU LAB, Danube Peace Boat)	• 4th International Stakeholder Conference of PA9 (Vienna, October 2016) • PA9 Workshop "Policies to reduce informal employment", Bucharest, July 2016 • PA9 Workshop "Qualifications framework development, curricula adapted to labour market needs", Chisinau, September 2016 • PA9 Workshop "Strengthening Labour and Social Standards in the Digital Era. Social Partnership and Digitalisation in the Danube Region", Vienna, September 2016 • Launch of initiative of the EUSDR Youth Platform • Adoption of new legislation / reform initiatives at national level (e.g. AT provides for better ECEC linking) • Conference 'Building a Western Balkans Alliance for Work-based Learning' in Vienna (May 2016) + launch of Alliance	(I) Contribution to a higher employment rate in the Danube Region, especially through tackling youth and long-term unemployment (II) Contribution to improved educational outcomes and relevant skills and competences in the Danube Region, focusing on learning outcomes for employability, entrepreneurship, innovation, active citizenship and well-being (III) Contribution to increased quality and efficiency of education, training and labour market systems (IV) Contribution to ensuring inclusive education and training and promoting inclusive labour markets, equal opportunities and non-discrimination as well as the promotion of civic competences and lifelong learning opportunities for all (V) Contribution to a closer cooperation between educational, training, labour market and research institutions, in particular on transnational, regional and bilateral levels

Measuring progress via indicators

In order to assess the overall progress in the region towards the overall targets of PA9, three overall indicators from Tasks 1 and 2a have been used for Targets 1-3. For Target 4, no relevant indicator is available, and Target 5 relates directly to the activities of the PA. As mentioned above, the direct contribution of the work of PA9 is difficult to determine as there are no measurable indicators in the targets for PA9. In addition, many other external factors will have an influence on the targets than those influenced by activities of the PA9.

Target 5 is the exception as this target directly relates to the work of PA9. As described above, the cooperation has increased as illustrated by the examples of achievements in Table 3-27. This was also confirmed through the stakeholder interviews discussed in section 3.4.

In Table 3-27, the employment indicators related to Target 1 show that the employment rate improved by 9 benchmark points between 2010 and 2015. The macro-region has thus advanced its position on employment rates above the EU median levels to 113 points on the benchmark. There are, however, from

[162] Implementation Report of EUSDR Priority Area PA 9 "Investing in People and Skills", reporting period: 07/2016 - 12/2016 and 07/2015 - 06/2016

none to marginal improvements on long-term- and youth unemployment respectively.

Target 2 aims to improve the educational outcomes in the region. The degree of tertiary and secondary education attainment are the indicators used to assess the progress of the target (Table 3-27). The secondary education attainment remained strong between 2010 and 2015 in the EU-wide comparison, but remained nearly constant. The tertiary education attainment has though deteriorated by a substantial degree (by 15 points on the benchmark or 11%). While the Danube region had a secondary education attainment close to that of the EU-median in 2010, the 2015 score of 80 points on the benchmark puts the macro-region clearly in the EU's lower half.

Target 3 focuses on the quality and efficiency of education, training and labour market systems. In Table 3-27, the rate of young persons "neither in education, nor employment or training" (NEET rate)[163] is shown. This indicators serves as an estimator for Target a, as it demonstrates the system's ability to utilise the available young labour force. The indicator shows that no change has been achieved in the EUSDR's first five years of existence. Nevertheless, it demonstrates that the Danube region manages to perform approximately as strong as the EU-wide median.

[163] Not in Education, Employment, or Training

Table 3-27 Progress on targets – PA 9 People and Skills

Objectives	Targets[164] and indicators	Progress according to progress reports[165]	Progress towards objectives via indicators (OVIs)
To invest in people and skills	(I) Contribution to a higher employment rate in the Danube Region, especially through tackling youth and long-term unemployment	Satisfactory progress	Employment Rate (Benchmark) 104 (2010) 113 (2015) -> (9%)
			Youth Unemployment (Benchmark) 102 (2010) 103 (2015) -> (1%)
			Long-term Unemployment (Benchmark) 97 (2010) 97 (2015) -> (0%)
	(II) Contribution to improved educational outcomes and relevant skills and competences in the Danube Region, focusing on learning outcomes for employability, entrepreneurship, innovation, active citizenship and well-being	Satisfactory progress	Tertiary Education Attainment (Benchmark) 95 (2010) 80 (2015) -> (-11%)
			Secondary Education Attainment (Benchmark) 128 (2010) 129 (2015) -> (1%)
	(III) Contribution to increased quality and efficiency of education, training and labour market systems	Satisfactory progress	NEET Rate[166] (Benchmark) 105 (2010) 105 (2015) -> (0%)
	(IV) Contribution to ensuring inclusive education and training and promoting inclusive labour markets, equal opportunities and non-discrimination as well as the promotion of civic competences and lifelong learning opportunities for all	Satisfactory progress	As above
	(V) Contribution to a closer cooperation between educational, training, labour market and research institutions, in particular on transnational, regional and bilateral levels	Satisfactory progress	The activities of the PA9 itself

PA 11, Security

PA 11, Security – Objectives vs. achievements

PA 11, Security, focuses on working together to tackle security and organised crime. To this end, the priority area has set four targets/objectives – none of these are formulated as directly measurable indicators or are easy to transfer into indicators. Reliable structures based on the rule of law are crucial for further

[164] List of EUSDR Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

[165] Implementation Report of EUSDR Priority Area PA 9 "Investing in People and Skills", reporting period: 07/2016 - 12/2016 and 07/2015 - 06/2016

[166] Young People neither in Employment, nor in Education or Training (NEET)

investment in the Danube Region. Only under these premises will economic development and integration be ensured, also in the future.

The logframe for PA 11 Security

The logframe included in Table 3-28 Table 3-26 describes the activities and the achievements (outputs/results) for PA 11. The achievements have been identified in the progress reports from PA11, as well as in interviews (see also section 3.4). The activities of PA11 focus on communication and events for bringing stakeholders together (symposium, workshops and more). Projects are prepared and finalised. An update of the manual border control checks was carried out. An important ministerial conference on terrorism was conducted in January 2016 in Sofia.

Table 3-28 Logframe for PA 11 Security[167]

Input	Examples of activities	Examples of outputs/results	Targets
People/ organisations Funding Other (e.g. infrastructure, facilities, services)	• Execution of workshops, events and conference • Project planning and preparation (e.g. within field of "De-radicalisation") • Project implementation ("Central-European CBRN-E Training Centre") • Project finalisation (e.g. "Countering trafficking in persons") • Preparation and design of follow-up project ("Cooperation Southeast Drugs and Firearms") • Establishment of National Contact Point (DARIF)	• Ministerial Conference on Combating Terrorism in the Danube Region (January 2016, Sofia) • International symposium "Organized Property Crime – New Approaches in Combating Domestic Burglaries" • Closing conference of PA 11 project "Danube Property Crime Project (DPCP)" • Symposium on Documents Management and Security of Travel Documents in the Danube region • Workshop on strengthening the cooperation between Police and Customs in combating drug trafficking • National Contact Point for Danube River Forum (DARIF) • Update of manual (border control checks)	Target I – Security offensive Enhancing police cooperation with the aim of improving security and tackling serious and organised crime in the EUSDR countries and strengthening the efforts against terrorism threats
			Target II – Developing strategic long-term cooperation between law enforcement actors along the Danube river by strengthening networks for cooperation by 2020
			Target III – Improving the systems of border control, document inspection management and cooperation on consular related issues in the Danube region
			Target IV – Promoting the rule of law and the fight against corruption

Measuring progress via indicators

In order to assess the overall progress in the region towards the targets of PA11, four indicators from Tasks 1 and 2a have been used for Targets 1-4. Direct indicators were identified for Targets 1 and 4 (see table Table 3-29).

For Target 1, there are only contextual indicators available for 2014. These show that the Danube region executes a lower number of drug seizures than other EU countries, as the benchmarking value of 81 reveals. In addition, the Danube exhibits a very high level of human trafficking: In 2014, three out of four victims in the EU originated from the macro-region, of which a vast majority was from Bulgaria and Romania. One out of three of the identified human trafficking victims was in 2014 furthermore identified in a country of the Danube region.

[167] Implementation Report of EUSDR Priority Area 11 (Priority Area 11 "Security"), reporting period: 01/08/2015 - 30/06/2016 and 01/07/2016 - 31/12/2016

These figures are clear evidence that, on average, the EUSDR countries still have work ahead of them to achieve more 'desirable' levels.

Target 4 promotes the control of corruption and rule of law. The World Governance Indicators (WGI) describe both issues of security directly. The rule of law has made substantial improvements within the EUSDR's first five years as the 14% improvement of the indicator reveals. The control of corruption has, however, remained at a constantly low level. The development on this indicator shows a dip in the performance in 2012 and has improved ever since.

If Austria and Germany are factored out, the Danube region scored on average (-0.14) points in 2010 and 2012, which shows that the majority of the macro-region's countries actually performs notably lower than the average indicates, due to Austria's and Germany's strong control of corruption.

Table 3-29 Progress on targets – PA 11 Security

Objectives	Targets[168] and indicators	Progress according to progress report[169]	Progress towards objectives via indicators (OVIs)
working together to tackle security and organised crime	Target I – Security offensive – Enhancing police cooperation with the aim of improving security and tackling serious and organised crime in the EUSDR countries and strengthening the efforts against terrorism threats	Satisfactory progress	Number of drug seizures (per million inhabitants) (Benchmarked) 81 (2014)
			Number of Human Trafficking victims 76% of the EU's victims originated from the macro-region in 2014 36% of the EU's victims were identified inside the macro-region in 2014
	Target II – Developing strategic long-term cooperation between law enforcement actors along the Danube river by strengthening networks for cooperation by 2020	Satisfactory progress	Ibid
	Target III – Improving the systems of border control, document inspection management and cooperation on consular related issues in the Danube region	Satisfactory progress	Ibid
	Target IV – Promoting the rule of law and the fight against corruption.	Satisfactory progress	Rule of Law (WGI)[170] 0.29 (2010) 0.33 (2015) -> (14%)
			Control of Corruption (WGI) 0.10 (2010) 0.10 (2015) -> (0%)

[168] List of EUSDR Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

[169] Implementation Report of EUSDR Priority Area 11 (Priority Area 11 "Security"), reporting period: 01/08/2015 - 30/06/2016 and 01/07/2016 - 31/12/2016

[170] Based on the World Governance Indicators, which use a range of -2.5 – 2.5

3.6 EUSDR and ESIF (Task 2d)

Funding of the EUSDR is an issue, which concerns many of the stakeholders of the EUSDR. The key funding mechanism is the Danube Transnational Programme (DTP). EU Programmes (Horizon, LIFE, and ERASMUS+) are also active in supporting projects under the EUSDR.

A relatively high percentage of the survey participants (Table 3-30) agrees that it is difficult to find/obtain funding for both the projects/activities, and for administration/coordination. In general, respondents and interviewed stakeholders do not yet perceive that there is an alignment between ESIF and the EUSDR. In addition, the respondents find that the competition in community programmes is high.

Table 3-30 Survey results (EUSDR): Is financing available for collaboration within the policy/priority/pillar/thematic area?[171]

Percentage distribution of answers/ Sub-question	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Do not know	Responses	Standard deviation
It is difficult to find financing for the projects/activities	47%	34%	16%	1%	2%	90	0,9
Funding for the administration and the coordination is not available or difficult to find	30%	47%	12%	7%	4%	90	1,04
The competition for funding is very high in EU Programmes (Horizon 2020, LIFE, etc.)	57%	32%	1%	0%	10%	90	1,19
There is an increase in alignment between the macro-regional strategy and ESIF funding – it is easier to get ESIF funding	12%	29%	28%	9%	21%	89	1,32
There is no added value being part of a MRS when applying for EU funding (labelling does not make a difference)	29%	30%	13%	15%	12%	89	1,37
					Total	90	1,16

The priority areas have different funding challenges

Table 3-31 shows examples of findings from interviews in the five priority areas analysed. In a priority area such as PA1A Waterways mobility, financing does not seem to be a large issue (apart from for national activities). Interviewed stakeholders in another priority areas reflect concerns with regard to financing: Especially issues such as stability and predictability of funding for both project/activities and management of priority areas were mentioned. 29% and 20% of survey respondents strongly or somewhat agree (Table 3-30) that there is little added value in being part of the EUSDR when applying for funding. Interviewed stakeholders stated that most programmes (that they would apply to) did not have a preference for EUSDR (supported) applications.

[171] Survey results per 14.09.17 (policy level)

Table 3-31 EUSDR: Selected interview findings – financing[172]

Priority Area	Question: It is difficult to find financing for the projects
PA1A Waterways mobility	• In general there is no funding problem. • More stable funding – more predictability in funding required. Request a more strategic approach many project run over a number of years and need predictable funding. • The TNP is the only programme which provides financing for e.g. travel costs (for meetings, etc. for exchange of knowledge, testing technology), which state budgets do not provide for this. • ESIF requires very large projects to change and I have not heard any - ERDF there are some countries.
PA4 Water quality	• Not difficult – there many financing possibilities through open calls (e.g. the Access tool from PA10). • It is difficult and it is the biggest barrier is lack of national funds and no access to EU Funds. • Suitable funding opportunities are available but there is limited budget; the added value of the strategy: in some PAs there was good examples and funds were available. This could be replicated. • The ETC DTP does not have a full picture here. It provides financing for the PACs.
PA7 Knowledge society	• It is difficult, and one of our working groups is focused in only on funding. • It has become easier, as bilateral agreements were opened to multilateral (SR + SK – AU CZ) cooperation. (Received around 60 proposals, with the possibility fund 20.) • Programmes are open support regional cooperation; they open a call for the Danube region (such as Eureka). • MRS projects should be recognised, and be a stimulation for EU funding.
PA9 People and skills	• Lots of programmes, which on paper fund MRS projects, but in practice they are not given priority. All projects can always say they correspond to Danube strategy, but in reality there are no projects coming out. • In a non-EU country, there is a problem. There is financing only with DTP (issues with regard to lead applicant. • Not an easy task for PA9, e.g. is there fund for migration?
PA11 Security	• The necessity of identifying funding sources: In PA 11, we put a special emphasis on the available opportunities for funding PA 11 projects. • Our experience taught us to actively and increasingly look for funding opportunities and possible alternative sources. • The dilemma with EU funding for the police is that the application form requires a very detailed outline of the project. On the other hand, the police delivers only detailed planning if the financing is already secured. • Funding is only via PA 11 and national funding (Hanns Seidl Foundation). Hanns Seidl Foundation only finances Eastern European Countries for policy development and security.

Interreg Danube Transnational Programme

The main source of funding is the transnational programme, Danube Transnational Programme (DPT); according to the survey (Table 3-31), with 51% of the respondents at project level confirming that they had received funding from the programme. At policy level, even more respondents confirm that the DTP is a very important funding source (77% of 65 respondents).

Interviews also show that stakeholders generally find the DTP an important source of financing. However, there is frustration amongst stakeholders that EUSDR-backed projects are not given priority. 48% of the survey respondents at

[172] Interviews with priority area stakeholders May-September 2017. Interview findings represent a selection of representative answers (adapted by the study team) – both positive and negative answers are reflected.

policy level indicate that they knew of projects in the priority areas, which had applied to the DPT without (or with limited) success. This figure was only 31% at project level. This difference may reflect the fact that stakeholders at policy level are aware of more projects and process than those at project level.

Table 3-32 Survey results: Funding for EUSDR activities (policy and project level)[173]

Survey results	a. The priority area has received funding from the following sources		b. Projects in the priority area have applied for or tried to get funding from the following sources – without success or with limited success		Number of respondents	
	Policy level	Project level	Policy level	Project level	Policy level	Project level
Interreg: Transnational	77%	51%	48%	31%	65	51
Interreg: Cross-Border Cooperation	47%	43%	33%	20%	57	35
ERDF/CF	38%	47%	26%	24%	42	17
EAFRD	11%	29%	33%	0%	18	7
ESF	33%	47%	28%	13%	36	15
IPA/ENI Cross-Border Cooperation	29%	50%	36%	13%	45	16
IPA/ENI	23%	45%	36%	18%	39	11
Horizon 2020	22%	28%	27%	33%	45	36
LIFE	21%	19%	21%	19%	33	21
Erasmus	36%	50%	31%	20%	36	30
International Financial Institution (loans)	18%	22%	33%	56%	33	9
National/regional	49%	59%	42%	20%	55	41
Private	24%	40%	32%	27%	37	15
Other	12%	73%	29%	14%	17	22
I do not know	55%	64%	86%	73%	29	11
Total					83	76

ESIF and the EUSDR

The use of ESIF to fund the activities and the projects of the priority areas of the EUSDR varies from priority area to priority area. In interviews, ERDF was mentioned as a possible source, but mostly as a source for funding of national activities (such as infrastructure investment in PA1A), not for direct cooperation.

[173] Survey results per 15.09.17 (policy and project level)

According to a survey conducted by the EU COM[174], 8 programmes reported on financial contribution to the EUSDR. Different types of alignment with the EUSDR have been reported by managing authorities and OPs, as detailed in Table 3-33.

Table 3-33 ESIF contribution to the EUSDR (findings of survey conducted by the EU Commission)[175]

Types of alignment between ESIF and MRS	Number of programmes
Programmes foresee different ways to support the implementation of the Strategy, mainly by two ways: • through organisation of targeted calls • giving extra points (10 programmes; different approaches are taken by different programmes); • implementation and funding of strategic projects	N/A
Programmes that have already financed in total 85 EUSDR projects.	4 programmes [Hungary Environment Cohesion Fund (51 projects), Slovenia Cohesion Fund (10 projects), Interreg Romania-Bulgaria (23 projects), and Interreg Slovenia-Croatia (1 project)]
Provided information on compatibility with and contribution to specific thematic areas of the EUSDR. (Energy Water Quality, Environmental Risks, Biodiversity, Competitiveness and Culture and Tourism).	28 out of 46 programmes

The interviews and the survey reflect the need for alignment as seen from the perspective of the EUSDR stakeholders. There is generally a wish for a better alignment between the EUSDR priority areas and the operational programmes of the ESIF. Some stakeholders reflect that efforts were made in order to align the priorities of the EUSDR in the operational programmes, but this has not materialised in actual activity and project funding, yet. Some interviewed stakeholders mentioned that national activities have been funded by ERDF in countries such as Hungary, Bulgaria and Romania (PA1A). Some interviewed stakeholders believe that the ESIF operation programme is well aligned to the EUSDR, but that it is up to the project developers to propose projects for funding.

Some interviewed stakeholders stated that 'promises' of funding from ESIF were made at the start-up of the current programme period – but have yet to materialise. In the opinion of some interviewed stakeholders, it was clear that this was going to be a difficult and time consuming process. It would have been more prudent to be more realistic, during the programming of the ESIF, in order to avoid frustrating stakeholders.

Some stakeholders also reflect that there needs to be a more structures process in order to include EUSDR stakeholders in the process. There are currently

[174] 46 programmes (out of 96 relevant programmes) replied to the survey

[175] European Structural and Investment Funds programmes' contribution to the EU macro-regional strategies. DG REGIO 16.02.17.

initiatives underway in the EUSDR to set up networks, which can coordinate between managing authorities and EUSDR stakeholders.

Table 3-34 EUSDR: Selected interview findings – ESIF and the EUSDR

Priority Areas	Question: The MRS-process has help reflect MRS priorities in the ESIF programmes in the macroregion Question: There is an increase in alignment between ESIF funding - it has become easier to combine different EU funds Question: MRS-actors have been involved in programming of ESIF and/or are in dialogue with Managing Authorities (MA) for ESIF
PA1A Waterways mobility	• DG MOVE has CF, but they much quicker reallocate the funds to others. ERDF – do not know. • Are mostly familiar with the OP in BG + RO. Here it's a binding, explicit requirement to be aligned with the EUSDR. So should be possible to find funding here.
	• More funding from ERDF; we need to use more of the ERDF to fund. • There have been made promises, but cannot sustain most of them; possibly better to be most realistic as possible, don't promise a much (saying that this will take time, cooperation and funding).
	• The macro-strategy gave opportunity to finance the development, many private actors are participating the meetings (such as now in Trieste).
PA4 Water quality	• Tried to implement theme into the OP. But meeting of PACs decided that OPs are difficult to implement/coordinate multiple OPs for one project. Other European mechanisms need to be used. • The PA4 objectives and AP were set in 2011. The ETC programme SEE was not involved. The ETC DTP drafted in 2013-14 integrated those objectives under the PA 4. This did not happen. • There is a missing link with ESIF. There need to be some instruments so as to be involved in programming.
	• Disagrees, saying: further alignment required with ESIF. • Proposals that reach the programme are either approved or rejected. There is not much contact with the proposals that failed, no one comes back.
	• This did not happen. There is a missing link with ESIF. There need to be some instruments so as to be involved in programming.
PA7 Knowledge society	• We try to organise a dialogue – how we can cooperate on the programmes – we are trying to synchronise all programmes in one unit. Not yet particular cooperation with ESF, but more with ERDF Innovation (we are communicating with them). • If the link to the MRS really helps to promote the project is not clear. The selection process of ESIF programmes is not transparent enough to answer this question from the point of a project applicant.
	• Combination is only possible between ETC and ERDF in different MS. However, I might be a pioneer in this field of combining funds for the laboratory project currently implemented. (Laboratory will be built in Vienna, but is based on a combination of different projects (ERDF AT, ETC CZ-AT, ETC HU-AT).
	• No specific earmarking for MRS yet – this will not change fundamentally.
PA9 People and skills	• Transfer of priorities into programs is not evident. Only in theory but not in practice. • Agrees to some extent.
	• In practice we don't know how it works. In practice, it doesn't happen; only in theory possible. • ESF has a transnational strand but people don't always know how to tap it. • A possible financing route might be from DTP to national ESF.
	• In practice it does not happen. • ESF Funding (transnational calls). We have started working on that. There was an initiative and workshops with MAs. There is a development, but we are not so much advanced as the Baltics who use it to a larger degree. • Some ESF's had more of a possibility to include TN calls than others; so the possibilities vary depending on the priorities. Just had a workshop 2 weeks ago, and we are on a good track. • In the last meeting of ESF MAs, representatives were also involved. The idea so far is to explore the

	possibilities (e.g. particular networks).
PA11 Security	• N/a for PA 11.
	• No responses
	• PACs agree.

EU programmes

EU programmes such as Horizon and ERASMUS+ are important funding sources for projects and activities in the EUSDR. Also CEF, LIFE, COST and Eureka were mentioned in interviews (Table 3-36) or in the survey (Table 3-35). As the EU programmes are sector-/area-specific, these are often, apart from Horizon, only active in one or maybe two priority areas. However, some of the EU programmes are more adapted to the type of cooperation seen in the EUSDR, according to some interviewed stakeholders.

CEF is, for example, a very important source of financing in PA1A (and possibly in PA1B), but it would not fund activities in any of the other priority areas due to its focus on transport infrastructure. The Fairway project is an example which provides strategic, yearly maintenance of equipment to the upgrading of the infrastructure of the Danube. LIFE is not very predominant since it does not necessarily focus on transnational cooperation. Other EU programmes do not cover travel etc. and can therefore be difficult to use for actors involved in transnational cooperation.

Table 3-35 EUSDR: Selected interview findings – Funding from EU programmes for EUSDR

	PA 1A Waterway mobility	PA 4 Water quality	PA 7 Knowledge Society	PA 9 People and Skills	PA 11 Security
COST	-	-	X	-	-
ERASMUS+	-	-	X	X (important funding)	-
EUREKA	-	-	x	-	-
LIFE	X	X (limited)		-	-
CEF	X (important)	x	-	-	-
Horizon	X	X	-	X	-
AMIF					(x)

Better coordination and cooperation between funding sources

Some interviewed stakeholders requested better cooperation and coordination between different programmes and funding schemes. In particular, there was a wish for closer cooperation between different EU Commission services. According to the interviewees, it would save time and avoid double work for priority areas, if there was a close or even a common dialogue with, for example, DG REGIO and DG MOVE (see Table 3-36).

Table 3-36 EUSDR: Selected interview findings – Financing, EU programmes

Priority Area	Question: Funding has been obtained from other EU programmes)
PA1A Waterways mobility	• DG MOVE was able to convince the EP to (through CEF) do something outside of the main corridors (TEN-T). Refurbishment of iron-gate lock: Serbia was struggling to find the funding. Was accepted by institutions + EP, that would finance this due to the great cooperation in the SG! • In the CEF, the competition low – in the first calls money was allocated to for the CF countries – Danube was priority, and in some case they did not present projects (there is a discussion). • Horizon (project 'Prominent', with AT, RO partners + project of navigation automation, with AT, HU + RS) they get / apply for Horizon.
PA4 Water quality	• Agrees, saying: LIFE has a co-financing problem as they got higher co-financing rates. It's not difficult to find financing mechanisms. • Disagrees, saying: it did not occur.
PA7 Knowledge society	• ERASMUS, COST, Eureka. • Horizon 2020 open to all regions. • Horizon 2020 application has been submitted, but the dropout rate is very high and we failed.
PA9 People and skills	• The above problem [MRS projects are not given priority] is even more evident with other EU programmes. For example with programs like ERASMUS, LIFE, Horizon 2020, they do not care if they are aligned with the Danube Strategy. Therefore the extent to which they complement to the Danube strategy cannot be judged. • Funding comes for PA9/education from Erasmus +, Interreg CEE, ESIF (ESF), START, CZ uses ESF transnational option. It is not clear what funding all the projects use. • Erasmus+, H2020, ETC DTP and CBC can be possible sources. But the funding is limited. • Erasmus+ provides the main funding.
PA11 Security	• Funding from NGOs and yet importantly – the EU funding (via the respective funds, ex. AMIF[176], etc.). This is a successful practice and our intention is to continue investing efforts in this respect. • No funding from EU Programmes available.

Other funding

Funding from other sources outside the EU programmes and ESIF also occurs. There is substantial national (budget) financing in various priority areas (typically national activities), NGOs fund activities, and other international funding sources have been registered. However, IFIs have not been very active in the financing of the activities of the analysed priority areas. There are probably two reasons for this: The first reason is that many projects are too small for IFIs. IFIs only fund projects of a considerable size. The second reason is that many investments projects in the EUSDR will not generate revenues to finance and repay the loan.

In some areas, such as PA11, international NGOs have funded activities – see more in Table 3-37 below

[176] Asylum, Migration and Integration Fund (AMIF)

Table 3-37 EUSDR: Selected interview findings – Financing, other financing

Priority Area	It has been possible to attract outside financing (financial institutions, national/regional resources, other international (non-EU) and private funding
PA1A Waterways mobility	• If any, very little. Because institutions like the EIB look for revenues, and in investment for e.g. 'Inland Waterways' are in the infrastructure / navigation (which does not provide any payback; nobody pays for navigation). Ports (supra-structure) have gotten by the EIB, World Bank + even the Chinese… (because it provides payback). • Q: What about EIB, world bank? - Recently discussion started with EBRD. Their projects start at volumes of 2-5 million EUR (EIB min. 50 million! So not relevant). There are also some private investors from outside of Europe. • greening and modernisation of the fleet is very difficult in comparison to the rest of EU – the banking sector is not into the IWT.
PA4 Water quality	• Agrees, saying: SK-agency for international cooperation or UNDP are other financing mechanisms. • No other financing was attracted. • [It seems that disagrees, saying:] Also for some of the projects […] the main outputs are strategic documents, not focusing on concrete investment, for 2019.
PA7 Knowledge society	• Agrees: Bilateral funding. • But ownership is at council level, and MS should therefore also be a source – alignment of funding has partly been achieved. • Only after setting up these kind of projects [ERDF + ETC], national and regional financing was possible. [also:] State aid and competition regulation do not allow any private financing for our project.
PA9 People and skills	• For PA9 not. For other areas like infrastructure and transport it is relevant and attract but not on PA9. PA9 depends on public funding. • Local financing is possible for PACs. However, for other stakeholders financing is an issue. For example an NGO from Moldova finally did not apply because of pre-financing. • There are also great attempts to bring the stakeholders to the funding opportunities. Together with PA10 (euroaccess website). • Agrees to some extent, saying: very difficult with non-EU sources.
PA11 Security	• PACs agree, saying: for example – funding from NGOs and yet importantly – the EU funding (via the respective funds, ex. ISF, AMIF[177], etc.). This is a successful practice and our intention is to continue investing efforts in this respect. • Agrees to a high extent.

[177] International Security Fund (ISF); Asylum, Migration and Integration Fund (AMIF)

3.7 EUSDR Case fact sheets

Fact sheet – PA 1A, Waterways mobility

Table 3-38 Profile/factsheet of the Priority Area 1A: Waterways mobility

	Name of macroregional strategy: EUSDR		Policy/Priority/Pillar: PA 1A to improve mobility and multimodality: inland waterways
Description	Given that inland navigation has a relatively low environmental impact (it emits 3.5 times less CO2 per ton-kilometre than trucks) it is an important mode of transport. Linked by the Main-Danube canal, the Rhine and the Danube are directly connecting eleven countries from the North Sea to the Black Sea over a length of 3,500 km. Hence, the Danube river represents the backbone of the Region5. However, the development of waterways as navigation corridors must go hand in hand in hand with the creation of modern and efficient intermodal ports to integrate navigation with rail and road.	Drivers/barriers	**Drivers:** • Common challenges and common rivers (e.g. waterway rehabilitation); • Implementation of the EU acquis + strategies (e.g. RIS Directive (2005/44/EC), Trans-European Transport Networks (TEN-T) Pan-European Transport Corridor VII) • Concrete + coordinated actions needed (e.g. for continuous fairway conditions along the Danube) • Existing international organizations (Danube Commission, ICPDR, Sava Commission, etc.) **Barriers:** • Differences in national legislation + funding opportunities (especially between EU and non EU countries • Financing: DTP is highly over administrated + lack of pre-financing • Limited political engagement as topic has low levels of public interest + focus may even bring up unpopular themes related to member countries' history.
Objectives	• Increase the cargo transport on the river • Solve obstacles to navigability, • Develop efficient multimodal terminals at river ports along the Danube and its navigable tributaries • Implement harmonised River Information Services (RIS) • Solve the shortage of qualified personnel and harmonize education standards	Indicators	• Progress on the PA objectives (ordinal scale with qualitative comments) • Progress on the PA actions (as above)
Outputs	• Letters of recommendation for port-related projects were released by the PA1a Steering Group for several projects (e.g. DAPHNE – Danube Ports Network and ENERGY BARGE). • Work plan (for joint working group with PA 11) for optimization of administrative processes connected to Danube navigation • List of best available greening technologies, as proposed by the PROMINENT project (Horizon2020) • Full relaunch (by viadonau) of The Danube Logistics Portal in Spring 2016	Results	• Fairway Rehabilitation and Maintenance Master Plan (FRMMP) • National Action Plans for monitoring the progress made on the implementation of the FRMMP • River Information Services are implemented in a harmonised way based on the RIS Directive (2005/44/EC) and the implementation project IRIS III • Practical manual for cross-border controls (published August 2015) • Recommendations and measures for improvement of cross-border control procedures • Streamlined activities by DG MOVE, PA1a and Danube Commission

	Name of macroregional strategy: EUSDR		Policy/Priority/Pillar: PA 1A to improve mobility and multimodality: inland waterways
Operational aspects:	The PA waterways mobility operates via National Action Plans (formerly called 'Roadmaps'), developed in accordance with the Fairway Rehabilitation Master Plan (endorsed by the Danube Ministers of Transport). The plans are 'living documents', which are updated twice a year. They are produced within the framework of the CEF-financed FAIRway Danube, who is monitors the implementation of the Fairway Master Plan in cooperation with PA 1A.	Organisation:	• The PA Mobility and Multimodality / Inland Waterway Transport is coordinated by PACs from Austria and Romania (Ministries of Transport and via donau) with involvement of the Steering/Advisory Group (EC, Danube region countries, Danube & Sava River Commissions (DC, ICPDR, ISRBC), Corridor VII, Danube Tourist Commission). • The PACs coordinate the work of the Thematic Working Groups, who are responsible for implementation of the Action Plan, identifying and coordinating projects). Further, ad hoc Thematic Working Groups deal with the coordination of actions and interactions with other priority areas.
Projects:	Projects in the area of: • Waterway infrastructure (33/3*) • Waterway management (13/5*) • Ports and sustainable freight transport (28/1*) • Fleet modernisation (12/3*) • River Information Services (9/4*) • Education and jobs (4/2*) • IWT Policies (5/2*) * Total number of projects, incl. project definition, preparation, implementation + completed projects / number of completed projects (per 03/12/2015)	Flagships/labelled projects	Strategic projects are either excellent project proposals ready for submission or projects already financed and relevant to the EUSDR.
Financing:	• Connecting Europe Facility (CEF) • Danube Transnational Programme / Interreg • ERDF • LIFE • Horizon 2020 CEF constitutes the maor funding source for PA 1A. Regional funds are mainly used for national level financing (e.g. management activities), in particular in Hungary and Romania. In some cases, projects (mainly related to ports) have been successful in attracting outisde financing,e.g. from China.	Phases/development	The PA builds on a 60 year old structure of cooperation within inland waterways in the Danube region. Whereas political involvement differs, on an expert level there is a minor group of interconnected actors that has been collaborating on the priority area's topics also before the EUSDR. The Danube Commission had provided a formal forum for cooperation between the countries, but the Strategy brought a fixed platform for the expert level. Additional value added is provided since new actors have been included through higher levels of cross-sectoral links.

Fact sheet – PA 4, Water quality

Table 3-39 Profile/factsheet of the Priority Area 4: Water quality

	Name of macroregional strategy: EUSDR		Policy/Priority/Pillar: PA4 to restore and maintain the quality of waters
Description	The PA4 deals mainly with the Danube, the most international river, with many crucial tributaries, lakes and ground water bodies. Ensuring good water quality, as required by the Water Framework Directive, is central. Sustainable water management is needed, jointly reducing pollution from organic, nutrient or hazardous substances. The River Basin Management Plan adopted by all Danube States in 2009 sets concrete targets and measures upon which to build.	Drivers/barriers	**Drivers:** • Common challenges and common rivers; • Implementation of the EU acquis (e.g. EU Water Framework Directive (WFD) and the Urban Waste Water Treatment Directive (UWWTD)) • Concrete actions needed (e.g. Danube RBMP 2009 and updates in 2015 and 2019) • Existing international organizations (ICPDR, Sava Commission, Carpathian Convention, GWP, EIP, etc.) **Barriers:** • Few barriers, cooperation is dense and long term; main problems are capacity, staff fluctuation and funding of the non-EU states.
Objectives	• Achieve the management objectives set out in the Danube River Basin Management Plan. • reduce the nutrient levels in the Danube River to allow the recovery of the Black Sea ecosystems to conditions similar to 1960s • elaborate a Danube Delta Analysis Report as a step towards completion of the Delta management Plan • Secure viable populations of Danube sturgeon species. • Elaborate, adopt and implement the sub-basin management plans, such as Sava, Tisza and Prut sub-basins	Indicators	• Progress on the PA objectives (ordinal scale with qualitative comments) • Progress on the PA actions (as above) • Progress on PA milestones (as above)
Outputs	• Joint meetings with EUSDR PA4 and ICPDR and Sava Commission aiming in coordination of process of PA4 EUSDR roadmap activities implementation; • Approval of **the update of the Danube River Basin Management Plan**, organisation of ICPDR Ministerial Meeting 2016; • Finalisation of the Danube Delta Analysis Report – coordinated by the ICPDR and supported by the ENVSEC Programme; • conference on Effective Utilization of Water Resources in the Conditions of Climate Change.	Results	• Mutual cooperation between ICPDR and Sava Commission resulted in mutual benefits; • strengthened cooperation with regional organisations and international organisations as well as commencing new connections with the Carpathian Convention, EIP Water and the OECD.
Operational aspects:	PA very advanced with mature operating framework defined by the scope and actions of the ICPDR Road map has been updated for 2016[178]	Organisation:	Tripartite governance structure with Hungarian and the Slovakian Priority Area Coordinators (PACs) and the ICPR. They is also the International Sava River Basin Commission, also known as Sava Commission (ISRBC).

[178] Roadmap_ https://www.danubewaterquality.eu/documents

	Name of macroregional strategy: EUSDR		Policy/Priority/Pillar: PA4 to restore and maintain the quality of waters
Projects:	• DTP - PA4 PAC project • DTP - THEMATIC POLE on Water Management (meta-structure for DTP projects related to EUSDR PA4, projects are: CAMARO-D, Danube-Sediment, JOINTISZA, DriDanube) • LIFE - DANUBEISLANDFOREST • CC-WaterS (Climate Change and Impacts on Water Supply, 2012)	Flagships/labelled projects	Strategic projects are either excellent project proposals ready for submission or projects already financed and relevant to the EUSDR.
Financing:	• Interreg ETC-DTP • Interreg CBC (various) • Horizon • LIFE • ERDF/CF (follow-up)	Phases/development	The PA is at a mature stage. It built up on experience and cooperation structures created through the ICPDR and the provisions of the WFD and the Directive 2007/60/EC on the assessment and management of flood risks.

Fact sheet – PA 7, Knowledge Society

Profile/factsheet of the Priority Area 7 Knowledge society

	Name of macroregional strategy: EUSDR		**Policy/Priority/Pillar:** **PA4 to restore and maintain the quality of waters**
Description	PA7 focuses on the development of the Knowledge Society (Research, Education and ICT). In order to reach the defined targets in the expected timeframes, the Steering Group has adopted a Roadmap. The actions of the Roadmap are regularly monitored and assessed, and the Roadmap updated regularly at the Steering Group meetings.	Drivers/barriers	**Drivers:** • Important objective in all countries • Better coordination between stakeholders and activities • Coordination of available funding sources **Barriers:** • Very broad field • Lack of overview on stakeholders and research activities • Involves mainly the same players • Lack of involvement of southern and eastern Danube countries Lack of knowledge about financial resources;
Objectives	• To increase the effectiveness of investment in R&I through establishment of a funding coordination network aiming to initiate a minimum of 2 dedicated EUSDR activities each year (e.g. joint calls; joint strategic project proposals (within a multilateral framework)). • To increase the number of EPO and PCT patent applications filed from the Danube Region by 20% by 2020. • To enhance regional research and education co-operation to reach 20% of academic mobility within the region by 2020. • To increase the annual output of co-publications in the region by 15 % by 2020. • To develop RIS3 in all Danube countries (or their regions) by 2020.	Indicators	• Progress on the PA objectives (ordinal scale with qualitative comments) • Progress on the PA actions (as above) • Progress on PA milestones (as above)
Outputs	Numerous outputs based on the roadmap september 2013[179], e.g.: • Analyses of the centers of excellence in the Danube Region • Analysis of countries' Smart Specialization Strategies • Feasibility study on the establishment of Danube Region Research and Innovation Fund (DRRIF), • Analysis of the situation in computer literacy and projects, which will contribute to the solution of the present situation. • Analysis of infrastructure for e-contents and e-services in the Danube region • List of Living Labs in the Region	Results	• Establishment of the Danube-INCO.NET • DRRIF - Danube Region Research and Innovation Fund

[179] PA 7 Roadmap actual version amended with respect to the last session of the SG PA7 Ulm, Germany September 2013

	Name of macroregional strategy: EUSDR		**Policy/Priority/Pillar:** **PA4 to restore and maintain the quality of waters**
Operational aspects:	PA 7 is very broad and covers a range of different aspects as well as different stakeholders. It consists out of the following five working groups: • WG1: higher education and mobility • WG2: Information and communication technologies • WG3: Danube Funding Coordination Network (DFCN) • WG4: Communication with Joint Research Centre with special emphasis on RIS3 • WG5: Research and innovation	Organisation:	Priority Area 7 is coordinated by Slovakia (Ministry of Education, Science, Research and Sport of the Slovak Republic) and Serbia (Ministry of Education, Science and Technological Development of the Republic of Serbia).
Projects:	• S3 - Smart Specialisation Platform • Danube-INCO.NET • WBC-INCO.NET • Danube:Future	Flagships/labelled projects	• DRRIF - Danube Region Research and Innovation Fund • DREAM - Danube River Research And Management.. from Basic Research to Knowledge Society Danube:Future - A sustainable future for the Danube River Basin as a challenge for the interdisciplinary humanities DANUBIUS - Danube International Centre for Advanced Studies for River-Delta-Sea Systems • HINO - Health Impact of Nanotechnology • INTVET - Introduction of Elements of Vocational Education and Training in Slovak Republic • DO-IT - Danube Open Innovative Technologies
Financing:	• COSME • Danube TNP, ETC • ERASMUS+ • Eureka • FP 7 • HORIZON 2020 • National funding via EUREKA • INCO-Net	Phases/development	The PA is in an advanced stage however due to the wide range of different stakeholders and subject the comprehensive overview of activities and partners in the Danube region is still missing. Furthermore the imbalance between up-stream and down-stream engagements has not been overcome.

Fact sheet – PA9, People and Skills

Table 3-40 Profile/factsheet of the Priority Area 9: Investing in People and Skills

	Name of macroregional strategy: EUSDR		Policy/Priority/Pillar: PA9 Investing in People and Skills
Description	Priority Area 9 addresses a very broad thematic area, subdivided into 8 work areas, which are the implementing bodies of the EUSDR: 1. Performance of education systems 2. Cooperation in labour market 3. Creativity and entrepreneurship 4. Life-long learning and mobility 5. Equity, social cohesion and active citizenship 6. Demography and migration 7. Social inclusion and poverty 8. Gender equality Each work area can be seen as a mini PA.	Drivers/barriers	**Drivers:** • Common problems in most countries, • Labour skills and employability is the major issue, also related to mobility and migration. **Barriers:** • Very broad PA; • Some aspects are politically sensitive (e.g. migration, refugees etc.) • Major stakeholders are used to operate in their national environment, cooperation is not well established; • lack National Qualification Frameworks, lack of comparability • very diverse background of institutions and people involved.
Objectives	1. Fostering efficiency, innovation and good governance in education and training and capacity building; 2. increase innovative capacities of the labour force 3. introduction of innovative learning 4. Institutional capacity building of LLL 5. Reform education and training systems 6. Education and training systems should enable all individuals t 7. empowering groups in risk of poverty; 8. create equal opportunities for women and men on the labour market,	Indicators	• Progress on the PA objectives (ordinal scale with qualitative comments) • Progress on the PA actions (as above) • Progress on PA milestones (as above)
Outputs	• (co-)organising several events and related thematic workshops that provide space to present and discuss measures, initiatives and actions both from a policy- as well as project-based perspective. • eTwinning PA9/OeAD thematic conference "learning, teaching, exchanging – school cooperation in the Danube region • Event within the framework of the Berlin Process on the subject of company- and practice-oriented high-quality vocational education and training. • Actions in VET, Labour Market Coordination Project between Moldova and Austria etc.	Results	• The event resulted in launching the Western Balkans Alliance for work-based learning. • For instance, to tackle the issues of youth unemployment and to serve as a meeting point (e.g. in collaboration with Interkulturelles Zentrum Wien successfully launched the initiative of the EUSDR Youth Platform) • e.g. with the project "Cooperation between Schools and the Business Sector in the field of tourism" or the project "VEN-Income generation in VET schools and colleges".
Operational aspects:	The operational framework of the PA defined by the very wide thematic scope and the work done in the 8 work areas. Work has been dominated by a bottom-up approach. The PACs have been facilitating the approach. The challenge now is to introduce some top-down structures without compromising the bottom up dynamics.	Organisation:	Priority Area 9 is coordinated by Austria and the Republic of Moldova. • PAC in Austria: On behalf of Austria, Federal Ministry of Labour, Social Affairs and Consumer Protection, and Federal Ministry of Education PAC in the Republic of Moldova, Ministry of Education, Ministry of Labour, Social Protection and Family.

	Name of macroregional strategy: EUSDR		Policy/Priority/Pillar: PA9 Investing in People and Skills
Projects:	• Central European Cooperation in Education and Training (CECE) • Education Reform Initiative of South Eastern Europe (ERI SEE) • New Danubian Governance in Labour Market Relevance of Higher Education (EDU-LAB) • Danube Competence Centres for Creativity and Entrepreneurship (Danube ENTRE) • Central European Exchange Programme for University Studies (CEEPUS) • EUSDR Youth Platform • Improving Institutional Capacities and Fostering Cooperation to Tackle the Impacts of Transnational Youth Migration (YOUMIG) • Changing Discourses, Changing Practices: The Roma as Human Resource (RARE)	Flagships/labelled projects	Strategic projects are either excellent project proposals ready for submission or projects already financed and relevant to the EUSDR.
Financing:	• Interreg ETC-DTP • Horizon • Erasmus+ LIFE • ESF (follow-up and transnational cooperation)	Phases/development	The maturity stages of the PA work areas differ significantly; some areas are concrete and operational; e.g. on VET and matching skills to the labour market. Overall the PA is at an early stage; it is about to establish or strengthen macro-regional experience and cooperation structures.

Fact sheet – PA 11, Security

Profile/factsheet of the Priority Area 11 Security

<table>
<tr><th></th><th>Name of macroregional strategy: EUSDR</th><th></th><th>Policy/Priority/Pillar:
PA 11 to promote security and tackle organised and serious crime</th></tr>
<tr><td>Description</td><td>PA 11 addresses security and organised crime in the Danube region. It has a broad thematic scope and is building on cooperation at bilateral level and under the umbrella of DG HOME.</td><td>Drivers/barriers</td><td>Drivers:
Transnational organised crime transfer mostly from east to west;
Immigration flow from south and east to west.
Barriers:
Some aspects are politically sensitive (e.g. border controls.)
Major stakeholders are used to operate in their national environment, organised crime operates truly transnationally;
Different legal systems and national security priorities;
Lack of knowledge about financial resources.</td></tr>
<tr><td>Objectives</td><td>Enhancing police cooperation with the aim of improving security and tackling serious and organised crime in the EUSDR countries and strengthening the efforts against terrorism threats
Developing strategic long-term cooperation between law enforcement actors along the Danube river by strengthening networks for cooperation by 2020
Improving the systems of border control, document inspection, management and cooperation on consular related issues in the Danube region
Promoting the rule of law and the fight against corruption</td><td>Indicators</td><td>1. Progress on the PA objectives (ordinal scale with qualitative comments)
2. Progress on the PA actions (as above)
3. Progress on PA milestones (as above)</td></tr>
<tr><td>Outputs</td><td>7 projects completed
Strategy for combating drug trafficking in the Danube region
common situation report
3 joint operations
2 technical workshops
Training activities by the Central-European CBRN-E Training Centre (Hungary)
Joint Information centre Mohacs (Hungary)</td><td>Results</td><td>International networking among practitioners from criminal law enforcement and judicial authorities as well as researchers and Europol should be improved.
Strengthened and improved information security, sharing (software) tools, information and trainings for security teams, including best-practice exchange.
Establishment of international network of experts and initiating the exchange of information within this network on a regular basis are among the expected results of the project implementation.
Awareness rising of knowledge gaps and lack of data exchange.
Improved data exchange for specific security aspects.
Controls covered the whole length of the Danube and its banks, as well as the Rhine–Main–Danube Canal.
Bilateral cooperation projects.</td></tr>
</table>

	Name of macroregional strategy: EUSDR		**Policy/Priority/Pillar:** **PA 11 to promote security and tackle organised and serious crime**
Operational aspects:	The topics of the PA are in national domains, so cooperation is voluntary in nature. There is lack of common reference frameworks, so emphasis is on increased information and data exchange and the rising of awareness on transnational security issues.	Organisation:	Priority Area 11 is coordinated by Germany (Federal Ministry of the Interior) and Bulgaria (Ministry of Interior of the Republic of Bulgaria). The Coordination Bureau in Bulgaria is situated in the ministry and provides assistance to the Priority Area Coordinators.
Projects:	• Danube Property Crime Project – DPCP (Bavaria) • Combating Cybercrime in the Danube Region - Law Enforcement 2.0 (Baden-Württemberg) • Countering Trafficking in Persons (SELEC) • Cooperation Southeast - Danube Region (Bavaria) • Illicit Trafficking of Firearms in the Danube Region (Slovenia) • Strengthening of information cycle management in fight against the organized crime and illegal migration for increasing the European security (Romania) • Cybersecurity in Danube Region (The Czech Republic)	Flagships/labelled projects	• Danube Property Crime Project – DPCP (Bavaria)
Financing:	• DG HOME grants, i.e. Asylum, Migration and Integration Fund (AMIF), Internal Security Fund (ISF) • Hanns Seidl Foundation • Seed Money Facility START Danube Region Project Fund – PA 10 • Norway Grants	Phases/development	The PA is in a relatively advanced stage due to the strong interests of the Ministry of Internal Affairs Bavaria and Federal German ministries. The German project partners are driver of projects and activities in the PA.

APPENDICES

EUSDR

Appendix A TASK 2a: Review of the EUSDR

A.1 Methodological Framework

A.1.1 Review of objectives

The review of the objectives hence utilises the previously gained insights to the degree possible. In some cases, literature had to be used instead. In order to provide an appropriate judgement on the objectives, which were defined in 2009 for the EUSBSR, the indicator data uses the years 2008 – 2010 (where possible).

Each objective is categorised into 'themes of intervention', to support a suitable choice for the relevant indicator. The themes generalise the objectives into broader categories such as RDI, competitiveness, or the aquatic environment.

The review occurs on three strands of needs:

- i) Aggregate,
- ii) Individual, and
- iii) Internal.

The Text Box below provides an explanation on the logic behind this definition.

Text Box 3-1: Explanation on the terminology used for the scopes of need

The preceding task benchmarks the four macro-regions on three strands:
i) Macro-region against Europe,
ii) Country against macro-region, and
iii) Internal differences (e.g. rural-urban, where applicable).

These three strands essentially analyse the i) **aggregate** performance of an entire macro-region, ii) the performance of the macro-region's **individual** countries, and lastly iii) the macro-region's **internal** performance (to the extent possible).

The underlying review uses judgement criteria to provide a justified traffic light assessment. The judgement criteria are as follows:

Table 3-41: Judgement criteria and associated indicators

Judgement criteria	Indicators
1) To which extent does the objective reflect an actual need for intervention?	The entire macro-region is a "bottom-performer" according to scope **i)** (see next section)
	A significant number of countries are "bottom-performers" according to scope **ii)** (ca. > 1/3 of the countries)
	Internal "bottom-performance" according to scope **iii)** (e.g. rural-urban)

2) Is the objective strategically relevant in a macro-regional context?	There is concrete evidence of an advantage in the macro-regional context (e.g. synergies, opportunities to learn from others, improved competitiveness of one country benefits all others)

The traffic light ruling is as follows in the table below.

Table 3-42: Traffic Light Ruling

Number judgement criteria fulfilled	Traffic Light
2	Corresponds to need + Macro-regionally relevant
1	Corresponds to need - OR – Macro-regionally relevant
0	No need + Not macro-regionally relevant

A.1.2 Composite Benchmarks

Composite Indices

Composite indices bundle separate (component) indicators into one index which allows the values of the whole bundle expressed as only one measure[180]; examples of such indices are the Human Development Index, Environmental Sustainability Index, and stock indices like the NASDAQ Index. In the course of gathering indicator data, the data have been grouped into sets of related indicators according to appropriately identified themes.

Composite Benchmarks

The benchmarking analysis focuses on the four macro-regions and the four dimensions inside each macro-region compares countries and/or NUTS-2 regions inside the individual macro-region based on a common reference framework of EU countries. The reference framework for each component indicator or composite index is delineated by the "top performer" of EU28 countries (benchmarked at 150), the "lowest performer" (50) and the median performer(s) at 100[181]. Throughout this analysis, a 'bottom performer' refers to a score below 100, while a 'top performer' refers to a score above 100. A high benchmarking score always reflects a more "desirable" situation. Taking unemployment rates as an example, higher scores reflect lower unemployment rates. In this way, the benchmarking results can always be read as showing whether – and to what extent – they are above or below the median in the EU at country level. This common framework enables observations to be made across different regions, even though the main focus remains within each macro-region.

[180] See http://www.investopedia.com/terms/c/compositeindex.asp

[181] The median is the point in a dataset in which a split of that dataset results in two sets with an equal number of data points. See http://www.investopedia.com/terms/m/median.asp for more details

The benchmark is always scaled on a country level against all EU28 Member States. The benchmarking score hence indicates a country's or region's relative position to all EU28 countries. This means in turn that one can observe values above 150 and below 50 in the cases summarised in the table below.

Table 3-43: Cases with benchmarking scores above 150 and below 50

Case	Explanation
Regional analyses (NUTS-2 level)	A NUTS-2 region may out-/underperform its country. Such as Stockholm (SE), performing higher than Sweden as a whole.
Non-EU countries	A non-EU country is not included in the benchmarking scale. Thus, a country like Ukraine may score above 150 or below 50, as they are not included in the scaling.
Macro-regional Integration analyses	Countries that are stronger/weaker integrated in a macro-region than the EU's 'top performing'/'bottom performing' country is integrated in the EU28 (see paragraphs below). For example, Germany's trade integration with countries in the Danube region comprises only a small share of its trade with all EU28 countries and is at the same time lower than that of the EU's 'bottom performer'.

Integration Indices

The chapter on integration includes new integration indices. These IHS-proprietary indices cover respectively Labour Integration (three indices plus a composite of these 3 components), Capital Integration (Foreign Direct Investment (FDI), Energy Integration, and Trade Integration. Each of these seven indices is constructed on a similar principle, which is outlined as follows.

When the amount or value of labour, capital etc. supplied by a country to another country (a 'partner'), or, equivalently, received from a partner, increases, it can be said that the level of integration between the two has increased. Considering a particular group of countries, the focus is on the bilateral flows between them. For the task of estimating integration within macro-regions, i.e. between individual countries belonging to the macro-region in question, the first step is the development of a "Bilateral Flow Matrix", as shown in the table below.

Table 3-44: Energy Integration Example (Baltic Sea), energy exports (kTOE)

Partner	Denmark	Germany	Estonia	Latvia	Lithuania	Poland	Finland	Sweden
Denmark	0.0	1,917.4	0.0	0.0	0.0	0.0	505.6	3,503.5
Germany	3.5	0.0	0.0	0.0	0.0	916.5	0.0	0.0
Estonia	0.0	0.0	0.0	522.7	0.0	0.0	25.6	0.0
Latvia	0.0	0.0	0.4	0.0	293.9	0.0	0.0	0.0
Lithuania	0.0	0.0	79.7	14.4	0.0	51.4	0.0	0.0
Poland	0.0	251.7	0.0	0.0	5.6	0.0	0.0	1.7
Finland	0.0	0.2	432.8	0.0	0.0	0.0	0.0	0.1
Sweden	477.6	168.3	0.0	0.0	0.0	302.0	1,484.4	0.0

Immediately, certain strong relationships between certain country-pairs are visible. What such a table of absolute values does not make clear is the 'importance' of a bilateral relationship for a specific country. A second step therefore converts the data to a relative share of all its exports (or foreign investments, migration flows, remittances) (in worldwide).

Table 3-45: Energy Integration Example, Share of total exports to partner country (in %)

Partner	Denmark	Germany	Estonia	Latvia	Lithuania	Poland	Finland	Sweden
Denmark	0.0	11.8	0.0	0.0	0.0	0.0	3.1	21.5
Germany	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0
Estonia	0.0	0.0	0.0	24.8	0.0	0.0	1.2	0.0
Latvia	0.0	0.0	0.0	0.0	13.8	0.0	0.0	0.0
Lithuania	0.0	0.0	0.9	0.2	0.0	0.6	0.0	0.0
Poland	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Finland	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0
Sweden	2.6	0.9	0.0	0.0	0.0	1.6	8.1	0.0

The new integration index provides a common basis for measuring integration in each of the four macro-regions, just as the case for every other indicator considered in this study. Given that the number of countries in the macro-regions vary, the total share of e.g. energy exports to the macro-region would grow with the number of member countries. Therefore, to provide a measure of integration that is not affected by the size of a macro-region, the chosen measure for each country's degree of integration within its macro-region is its per partner share (ppShare); i.e. the average flow to a destination country.

Table 3-46: Energy Integration Example, resulting per partner share

Partner	ppShare
Denmark	5.21
Germany	0.22
Estonia	3.72
Latvia	1.98
Lithuania	0.23
Poland	0.18
Finland	0.83
Sweden	1.90

Benchmarking Integration Indices

In the case of integration indices, the procedure to establish the benchmark is identical in formation as for the other indices, except that in this case the bilateral flow matrix is 28 x 28 for the EU28. Thus, the benchmark is defined by the average share that each Member State exports to the EU28 countries. This results in a per partner share of each Member State, but to the whole EU28, instead of a macro-region.

In other words, using the per partner share as a unit of measure enables the degree of integration within each macro-region to be benchmarked against the

degree of integration in the EU as a whole. This provides a deep insight into the question of whether the common geographical basis (and more) for the macro-regions is actually, and to what extent, of particular relevance compared to the entire setting of all EU countries, which may in general cover a more or less contiguous area, but which course also comprise (even more) multiple regional contexts.

As mentioned in Table 3-43 above, there are many cases found to score well below 50 or well above 150. This is entirely consistent: The reason, expressed mathematically, is that the two-dimensional flow matrices gives rise to country index values in macro-regions that are not subsets of the EU index; for non-integration indices, in contrast the (EU) country indicator values form by definition a subset of the EU28.

A.2 Pillar A: Connecting the Danube Region

A.2.1 Mobility and Multimodality (PA1)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-47: Summary of Assessment – EUSDR – 1. Improving mobility and multimodality

Strategy	Action	Strength	Weakness	Opportunity	Threat
EUSDR	1. To improve mobility and multimodality		X		
Theme of intervention		**Indicator**			
Transport infrastructure		'Logistics Performance Index', 'Completion of TEN-T', 'Accessibility Potential (composite)'			
Judgement on the strands of need					
Aggregate	While a need for improving the multimodal accessibility potential of the aggregate macro-region is not indicated by the data, the results concerning a need for better performance on TEN-T completion is inconclusive. However, as the Danube region's performance in terms of logistics performance – evaluated by the region's score on the 'Logistics Performance Index' – classifies the region as a 'bottom performer' with an average benchmark of only 68 points, intervention is clearly called for in the logistics and freight area.				
Individual	The majority of the region's countries (BU, HR, HU, RO, BA, ME and RS) perform below the EU median on accessibility potential, indicating a need at the individual level. As regards TEN-T completion, a third or more of the Danube region's countries are 'bottom performers' concerning roads, conventional rail, and inland waterways. Only completion of high-speed rail lies consistently above the EU median in the region's countries (for which data is available). Finally, AT, DE and CZ feature average scores of more than 100 point on the Logistics Performance Index, while all other countries are classified as 'bottom performers', with MD, UA and ME lagging behind significantly. Accordingly, for all three aspects of transportation infrastructure performance, a need for intervention is indicated at the individual level.				
Internal	*Not Applicable*				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	While the Danube region's countries perform well in terms of TEN-T inland waterway completion, the low performance – in many cases far below the EU median – on all other (parts of the) benchmarks reviewed indicate, that intervention on transport infrastructure is clearly justified, including concerning different modes of transport and multimodality, of freight as well as passenger transport. This Priority Area has clear macro-regional relevance, in particular related to the interdependencies of the different parts of the region related to inland navigation. Macro-regional cooperation in this connection could be expected to provide growth opportunities by improving macro-regional as well as inter-European trade conditions and to reduce the geographical barriers across the different parts of the Danube region.				

Theme of Intervention & Relevant Sources

Priority Area 1 aims to improve the transport infrastructure – involving a wide range of issues from technical to personnel aspects – of the Danube region in general, and the inland waterways, road and rail infrastructure in particular. Its objectives include the development and better exploitation of inland navigation opportunities provided by the Danube as well as improved multimodality, with a focus on the interconnection of inland waterways with rail and roads. The priority area addresses both freight and passenger transport, where the latter is concentrated on environmentally friendly public transport in urban as well as rural areas.

This broad array of topics related to transport infrastructure covered by the Priority Area must be considered from different viewpoints. Accordingly, the

'Logistics Performance Index', the benchmark for the completion of TEN-T and the composite indicator for 'Accessibility Potential' will be employed in order to review the Priority Area's aims.

Strand of Need: Aggregate

Overall, the Danube region's benchmark scores (from the year 2014) concerning completion of the Trans-European Transport Network are accumulated near to the EU median. Performance in terms of completion of road and conventional rail transportation lies below, while completion of high-speed rail and inland waterway lies above the median. Although the total average completion benchmark scores slightly above 100, missing data for high-speed rail and waterways make a conclusion as regards the need for intervention very uncertain[182].

On the Logistics Performance Index (LPI)[183], however, there is little doubt: The Danube region's average lies at a benchmark of 68 and thus categorises the region as a 'bottom performer'.

Considering multimodal accessibility potential, in terms of travelling time, for the aggregate strand (based on data from 2011), the picture changes somewhat, since the average performance of the Danube region's parts scores approximately 104 points on the benchmark.

Accordingly, a need for improving multimodal accessibility of the aggregate macro-region is not indicated by the data, while a need for better performance on TEN-T completion is inconclusive. In the area of logistics performance, however, the Danube region's score on the LIP clearly point towards a need for intervention. When considering the region as a whole, the Danube Strategy's focus on logistics and freight development thus appears warranted, whereas intermodal passenger transport seems to represent less of a challenge.

Strand of Need: Individual

The conclusions on accessibility from the aggregate strand change when reviewing the performance of the individual countries of the region. Although Austria, the Czech Republic, Germany, Slovakia and Slovenia feature scores of above 100 on accessibility potential, the majority of the region's countries – Bulgaria, Croatia, Hungary, Romania, as well as the Accession Countries Bosnia and Herzegovina, Montenegro and Serbia[184] – lie below the EU median, indicating a need at the individual level.

As regards completion of the TEN-T significant variations can be observed between the individual countries and, to a certain extent, also between the four different transport areas. Austria is the only country that performs above the EU median on road, inland waterways, conventional rail and high-speed rail. The latter is furthermore the only area, where all countries (for which data is available) perform above the EU median. The majority of countries are classified

[182] Data are available for EU Member States, but missing on one area each for Bulgaria, Croatia, Slovenia and Slovakia.

[183] Data are available for all of the Danube region's countries, except Serbia.

[184] Data for the Neighbourhood Countries, Moldova and Ukraine, are not available.

as 'bottom performers' on completion of TEN-T roads and conventional rail, and more than one third of the countries are 'bottom performers' concerning inland waterways. Thus, TEN-T completion manifests as a larger challenge when considering the individual strand, for which a need can be asserted.

Finally, only Austria and Germany are clear 'top performers' on the Logistics Performance Index, and the Czech Republic scores just above the EU median. All other countries are classified as 'bottom performers', with Moldova, Ukraine and Montenegro lagging behind significantly with average scores of 36, 36 and 26, respectively.

Hence, when considering the individual countries of the Danube region, it becomes clear that there are several challenges in terms of transportation infrastructure and functioning – in terms of large, cross-border infrastructure as indicated by TEN-T completion, the overall performance of logistics, as well as travel time for passengers and multimodality as indicated by accessibility potential.

Strand of Need: Internal

Not Applicable

Final Assessment

To which extent does the objective reflect an actual need for intervention?

On the aggregate level, the Danube region's performance lies a little above or below the EU median on most of the transportation and infrastructure benchmarks reviewed. The three most distinct conclusions on this level can be made for TEN-T completion of inland waterways and completion of conventional rail, where performance respectively lies more clearly above and clearly below the EU level (for the countries, on which data is available), and for logistics performance, where the region's average score lies even further below the EU median.

More markedly, there are significant differences at the individual level – i.e. between the different countries of the region. The majority of countries are bottom performers – partly with scores significantly lower than the EU median – on all indicators employed, except in the area of TEN-T completion of inland waterways (where only approximately a third of the countries score below 100) and of high-speed rail, where all countries' performance lies at, or above, EU median.

Concerning the last-mentioned area, TEN-T inland waterway completion, a need may thus not exist on the individual level. Including the low performance on all other benchmarks, however, a need for intervention on transportation infrastructure is clearly justified – which may include waterway infrastructure beyond TEN-T, and for instance the interconnection of inland navigation with others modes of transport.

Is the objective strategically relevant in a macro-regional context?

Even though interregional transport condition are an important part of improving Economic and Territorial Cohesion in general, cooperation on transport infrastructure within the Danube macro-region seems particularly imperative. Firstly, the region exhibits large variations in the performance of its different parts, for instance in terms of multimodal accessibility, which need to be addressed in order for the region to develop a balanced and comprehensively functioning infrastructure. Secondly, particularly the infrastructure related to the Danube requires a high level of coordination and cooperation across the region so as to develop the potential if the region's inland navigation and the related interconnections with other transport modes.

Overall, macro-regional cooperation on this Priority Area could be expected to provide growth opportunities by improving macro-regional as well as inter-European trade conditions and to reduce the geographical barriers across the different parts of the Danube region.

A.2.2 Sustainable Energy (PA2)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-48: Summary of Assessment – EUSDR – 2. Encouraging more sustainable energy

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	2. To encourage more sustainable energy		**X**		
Theme of intervention		**Indicator**			
Energy		'Energy Integration', 'Renewable Energy', 'Energy Efficiency', *External literature:* Giamouridis, A. & Paleoyannis, S. (2011), Security of Gas Supply in South Eastern Europe			
Judgement on the strands of need					
Aggregate	The Danube macro-region exhibits for 2015 an average energy integration that is higher than the EU-median. In other words, the share of energy that is exported from countries of this macro-region to other countries of this macro-region is higher than the EU-median. The benchmark on the use of renewable energy shows that the countries of the Danube macro-region count on average as a slight top performer. The energy efficiency indicator shows that the macro-region is on average a bottom performer due to a low score on the energy intensity of the individual economies. In terms of energy efficiency gains since 2000 however, the macro-region is on average a top performer. The analysis by Giamouridis & Paleoyannis (2011) emphasises that the gas supply in the Southeast European region has proven to be very vulnerable, as for example in the case of the gas crisis of 2009 between RU and UA, which had a serious impact on the Balkan countries.				
Individual	The overall high energy integration of the Danube can be explained by a strong share of energy exports into the macro-region by several countries. MD, UA, BG, and DE are the only countries who score below the median. The first two score around 50 points, while the latter two score around 80 points. Of the nine countries measured on renewable energy use indicator, five countries perform below the EU-median. While only two countries perform low on the primary supply of renewable energy, four countries do so on its gross final consumption. Notably only CZ and SK perform low on both components.A total of five out of nine measured countries qualify as bottom performers. The scoring on the index is in most cases negatively affected by the energy intensity of the individual economies: 8 out of 10 countries score 91 points or less. BG is even the lowest performing country of the EU and RS scores 41 points. Coupled to the overall strong energy efficiency gains, this points to a conclusion that many countries made significant efficiency improvements until 2010, but still have a long road ahead, when compared to EU standards.				
Internal	*Not Applicable*				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	On the aggregate strand, the judgement criteria is only fulfilled for the matter of energy efficiency. In addition, the external literature concludes that the South-eastern European gas infrastructure is vulnerable to disruptions and that a geographic diversification of sourcing would prove beneficial (e.g. through LNG ports). On the individual strand, the judgement criteria is fulfilled for energy efficiency and renewable energy use. A macro-regional approach to energy can strengthen the resilience and efficiency of the overall energy system as a diversity of supply from inside and outside the macro-region makes the distribution of energy more flexible. This flexibility can be particularly advantageous for networks with an increasing share of intermittent energy sources. Furthermore, a well-integrated infrastructure makes the addition of new geographic sources (e.g. in the form of LNG ports in the Adriatic Sea) economically feasible due to economies of scope. At last, when it comes to technical innovation on energy (e.g. energy efficiency), a macro-regional approach can support knowledge transfers. The macro-region's strong dependency on RU further exposes the region to political pressure.				

Theme of Intervention & Relevant Sources

The underlying priority area focuses on lower electricity prices, better energy (gas and electricity) supply, infrastructure and interconnections, the promotion of renewable energies, and improved energy efficiency in the macro-region. The allocated theme of intervention is therefore 'Energy'.

The review of this priority area consists of three indicators. 'Energy Integration' measures the exports of energy inside the macro-region, and thus the degree to which the energy infrastructure and market are integrated. 'Renewable Energy' measure the share of renewable energy sources, and 'Energy Efficiency' shows the energy efficiency gains made since 2000 and the energy intensity of the economies.
The chosen indicators do however not provide information on the quality of gas infrastructures. External literature by Giamouridis & Paleoyannis (2012) fills this gap.[185]

Strand of Need: Aggregate

The Danube macro-region exhibits for 2015 an average energy integration that is higher than the EU-median (see table below). In other words, the share of energy that is exported from countries of this macro-region to other countries of this macro-region is higher than the EU-median.

Table 3-49: Energy Integration in 2015, Source: Task 1

	Benchmark
AT	106
BG	80
CZ	133
DE	81
HR	117
HU	126
RO	115
SI	105
SK	119
BA	233
MD	50
ME	149
RS	131
UA	52
Danube	122

The benchmark on the use of renewable energy (Table 3-50 below) shows that the countries of the Danube macro-region count on average as a slight top performer.

[185] Giamouridis, A. & Paleoyannis, S. (2011), Security of Gas Supply in South Eastern Europe, https://www.oxfordenergy.org/wpcms/wp-content/uploads/2011/07/NG_52.pdf

Table 3-50: Renewable Energy (RE) Use in 2010, Source: Task1

	Index	RE Supply	RE Consumption
AT	131	136	126
BG	96	93	102
CZ	87	89	85
DE	96	101	89
HR	118	121	118
HU	91	100	82
RO	114	114	115
SI	112	114	111
SK	92	96	84
Danube	104	107	101

The energy efficiency indicator shows that the macro-region is on average a bottom performer due to a low score on the energy intensity of the individual economies. In terms of energy efficiency gains since 2000 however, the macro-region is on average a top performer.

Table 3-51: Energy Efficiency in 2010, Source: Task 1

	Index	Energy Efficiency Gains since 2000	Energy Intensity
AT	101	75	126
BG	92	135	50
CZ	86	93	79
DE	107	100	113
HR	81	71	90
HU	83	84	82
RO	97	116	79
SI	106	120	91
SK	116	150	82
RS	n/a	n/a	42
Danube	96	105	83

As mentioned, the chosen indicators do not describe the security of gas supply and the system's resilience towards supply disruptions, particularly from outside the region. The analysis by Giamouridis & Paleoyannis (2011) emphasises that the gas supply in Southeast European region has proven to be very vulnerable, as for example in the case of the gas crisis of 2009 between Russia and Ukraine, which had a serious impact on the Balkan countries. Further, the authors highlight that a significant majority of gas is supplied from Russia, but on multiple pathways.

Strand of Need: Individual

The overall high energy integration of the Danube ca be explained by a strong share of energy exports into the macro-region by several countries. Moldova, Ukraine, Bulgaria, and Germany are the only countries who score below the median. The first two score around 50 points, while the latter two score around 80 points.

Of the nine countries measured on renewable energy use indicator, five countries perform below the EU-median. While only two countries perform low

on the primary supply of renewable energy, four countries do so on its gross final consumption. Notably only Czech Republic and Slovakia perform low on both components.

A total of five out of nine measured countries qualify as bottom performers. The scoring on the index is in most cases negatively affected by the energy intensity of the individual economies: 8 out of 10 countries score 91 points or less. Bulgaria is even the lowest performing country of the EU and Serbia scores 41 points. Coupled to the overall strong energy efficiency gains, this points to a conclusion that many countries made significant efficiency improvements until 2010, but still have a long road ahead, when compared to EU standards.

Strand of Need: Internal

Not Applicable

Final Assessment

To which extent does the objective reflect an actual need for intervention?

On the aggregate strand, the judgement criteria is only fulfilled for the matter of energy efficiency. In addition, the external literature concludes that the South-eastern European gas infrastructure is vulnerable to disruptions and that a geographic diversification of sourcing would prove beneficial (e.g. through LNG ports). On the individual strand, the judgement criteria is fulfilled for energy efficiency and renewable energy use.

Is the objective strategically relevant in a macro-regional context?

A macro-regional approach to energy can strengthen the resilience and efficiency of the overall energy system as a diversity of supply from inside and outside the macro-region makes the distribution of energy more flexible. This flexibility can be particularly advantageous for networks with an increasing share of intermittent energy sources. Furthermore, a well-integrated infrastructure makes the addition of new geographic sources (e.g. in the form of LNG ports in the Adriatic Sea) economically feasible due to economies of scope. At last, when it comes to technical innovation on energy (e.g. energy efficiency), a macro-regional approach can support knowledge transfers. The macro-region’s strong dependency on Russia further exposes the region to political pressure.

A.2.3 Culture and Tourism, People to People contacts (PA3)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-52: Summary of Assessment – EUSDR – 3. Promoting culture and tourism, people to people contacts

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	3. To promote culture and tourism, people to people contacts		X		
Theme of intervention		**Indicator**			
Culture and Tourism		'Arrivals at tourist accommodation establishments', *External literature:* Teutsch, E. (2011), Construction of a Sustainable Tourism Destination: The Danube Region			
Judgement on the strands of need					
Aggregate	The indicator on tourism arrivals in the table below shows that the Danube regions score below the EU-median on the benchmark with 82 points. A SWOT analysis by Teutsch (2011) shows that, apart from AT and DE, the Danube region shares common weaknesses, such as the absence of a clear image of the Danube region, low competitiveness of tourism offers, poor cooperation in cross-border areas, or pollution. Teutsch's (2011) analysis concludes at last that tourism development should try to build on the geographic commonalities and avoid national rivalries.				
Individual	Based on the data for ten available countries, only DE's regions score on average barely above the median. BG and ME form the bottom end with scores in the 60s.				
Internal	The indicator on tourism arrivals does not indicate any internal difference between the e.g. the capital and non-capital regions.				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	On average, the macro-region is underdeveloped in comparison to the rest of the EU, as measured by tourism arrivals. This also holds for the individual countries. Of the countries with data, all regions but the regions of DE identify as bottom performers, with an average scoring going as low as 61 points. These observations therefore satisfy the judgement criteria of a need. Teutsch (2011) shows that the tourism sector in the macro-region is, compared to EU standards, underdeveloped due to several commonly shared weaknesses. Any developments should occur under a common brand, and avoid national competitions. Teutsch (2011) judges that tourism development in the Danube macro-region provides a good opportunity to support the integration of South East Europe into the EU via cooperation between states, regions, and communities. In effect, this can contribute substantially to the territorial cohesion of the macro-region, which points to the conclusion of macro-regional relevance.				

Theme of Intervention & Relevant Sources

Priority Area 2 focuses on tourism and cultural heritage. With respect to the former, the strategy shall secure the "long-term competitiveness and sustainability as well as regional benefits from new development and investments."[186] Cooperation shall therein play a re-enforcing role.
Given the shared heritage in the macro-region, cultural and civil society cooperation shall be promoted to e.g. "build on cultural diversity", or "enforce

[186] Action Plan, European Union Strategy for the Danube Region, SEC(2010)1489, p.26

contacts between people of different regions." [187] The corresponding theme of intervention is Culture and Tourism.

The indicator 'Arrivals at tourist accommodation establishments' measure the performance of the tourism sector, and thus provides an insight on its relative development compared to other EU destinations. This data is complemented with external literature by Teutsch (2011) to provide a more qualitative insight on the need for tourism development. [188]

Strand of Need: Aggregate

The indicator on tourism arrivals in the table below shows that the Danube regions score below the EU-median on the benchmark with 82 points.

Table 3-53: Arrivals at tourism accommodation establishments in 2011, Source: Task 1

	Benchmark
AT	98
BG	67
CZ	78
DE	101
HR	92
HU	70
RO	70
SI	85
SK	68
ME	61
Danube	82

A SWOT analysis by Teutsch (2011) shows that, apart from Austria and Germany, the Danube region shares common weaknesses, such as the absence of a clear image of the Danube region, low competitiveness of tourism offers, poor cooperation in cross-border areas, or pollution. Teutsch's (2011) analysis concludes at last that tourism development should try to build on the geographic commonalities and avoid national rivalries.

Strand of Need: Individual

Based on the data for ten available countries, only Germany's regions score on average barely above the median. Bulgaria and Montenegro form the bottom end with scores in the 60s.

Strand of Need: Internal

The indicator on tourism arrivals does not indicate any internal difference between the e.g. the capital and non-capital regions.

Final Assessment

To which extent does the objective reflect an actual need for intervention?

On average, the macro-region is underdeveloped in comparison to the rest of the EU, as measured by tourism arrivals. This also holds for the individual countries. Of the countries with data, all regions but the regions of DE identify

[187] Action Plan, European Union Strategy for the Danube Region, SEC(2010)1489, p.27-28
[188] Teutsch, E. (2011), Construction of a Sustainable Tourism Destination: The Danube Region, http://www.drcsummerschool.eu/proceedings?order=getLinks&categoryId=61

as bottom performers, with an average scoring going as low as 61 points. Teutsch (2011) shows that the tourism sector in the macro-region is, compared to EU standards, underdeveloped due to several commonly shared weaknesses. Any developments should occur under a common brand, and avoid national competitions.

Is the objective strategically relevant in a macro-regional context?

Teutsch (2011) judges that tourism development in the Danube macro-region provides a good opportunity to support the integration of South East Europe into the EU via cooperation between states, regions, and communities. In effect, this can contribute substantially to the territorial cohesion of the macro-region, which points to the conclusion of macro-regional relevance.

A.3 Pillar B: Protecting the Environment in the Danube Region

A.3.1 Water Quality (PA4)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-54: Summary of Assessment – EUSDR – 4. Restoring and maintaining the quality of waters

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	4. To restore and maintain the quality of waters		X		
Theme of intervention		**Indicator**			
Environmental Status of Inland Waterbodies		'Environment: River Status'			
Judgement on the strands of need					
Aggregate	The Danube macro-region qualifies on the Ecological Status of rivers and lakes as a bottom performer (benchmark of 91). This score is explained by the fact that nearly two-thirds of the waterbodies have an Ecological Status below Good, and thus shows that a clear majority requires action. The Danube macro-region scores on the Chemical Status of rivers and lakes with 115 points on the benchmark as a moderate top performer. The share of waterbodies with failing Chemical Status is further noticeably low with a share of only six percent. It should though be noted that the Chemical Status is generally good in the whole EU, which explains the combination of a low share of waterbodies with a failing status with a moderately high benchmarking score.				
Individual	The perspective on the individual countries shows that 6 out of 9 countries qualify as bottom performers on the Ecological Status, of which two only to a limited extent (i.e. HR and HU). Of these bottom countries, all exhibit a share of waterbodies with a status below Good between 50% and 87%. The remaining three countries, RO, SI, and SK are all moderate top performers, with a share of at most 40% below a Good Status. Data for the (potential) candidate countries and neighbouring countries in the Danube macro-region is not available for this indicator. Nearly all countries are top performers on the Chemical Status. AT scores even nearly as high as the EU's top performer and has a share of about 0.2% of waterbodies with a failing status. RO and DE qualify as bottom performers according to the judgement criteria, but only to a small extent. The only clear bottom performer is therefore the CZ and has a share of 29% of its waterbodies in a Fail Status; which is at least 21%-points higher than the other countries. Again, the data availability is limited to Member States only. The analysis of the individual strand shows that the judgement criteria is only fulfilled for the Ecological Status. Yet, the Water Framework Directive requires that all waterbodies must be in a Good Ecological- or Chemical Status. Interventions on the Chemical Status are therewith justified.				
Internal	*Not Applicable*				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	The analysis of the indicator shows that the judgement criteria are fulfilled on the aggregate and individual strand for the Ecological Status of rivers and lakes. In terms of the Chemical Status, the criterion is not fulfilled. Intervention on the Chemical Status is nonetheless justified as the Water Framework Directive requires Good Status for all waterbodies. The Danube and its tributaries are not affected by borders and every activity upstream of the basin has implications further downstream. Given that the Danube is an internationally shared resource, action to improve water quality is relevant on the macro-regional scale, if not even the only relevant approach. The reason being that only a coordination of efforts along the stream can lead to an effective and efficient improvement of water quality.				

Theme of Intervention & Relevant Sources

The Priority Area aims to improve the water quality in the macro-region due the Danube waters' importance to the macro-region. The Danube River Management Plan identified four key challenges for the river basin: Organic pollution, nutrient pollution, hazardous substances pollution, and hydro-morphological alterations to rivers and lakes.

The indicator 'Environment: River Status' provides information on the water quality of rivers and lakes, which consists of the Ecological-, and Chemical

Status of Rivers and Lakes (as defined by the Water Framework Directive). [189] The allocated theme of intervention is Environmental Status of Inland Waterbodies.

Strand of Need: Aggregate

The underlying table summarises the Ecological Status of rivers and lakes in the Danube macro-region, and shows that the macro-region qualifies as a bottom performer (benchmark of 91). This score is explained by the fact that nearly two-thirds of the waterbodies have an Ecological Status below Good, and thus shows that a clear majority requires action.

*Table 3-55: Ecologic Status of rivers and lakes and benchmarking score. Source: Task 1 & EEA. ** The data also includes regions outside the macro-region*

	Below Good	At least Good	Classified	%<Good	Benchmark
AT	4,276	3,125	7,401	58	87
BG	408	323	731	56	89
CZ	936	204	1,140	82	65
DE**	8,510	1,274	9,784	87	61
HR	627	638	1,265	50	95
HU	555	527	1,082	51	93
RO	1,367	2,026	3,393	40	106
SI	59	89	148	40	107
SK	637	1,123	1,760	36	113
Danube	17,375	9,329	26,704	65	91

Table 3-56 below summarises the Chemical Status of rivers and lakes and shows that the Danube macro-region as a whole scores with 115 points on the benchmark as a moderate top performer. The share of waterbodies with failing Chemical Status is further noticeably low with a share of only six percent. It should though be noted that the Chemical Status is generally good in the whole EU, which explains the combination of a low share of fails with a moderately high benchmarking score.

[189] In order to improve European Waterbodies, the EU commissioned the Water Framework Directive, which requires the Member States to achieve at least "Good Ecological Status" and "Good Chemical Status" of surface waters. Ecological Status refers to biological and hydrological quality of the water, and its "chemical characteristics". The ecological status can be classified into four categories: High, Good, Moderate, and Poor. The chemical status describes in turn the water's quality in terms of it content of chemical substances, and is classified as Good or either Fail.

Table 3-56: Chemical Status of rivers and lakes and benchmarking score.
*Source: Task 1 & EEA. ** The data also includes regions outside the macro-region*

	Fails	Good	Classified	% Fails	Benchmark
AT	18	7,383	7,401	0	148
BG	23	708	731	3	118
CZ	330	810	1,140	29	87
DE**	807	8,977	9,784	8	98
HR	30	1,235	1,265	2	126
HU	28	1,054	1,082	3	124
RO	222	3,171	3,393	7	99
SI	2	146	148	1	136
SK	87	1,673	1,760	5	100
Danube	1,547	25,157	26,704	6	115

Strand of Need: Individual

The perspective on the individual countries shows that six out of nine countries qualify on the Ecological Status as bottom performers, of which two only to a limited extent (i.e. Croatia and Hungary). Of these bottom countries, all exhibit a share of waterbodies with a status below Good between 50% and 87%. The remaining three countries, Romania, Slovenia, and Slovakia are all moderate top performers, with a share of at most 40% below a Good Status. Data for the (potential) candidate countries and neighbouring countries in the Danube macro-region is not available for this indicator.

Nearly all countries are top performers on the Chemical Status. Austria scores even nearly as high as the EU's top performer and has a share of about 0.2% of waterbodies with a failing status. Romania and Germany qualify as bottom performers according to the judgement criteria, but only to a small extent. The only clear bottom performer is therefore the Czech Republic and has a share of 29% of its waterbodies in a Fail Status; which is at least 21%-points higher than the other countries. Again, the data availability is limited to Member States only. The analysis of the individual strand shows that the judgement criteria is only fulfilled for the Ecological Status. Yet, the Water Framework Directive requires that all waterbodies must be in a Good Ecological- or Chemical Status. Interventions on the Chemical Status are therewith justified.

Strand of Need: Internal

Not Applicable

Final Assessment

To which extent does the objective reflect an actual need for intervention?

The analysis of the indicator shows that the judgement criteria are fulfilled on the aggregate and individual strand for the Ecological Status of rivers and lakes. In terms of the Chemical Status, the criterion is not fulfilled. Intervention on the Chemical Status is nonetheless justified as the Water Framework Directive requires Good Status for all waterbodies.

Is the objective strategically relevant in a macro-regional context?

The Danube and its tributaries are not affected by borders and every activity upstream of the basin has implications further downstream. Given that the Danube is an internationally shared resource, action to improve water quality is

relevant on the macro-regional scale, if not even the only relevant approach. The reason being that only a coordination of efforts along the stream can lead to an effective and efficient improvement of water quality.

A.3.2 Environmental Risks (PA5)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-57: Summary of Assessment – EUSDR – 5. Managing environmental risks

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	5. To manage environmental risks				**X**
Theme of intervention		**Indicator**			
Climate Change Adaptation & Environmental Risks		'Potential Climate Change Vulnerability'			
Judgement on the strands of need					
Aggregate	The average of the regions in the macro-region shows that the Danube is a marginal bottom performer on the potential vulnerability to climate change. The scores of the selected components also show that the average of the regions performs under the EU-median, yet only slightly.				
Individual	The average score of the regions of the individual countries shows that five out of eight countries (for which data is available) are bottom performers. BG lies at the bottom of the group with a score of 68 points, which is explained by a comparably strong environmental and economic impacts, coupled with a comparably weak adaptive capacity. RO is also a notable bottom performer, mainly due a very weak adaptive capacity (score of 59). All three top performing countries (AT, CZ, and DE) lie in the north west of the macro-region. The judgement criteria of a need is conclusively fulfilled.				
Internal	*Not Addressed*				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	The analysis shows that the regions of five countries (out of eight) perform on average below the EU-median. RO and BG are notable bottom performers. Aggregated to a macro-regional level, the regions perform on average below the EU-median, though rather marginally. The judgement criteria for a need for intervention are in conclusion fulfilled. However, no data or literature could be identified that relates specifically to the coordination of disaster response or the risk of man-made disasters, which limits the validity of this conclusion. Any disasters that occur on the Danube River, like floods or industrial accidents, can have implications for all passage countries. A macro-regional approach, and particularly on improved disaster coordination, can significantly improve the preparedness of downstream regions, and thus mitigate adverse impacts. Furthermore, extreme weather events as a result of climate change are not affected by national borders, such as forest fires. A strong coordination among countries can prove vital for immediate and effective disaster response. The priority area is therefore macro-regionally relevant.				

Theme of Intervention & Relevant Sources

The priority area addresses the threat of increasing environmental risks as a consequence of climate change or human activities. Improvement and coordination on the prevention, preparation for, and response to natural disasters, such as floods, droughts, water scarcity, but also man-made disasters like industrial accidents, are at the essence of this priority area.

The indicator 'Potential Climate Change Vulnerability' measures environmental and economic impacts, as well as the adaptive capacity as a weighted combination of most recent data an economic, infrastructure, technological, and institutional capacity as well as knowledge and awareness of climate change. Combined with the cultural, physical, and social impacts, a potential vulnerability was calculated.
The indicator does not optimally reflect on the existing degree of coordination for disaster response in the macro-region. A search for external sources did however not result in relevant literature. The analysis provides therefore no inference on any potential need for disaster response coordination.[190]

Strand of Need: Aggregate

The average of the regions in the macro-region shows that the Danube is a marginal bottom performer on the potential vulnerability to climate change; as can be seen in the table below. The score of the indicator's selected components also show that the average of the regions performs under the EU-median, yet only slightly.

Table 3-58: Benchmarking scores for the indicator 'Potential Climate Change Vulnerability' and selected components. The impacts are projections for 2071-2100, and the adaptive capacity based on the year 2011, Source: Task 1

	Potential vulnerability to climate change	Environmental Impact	Economic Impact	Adaptive Capacity
AT	108	100	97	120
BG	68	67	79	64
CZ	111	115	108	94
DE	119	109	111	127
HU	86	85	84	88
RO	74	83	80	59
SI	80	72	83	98
SK	88	90	91	87
Danube	96	94	94	95

Strand of Need: Individual

The average score of the regions of the individual countries shows that five out of eight countries (for which data is available) are bottom performers. Bulgaria lies at the bottom of the group with a score of 68 points, which is explained by a comparably strong environmental and economic impacts, coupled with a comparably weak adaptive capacity. Romania is also a notable bottom performer, mainly due a very weak adaptive capacity (score of 59). All three top performing countries (Austria, Czech Republic, and Germany) lie in the north west of the macro-region. The judgement criteria of a need is conclusively fulfilled.

[190] The 'Adaptive Capacity' component provides as an alternative the capacity of adaptation in terms of economic resources, knowledge and awareness, infrastructure, institutions, and technology. ESPON Climate, 2013, Final Main Report, https://www.espon.eu/sites/default/files/attachments/Final%20Report%20Main%20Report.pdf

Strand of Need: Internal Final Assessment

Not Addressed

To which extent does the objective reflect an actual need for intervention?

The analysis shows that the regions of five countries (out of eight) perform on average below the EU-median. Romania and Bulgaria are notable bottom performers. Aggregated to a macro-regional level, the regions perform on average below the EU-median, though rather marginally. The judgement criteria for a need for intervention are in conclusion fulfilled. However, no data or literature could be identified that relates specifically to the coordination of disaster response or the risk of man-made disasters, which limits the validity of this conclusion.

Is the objective strategically relevant in a macro-regional context?

Any disasters that occur on the Danube River, like floods or industrial accidents, can have implications for all passage countries. A macro-regional approach, and particularly on improved disaster coordination, can significantly improve the preparedness of downstream regions, and thus mitigate adverse impacts. Furthermore, extreme weather events as a result of climate change are not affected by national borders, such as forest fires. A strong coordination among countries can prove vital for immediate and effective disaster response. The priority area is therefore macro-regionally relevant.

A.3.3 Biodiversity, Landscapes, Air- and Soil Quality (PA6)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-59: Summary of Assessment – EUSDR – 6. Preserving biodiversity, landscapes and the quality of air and soils

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	6. To preserve biodiversity, landscapes and the quality of air and soils		**X**		
Theme of intervention		**Indicator**			
Human Environmental Impact		'Biodiversity: Natura 2000', 'Environment – Air Quality', 'Environment – Agricultural Impact', *external literature:* EEA, 2010, Environmental trends and perspectives in the Western Balkans: future production and consumption patterns			
Judgement on the strands of need					
Aggregate	**Biodiversity and Landscapes** The indicator on the share of terrestrial territory designated as a Natura 2000 site in 2010 shows				

	that the macro-region's countries perform on average as top performer with a score of 117. In relative terms, this corresponds to an average of 23% of the macro-region's territory. In comparison to the Member States of this macro-region, the enlargement countries have a substantially lower share for 2007: Merely 5.6% on average, which is about four times smaller than the Member State average. Yet, it should be noted that this data is three years older, and thus not well-comparable. **Air Quality** The 'Air Quality' indicator benchmarks the exposure of the urban population to poor levels of NO_2 and PM10. The Danube macro-region performs again as a top performer for 2014. This is explained by a high average performance on NO_2 concentrations, while the average level of PM10 concentrations corresponds to the EU-median. Data for non-Member States was not available. **Soil Quality** The Danube macro-region performs on average below the EU-median, which points to an undesirable soil quality, due to high nutrient surpluses of Phosphorus and Nitrogen.
Individual	**Biodiversity and Landscapes** The benchmarking shows that most of the Member States in the macro-region have a share of Natura 2000 areas above the EU-median. SI has even the highest share of the EU with 36%. The data indicates only two bottom performers: AT and CZ. These two bottom performers exhibit however still a higher share of designated areas than RS with 7.0% and especially BA with 0.8%. Overall, there are thus four countries (out of eleven countries with data) that count as bottom performers. **Air Quality** With respect to air quality, the CZ, DE, and SK, are bottom performers in 2014 (out of the eight countries with data). Their low performance is explained by the low performances on the exposure to PM10 concentrations, where BG and SK score particularly low. BG scores even nearly as low as the EU's worst performing Member State. **Soil Quality** The performances on the Phosphorus Gross Nutrient Balance shows that out of eight countries measured, only SI is a slight top performer. BG performs again nearly as low as the EU's lowest performing country. The picture is less severe on the Nitrogen balance: Half of the measured countries count as bottom performers (AT, BG, HU, and RO), with RO as the EU's lowest performer.
Internal	*Not Applicable*
Traffic Light	Corresponds to need + Macro-regionally relevant
Justification	The review shows that the Danube scores on the aggregate strand on average above the EU-median on Biodiversity and Landscapes. Factoring in the low shares of the Western Balkan countries, this average performance may be below the EU-median; this is only indicative due to a poor comparability of the data. On the individual strand, there are four countries with a low performance. The Air Quality indicator shows on average a top performance, but three countries with a bottom performance. On Soil Quality, the Danube scores on average below the EU-median, due to a high share of bottom performing countries. Overall, an actual need for intervention has been identified for all three indicators. The macro-regional relevance varies on the four subject matters. The biodiversity and landscape component is highly relevant, as national borders do not define the boundaries of habitats, but rather naturally shaped boundaries. Also, the aspect of education is relevant, given that the exemplified actions in the action plan clearly aim to establish a recognition of the Danube macro-region as a whole and seek to raise institutional capacity, which is among others often achieved through best-practice sharing. The aspects of air- and soil- quality appear however not macro-regionally relevant, but at most relevant on the cross-border scale.

Theme of Intervention & Relevant Sources

The priority area addresses an ever-increasing damage to the environment, due to rapid expansions of economic activities. In order to mitigate the impacts on the environment, this priority area addresses four main areas: Biodiversity and landscapes, improving the quality of air, improving the quality of soil, and

educating people on the value of natural assets. The allocated theme of intervention is therefore 'Human Environmental Impact'.

The review utilises three indicators to review the priority area: 'Biodiversity: Natura 2000', 'Environment – Air Quality', 'Environment – Agricultural impact'. Furthermore, external literature from the EEA supplements the Natura 2000 data for some (potential) candidate countries. [191]

Strand of Need: Aggregate

Due to the broadly distributed scope of this priority area, the analysis is divided into separate headings for each indicator.

Biodiversity and Landscapes (Aggregate)

Table 3-60 below shows the share of terrestrial territory designated as a Natura 2000 site in 2010. As can be seen, the macro-region's countries perform on average as top performer with a score of 117. In relative terms, this corresponds to an average of 23% of the macro-region's territory.

Table 3-60: Share of territory designated as Natura 2000 site in 2010 by country-level. Source: Task 1, EEA.

	% of territory designated as Natura 2000 site	Benchmarked value
AT	15	96
BG	34	146
CZ	14	92
DE	15	100
HU	21	115
RO	18	106
SI	36	150
SK	29	134
Danube	23	117

In comparison to the Member States of this macro-region, the enlargement countries have a substantially lower share for 2007, as the table below shows: Merely 4.5% on average, which is about five times smaller than the Member State average (see table above). Yet, it should be noted that this data is three years older, and thus not well-comparable.

[191] EEA, 2010, Environmental trends and perspectives in the Western Balkans: future production and consumption patterns

Table 3-61: Share of territory as designated area in 2007 by country-level. Source: EEA.

	% of territory as designated area
BA	0.8
RS	7.0
Enlargement Countries	4.5

Air Quality (Aggregate)

The 'Air Quality' indicator benchmarks the exposure of the urban population to poor levels of NO_2 and PM10. As the table below show, the Danube macro-region performs again as a top performer for 2014. This is explained by a high average performance on NO_2 concentrations, while the average level of PM10 concentrations corresponds to the EU-median. Data for non-Member States was not available.

Table 3-62: Benchmarking results of the indicator 'Environment – Air Quality' and its components 'Fraction of Urban population exposed to concentrations of air pollutants above selected air quality standards of the Air Quality Directive' for 2014, Source: Task1

	Air Quality	NO_2 Exposure	PM10 Exposure
AT	125	100	150
BG	101	150	52
CZ	93	100	87
DE	93	85	100
HU	118	150	86
RO	124	150	99
SI	150	150	150
SK	89	100	77
Danube	112	123	100

Soil Quality (Aggregate)

The table below shows the benchmarking performance on the Gross Nutrient Balance in soils with respect to Phosphorus and Nitrogen each. A low benchmarking score reflects a high nutrient surplus, which in turn implies adverse impacts on the environment. The Danube macro-region performs on average below the EU-median, which points to an undesirable soil quality, due to high nutrient surpluses.

Table 3-63: Benchmarking results of the indicator 'Environment – Agricultural Impact', which measures the Gross Nutrient Balance in 2010, Source: Task 1

	Phosphorus (kg per ha UAA)	Nitrogen (kg per ha UAA)
AT	91	88
BG	56	66
CZ	74	107
DE	91	113
HU	74	89
RO	79	50
SI	101	100
SK	85	100
Danube	81	89

Strand of Need: Individual

Biodiversity and Landscapes (Individual)

The benchmarking shows that most of the Member States in the macro-region have a share of Natura 2000 areas above the EU-median. Slovenia has even the highest share of the EU with 36%. The data indicates only two bottom performers, Austria and Czech Republic. These two bottom performers exhibit however still a higher share of designated areas than Serbia with 7.0% and especially Bosnia-Herzegovina with 0.8%. Overall, there are thus four countries (out of eleven countries with data) that count as bottom performers.

Air Quality (Individual)

With respect to air quality, the Czech Republic, Germany, and Slovakia, are bottom performers in 2014 (out of the eight countries with data). Their low performance is explained by the low performances on the exposure to PM10 concentrations, where Bulgaria and Slovakia score particularly low. Bulgaria scores even nearly as low as the EU's worst performing Member State.

Soil Quality (Individual)

The performances on the Phosphorus Gross Nutrient Balance shows that out of eight countries measured, only Slovenia is a slight top performer. Bulgaria performs again nearly as low as the EU's lowest performing country. The picture is less severe on the Nitrogen balance: Half of the measured countries count as bottom performers (Austria, Bulgaria, Hungary, and Romania), with Romania as the EU's lowest performer.

Final Assessment

To which extent does the objective reflect an actual need for intervention?

The review shows that the Danube scores on the aggregate strand on average above the EU-median on Biodiversity and Landscapes. Factoring in the low shares of the Western Balkan countries, this average performance may be below the EU-median; this is only indicative due to a poor comparability of the data. On the individual strand, there are four countries with a low performance. The Air Quality indicator shows on average a top performance, but three countries with a bottom performance. On Soil Quality, the Danube scores on average below the EU-median, due to a high share of bottom performing countries. Overall, an actual need for intervention has been identified for all three indicators.

Is the objective strategically relevant in a macro-regional context?

The macro-regional relevance varies on the four subject matters. The biodiversity and landscape component is highly relevant, as national borders do not define the boundaries of habitats, but rather naturally shaped boundaries. Also, the aspect of education is relevant, given that the exemplified actions in the action plan clearly aim to establish a recognition of the Danube macro-region

as a whole and seek to raise institutional capacity, which is among others often achieved through best-practice sharing. The aspects of air- and soil- quality appear however not macro-regionally relevant, but at most relevant on the cross-border scale.

A.4 Pillar C: Building Prosperity in the Danube Region

A.4.1 Knowledge Society (PA7)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-64: Summary of Assessment – EUSDR – 7. Developing the Knowledge Society through research, education and information technologies

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	7. To develop the Knowledge Society through research, education and information technologies		**X**		
Theme of intervention		**Indicator**			
Knowledge Society		'Regional Innovation Scoreboard', 'EU Digitisation Index'			
Judgement on the strands of need					
Aggregate	On the scale of the Regional Innovation Scoreboard (RIS), the majority of countries in the Danube Region are moderate or modest innovators. Moreover, on the EU Digitisation Index (DESI), the average benchmark score of the countries in the Danube Region lay at approximately 80 in 2014, clearly indicating a need for intervention on the aggregate level.				
Individual	Whereas DE, AT and a part of SI are leading or strong innovators, the remaining EU countries are categorised as moderate or – in the case of BG, most of RO and a part of HU – as modest innovators. Also in terms of digitisation, AT and DE's benchmark scores lie above the EU median, while all of the Region's other countries score below. Accordingly, also at the individual level a need for intervention is observable.				
Internal	*Not Applicable*				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	The aggregate region as well as the majority of the individual countries point towards a clear need for intervention in order to increase the potential for research and innovation and thus to develop the knowledge society. Moreover, the objectives of this Priority Area are macro-regionally relevant in that collaboration on creating the capacity for higher levels of innovation and digitisation – e.g. concerning ICT and research infrastructure – is expected to contribute to a more balanced territorial development of the Danube Region, whose EU Member States exhibit very dissimilar levels of performance – not even including data from the Accession and Neighbourhood Countries. Hence, Priority Area 7 is categorised as a 'green light' area, i.e. it corresponds to a need and is macro-regionally relevant.				

Theme of Intervention & Relevant Sources

Priority Area 7 aims to develop the knowledge society in the Danube Region, with a particular focus on increasing digitisation, including e-connectivity and e-services, as well as improving the conditions and capacity of the Region for research and innovation. As the development of the knowledge society mainly depends on internal factors, such as tertiary education attractiveness or ICT infrastructure, and the Danube Region experience challenges in this area, this Priority Area concerns a weakness to be addressed by the Region's Strategy.

Two indicators are applied to review this Action: The 'Regional Innovation Scoreboard' (measured by categories: leader, strong, moderate, and modest) and the 'EU Digitisation Index'. It should be noted, however, that for both indicators, data are available only for the EU countries and are thus lacking for Switzerland and Liechtenstein, and the available data are from the year 2008 and 2014, respectively.

Strand of Need: Aggregate

On the scale of the Regional Innovation Scoreboard (RIS), the majority of countries in the Danube Region are moderate or modest innovators, which indicates a need for intervention on the aggregate level. Moreover, on the EU Digitisation Index (DESI), the average benchmark score of the countries in the Danube Region lay at approximately 80 in 2014. This substantiates the argument for intervening in favour of developing better conditions for the knowledge society, for instance concerning research and ICT infrastructure.

Strand of Need: Individual

A high level of variation becomes apparent when considering the individual countries of the Region. Whereas all of the German parts of the region are innovation leaders, and the Austrian parts and one of the Slovenian parts are strong innovators, the remaining countries are moderate innovators with Bulgaria, most of Romania and a part of Hungary lagging behind as modest innovators.

Similarly, the digitisation levels differ significantly across the Danube Region. Austria and Germany's benchmark score lies above the EU median on the DESI, while all of the Region's other countries score below, with Bulgaria and Romania as clear 'bottom performer'-scores of approximately 61 and 50, respectively. Accordingly, the performance at the individual level corroborates the conclusion for the aggregate region, namely that a need for intervention is present.

Strand of Need: Internal

Not Applicable

Final Assessment

To which extent does the objective reflect an actual need for intervention?

Some of the Region's countries, Austria, Germany and partly Slovenia, are top performers on the Innovation Scoreboard and the Digitisation Index. The aggregate region as well as the majority of the individual countries, however, point towards a clear need for intervention – e.g. in terms of improving ICT infrastructure and skills – so as to increase the potential for research and innovation and thus develop the knowledge society.

Is the objective strategically relevant in a macro-regional context?

Collaboration on major ICT infrastructure investments as well for remote cross-border regions may significantly increase their economic feasibility. Moreover, it is likely that much can be gained by increasing cooperation between education and research institutions and stimulating the development of such cooperation in the private sector as well. For instance the exchange of knowledge and cooperation on research – including, in particular, those topics addressing regional challenges of the Danube Region – or the sharing of best practices (e.g.

in the area of public e-services) could be expected to significantly contribute to a more balanced territorial development of the region.

In addition, it must be emphasised that no data for the Accession and Neighbourhood Countries are included in the present analysis. As the level of innovation and digitisation can be expected to lie below the EU median as well, macro-regional cooperation in the area of the knowledge society would help bringing these countries up to par as well. In conclusion, the analysis of this Priority Area indicates a clear macro-regional relevance.

A.4.2 Competitiveness of Enterprises (PA8)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-65: Summary of Assessment – EUSDR – 8. Supporting the competitiveness of enterprises, including cluster development

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	8. To support the competitiveness of enterprises, including cluster development			**X**	
Theme of intervention		**Indicator**			
Competitiveness		'Regional Competitiveness Index (RCI)'			
Judgement on the strands of need					
Aggregate	Overall, the Danube region's different parts (only including data for the EU Member States) have an average benchmark score of approximately 94 and thus, the Region lies below the EU median. Based on the available data, it thus appears safe to conclude that a need for intervention is indicated at the aggregate level.				
Individual	The scores of the concerned regions vary between 50 and almost 140. The average score of the AT and DE regions lie clearly above, the SI and CZ regions' averages lie just above and just below, and the remaining five EU countries lie clearly below the EU median – with BG and RO lagging significantly behind. Hence, the majority of the macro-region's countries are 'bottom performers', which emphasises a need for intervention.				
Internal	*Not Applicable*				
Traffic Light	Corresponds to a need + Macro-regionally relevant				
Justification	The Region's overall benchmark score as well as the scores of the majority of the Region's individual countries' on the RCI lie below the EU median, clearly indicating a need for action as regards the competitiveness and the framework conditions of the Region's businesses. The determination of macro-regional relevance of this Priority Area is not entirely clear-cut: On the one hand, competitiveness is an EU-wide issue and not only relevant to the Danube region. On the other hand, tailoring the interventions to the Danube region's peculiarities may be an efficient approach to promoting a more balanced territorial development in terms of competitiveness, and would thus contribute to ensuring economic cohesion. Further, cluster development and innovation are also aspects of this Priority Area, which is potentially well-served on a transnational scale due to the wider geographic scope and thus pool of innovative resources.				

Theme of Intervention & Relevant Sources

This Priority Area aims to improve the conditions for business development, innovation and cooperation so to increase the competitiveness of the Danube

region. Certain parts of the region are performing quite well economically, including e.g. in terms of innovation, while the opposite is the case for other parts of the Region. This rather large divide could be viewed as a threat, but also as an opportunity to develop the region's competitiveness. On the one hand, the lesser performing parts of the region are likely to profit from increased possibilities for cooperation – for instance in connection with R&D or the development of clusters – and on the other hand, the better performing parts of the region are provided with a possibility to expand their business to new, nearby markets within the region.

Whether a need for intervention exists in the area of competitiveness can be assessed by benchmarking the Danube region's countries on the 'Regional Competitiveness Index (RCI)', which, amongst others, contains measures of the quality of institutions (including e.g. the ease of doing business) and infrastructure, technological readiness (including e.g. firm-level technology absorption and availability of the latest technologies), business sophistication and innovative capability.

Strand of Need: Aggregate

Overall, the Danube region's different parts have an average benchmark score of approximately 94 and thus, the Region lies below the EU median. This score, only includes the EU Member States[192] and accordingly does not contain data from Bosnia and Herzegovina, Moldova, Montenegro, Serbia, and Ukraine – which would likely provide for a somewhat lower score. Based on the available data, however, it appears safe to conclude that a certain need for intervention is indicated at the aggregate level.

Strand of Need: Individual

Looking into the individual countries' RCI benchmark scores, the importance of the need for intervention becomes more apparent. The scores of the concerned regions vary between 50 and almost 140. The average score of the Austrian and German regions lie clearly above the EU median, while the Slovenian and Czech regions' averages lie just above and just below the median, respectively. The remaining five EU countries, however, have average benchmarks clearly below 100 points, with Bulgaria and Romania lagging significantly behind. Hence, the majority of the macro-region's countries are 'bottom performers', which supports the previous paragraph's conclusion – especially when taking into account also the large variation between the different countries.

Strand of Need: Internal

Not Applicable

Final Assessment

To which extent does the objective reflect an actual need for intervention?

The Danube region's overall benchmark score as well as the majority of the scores of the region's individual countries on the Regional Competitiveness Index lie below the EU median, clearly indicating a need for action as regards the competitiveness and the framework conditions for the Region's businesses.

[192] The available data are from the year 2013.

Insofar as the actions proposed by the EUSDR's Action Plan – for instance the development of a Danube region programme for clusters and SMEs, or the prioritisation of an effective implementation of measures provided for by the 'Small Business Act for Europe' – will enhance the framework conditions for (especially the lower performing parts of) the region, this priority area addresses a clear need in the Danube region.

Is the objective strategically relevant in a macro-regional context?

The outcome of an analysis of the macro-regional relevance of this Priority Area is not entirely clear-cut. Competitiveness is an EU-wide issue and not only relevant to the Danube region. However, the EUSDR is composed of some of Europe's least competitive regions (both EU Member States and particularly (potential) candidate countries). This requires a more specific tailoring of the interventions to the Danube region's specific needs, to ensure that the regions manage to improve their relative competitiveness towards Europe's leading regions. The Priority Area's focus on cluster development and innovation, are further particularly relevant topics/themes in a transnational context, as the transnational scale brings several benefits in the form of, e.g. access to wider knowledge, a larger network, and a raised profile (CNBC, 2013).[193]

A.4.3 Investing in People and Skills (PA9)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

[193] CNCB, 2013, Handbook on transnational clustering, http://www.central2013.eu/fileadmin/user_upload/Downloads/outputlib/CNCB_HANDBOOK_internationalised_clusters.pdf.

Table 3-66: Summary of Assessment – EUSDR – 9. Investing in people and skills

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	9. To invest in people and skills		X		
Theme of intervention		**Indicator**			
Human Capital		'Social Progress Index', 'Tertiary Education Attainment' ('Composite Labour Integration')			
Judgement on the strands of need					
Aggregate	The average performance of the EUSDR's regions on the Social Progress Index as well as on the benchmark for tertiary education lie below the EU median, at a score of 93. This indicates a need for intervention at the aggregate level.				
Individual	The indicators show large variances at the individual level – both between countries and different parts of the individual countries. AT, DE and SI lie above the EU median in terms of social progress, and the DE regions on average score above 100 on the tertiary education index – substantiating the need for intervention in the area of human capital.				
Internal	Clear internal differences can be observed in the Danube with respect to attainment of tertiary education in the population, which is benchmarked significantly above the EU median in most of the countries' capital regions, whereas the remaining parts of the countries' scores lie significantly below the median. Although this divide can be expected to a certain extent, it appears uncommonly large in the Danube region and thus may underline the need for a more balanced development of the region internally.				
Traffic Light	Corresponds to a need + Macro-regionally relevant				
Justification	On the aggregate as well as on the individual and internal level, the Danube region performs (often significantly) below the EU median on both the Social Progress Index and the benchmark for Tertiary Education Attainment. These outcomes clearly point towards a need for intervention in favour of accelerating and balancing social progress in across the Danube region and developing the region's human capital. The Danube region exhibits large discrepancies in terms of the different parts' performance in the social and educational area, which hampers cohesion at the macro-regional level. Where similar social challenges are experienced and a shift of human capital from one to the other part of the region causes common problems, a macro-regional approach is clearly called for.				

Theme of Intervention & Relevant Sources

Priority Area 9 concerns an array of issues related to the region's human capital. It aims to increase education levels, skills available in the labour market and thus potential for innovation. It also has as its objective to promote a more balanced dispersal of human capital throughout the region instead of the current disparity between mobility from the East towards the West of the region, thus halting the 'brain drain' from the new Member States and the Accession and Neighbourhood countries. In addition, the Priority Area intends to address social issues such as health and living conditions, fighting poverty and improving equal opportunities and social inclusion – particularly concerning marginalised communities.

In order to evaluate the first two of these areas, the benchmark indicator for 'Tertiary Education Attainment' is employed, taking into account also the Composite Index for 'Labour Integration', while the 'Social Progress Index' provides a good basis for considering the latter issues in the social area. The 'Social Progress Index' includes measures of conditions related to health, living and housing conditions, young people not in employment, education or training, gender gap, tolerance for minorities, tertiary education attainment, and lifelong

learning. It also includes e.g. environmental quality and a few other components not directly connected with the Priority Area's objective, so it is not a perfect measure, but it does include the majority of the issues addressed by the Priority Area.

The following caveats with respect to data availability should be noted and taken into account in connection with the conclusions of the following sections:

The benchmark of the 'Social Progress Index (SPI)' is available only for EU Member States (except Slovenia) and only for the year 2016. The benchmark data for 'Tertiary Education Attainment' are from the year 2010, but only include data from EU Member States. Finally, the composite benchmark for 'Labour Integration' is available only for the year 2015 contains data for the EU Member States and the Neighbourhood Countries, but not for the Accession Countries.

Strand of Need: Aggregate

The average performance of the EUSDR's regions on the 'Social Progress Index' as well as in terms of tertiary education lie below the EU median, at a score of approximately 93 and thus indicate a need for intervention at the aggregate level. Conversely, the composite benchmark score for labour integration, which shows mobile students, worker's remittances and migration within the macro-region, is comparatively high, at approximately 139, in the Danube region. This score, however, does not inform about the direction of the flows of human capital, but it illustrates a high level of labour integration in the region, confirming the importance of this issue. Nevertheless, this must be viewed in connection with the performance of the different parts of the region, addressed in the following paragraph.

Strand of Need: Individual

Considering the region's individual countries, the 'Social Progress Index' shows large discrepancies between the countries. The Austrian, German, Slovenian and some Czech regions score well above the EU median, while all other countries lie clearly below 100, with Bulgaria and Romania's average scores of 50 and 55 qualifying as distinct 'bottom performers' in terms of social progress.

A similar pattern materialises when looking at the benchmark index for 'tertiary education attainment in the population' individually, except that only the German regions perform above the EU median on average – with a benchmark of around 152 point. All other regions, including Austria, are 'bottom performers' on average, with the exception of the respective countries' capital regions, which – in all cases apart from Croatia[194] – score above the EU median.

In conclusion, the situation in the Danube region undoubtedly suggests a need for intervention in the social and educational area, and accordingly, investments in 'people and skills' in order to develop the region's human capital are warranted.

Strand of Need: Internal

Not Addressed

[194] Information on Slovenia is only available at the country (i.e. not NUTS-2) level.

Other aspects

The individual scores for labour integration are available only at the country level, meaning that e.g. the low score of Germany, 59, does not necessarily mean that the German parts of the Danube region are less integrated with the region than e.g. Slovakia, with a score of 189, but only that Germany *as a whole* is. Accordingly, it can be concluded from the available data that there are large differences between the individual countries with respect to the level of labour integration, and that Austria, Croatia, the Czech Republic, Hungary, Montenegro, Serbia, Slovakia and Slovenia as entire countries are more integrated with the Danube region in this context than with other parts of Europe.

Final Assessment

To which extent does the objective reflect an actual need for intervention?

On the aggregate level, the Danube region's average scores on both the 'Social Progress Index' and the benchmark for 'Tertiary Education Attainment' lie below the EU median. At the individual country level as well as regarding the countries' different regions, large variations manifest – underlining two main outcomes: The majority of the concerned regions are clear 'bottom performers' on both benchmarks, and there are particularly large differences between the Danube countries' capital regions and the remaining regions (except for Germany). These outcomes clearly point towards a need for intervention in favour of accelerating and balancing social progress in across the Danube region and developing the region's human capital.

Is the objective strategically relevant in a macro-regional context?

There are large differences between the performance of the different parts of the Danube region in terms of social and educational issues, which need to be addressed if a balanced development of the regions is to be achieved. Instead of showing a high level of cohesion within the region, the high level of labour integration of the Danube region combined with the large variation between regions, emphasises these large social and educational discrepancies. The movements of students and labour market actors that are illustrated in the composite 'Labour Integration Index' seem to mainly move in *one* general direction – thus shifting human capital, rather than binding the region together through movements from and to all parts of the region.

Thus, this challenge concerns the entire macro-region and is most likely to benefit from macro-regional cooperation in terms of actions to e.g. increase labour market and educational collaboration and exchanges across the region and tackle common social challenges together.

A.5 Pillar D: Strengthening the Danube Region

A.5.1 Institutional Capacity and Cooperation (PA10)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-67: Summary of Assessment – EUSDR – 10. Stepping up institutional capacity and cooperation

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	10. To step up institutional capacity and cooperation		**X**		
Theme of intervention		**Indicator**			
Institutional Capacity & Cooperation		'Public Institutions', 'Transnational Cooperation', *external literature:* Moraliyska, M. (2015), Regional Economic Cooperation in the Western Balkans and Its Impact on Bulgaria			
Judgement on the strands of need					
Aggregate	The indicator on the degree of cooperation as measured by the average number of organisations participating in transnational projects shows that the Danube macro-region has on average a low performance with a score of 93. The analysis by Moraliyska (2015) further concludes that the regional economic cooperation between the Western Balkan countries (thus including AL, FYROM, and XK as well) is well below its potential, and therefore unsatisfactory. The quality of public institutions is in the Danube macro-region on average lower than the EU-median with a score of 72. This result demonstrates that the macro-region has on average a lower institutional capacity than the EU median.				
Individual	The transnational cooperation of the individual countries shows that BG, CZ, DE, RO (out of eight countries) had a degree of cooperation significantly below the EU-median, with a scoring in the range of 72 to 84 points on the benchmark. HU is another bottom performer, but only to a small extent (98 points). The institutional capacity also exhibits many countries with a low score. All but two countries of the macro-region (excluding MD) score below the EU-median. Only the macro-region's two old Member States (AT and DE) have a high score. ME performs with 90 points the highest of the bottom performers, and UA with 41 points the lowest.				
Internal	The indicator 'Transnational Cooperation' shows that capital regions (or regional-capitals for DE) score higher than other regions. A separation of the capital region as a country's only top performing region is though only seen in the cases of BG and DE.				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	The analysis shows that there is a need for intervention on both cooperation and institutional capacity on the aggregate and individual strand. The internal strand highlights differences in cooperation between capital and non-capital regions, yet these are not strongly pronounced. The macro-region's history in terms of post-communistic transition, national separatism and war shows that many countries of the macro-region share common challenges that provide inputs for potential political divides. The promotion of improved territorial cohesion can therein provide an opportunity to overcome political divides through the common achievement of positive outcomes. Institutional capacity can be a key factor in making territorial cohesion succeed as a strong capacity improves the likelihood to achieve successful results, which in turn can help overcome past divides. At last, the exchange of best-practices is a common form to improve institutional capacity. On the macro-regional level, this can be done under commonly shared cultural and historic conditions.				

Theme of Intervention & Relevant Sources

The Priority Area seeks to improve institutional capacity in the macro-region and promote territorial cohesion to bridge political divides as a result of the macro-region's history (e.g. post-communist transition and national separatism). The theme of intervention is therefore Institutional Capacity & Cooperation.

The indicator 'Public Institutions' provides information on the institutional capacity.[195] In terms of cooperation, the indicator 'Transnational Cooperation' gives information on the degree of cooperation in transnational projects under the INTERREG IV-B between 2007 and 2011, as measured by number of participating organisations. This indicator does however not include the (potential) candidate countries of this macro-region. External literature by Moraliyska, M. (2015) compensates for this lack of data. [196]

Strand of Need: Aggregate

The indicator in the table below shows the degree of cooperation as measured by the average number of organisations participating in transnational projects. The Danube macro-region has on average a low performance with a score of 93. The analysis by Moraliyska (2015) further concludes that the regional economic cooperation between the Western Balkan countries (thus including Albania, Former Yugoslav Republic of Macedonia, and Kosovo as well) is well below its potential, and therefore unsatisfactory.

Table 3-68: Transnational Cooperation; Aggregated number of project partners participating IV-B projects between 2007 and 2011, Source: Task 1

	Benchmark
AT	100
BG	72
CZ	84
DE	76
HU	98
RO	77
SI	135
SK	103
Danube	93

The quality of public institutions is in the Danube macro-region on average lower than the EU-median with a score of 72. This result demonstrates that the macro-region has on average a lower institutional capacity than the EU median.

[195] The indicator on public institutions is a composite of the World Economic Forum's (WEF) Global Competitiveness Index for 2016 and consists in turn of indicators on 'property rights', 'ethics and corruption', 'undue influence', 'public-sector performance', and '(public) security'. To a limited degree, this indicator reveals the institutional capacity, mostly reflected through the 'public-sector sector performance' composite.

[196] Moraliyska, M. (2015), Regional Economic Cooperation in the Western Balkans and Its Impact on Bulgaria, http://www.unwe.bg/uploads/Alternatives/9_Moraliyska.pdf

Table 3-69: Quality of Public Institutions in 2010-2011, Source: Task 1

	Benchmark
AT	124
BA	50
BG	50
CZ	63
DE	126
HR	69
HU	67
ME	90
RO	65
RS	49
SI	85
SK	59
UA	41
Danube	72

Strand of Need: Individual

The transnational cooperation of the individual countries shows that four countries (out of eight) had a degree of cooperation significantly below the EU-median, with a scoring in the range of 72 to 84 points on the benchmark. Hungary is another bottom performer, but only to a small extent (98 points). BG, CZ, DE, RO

The institutional capacity also exhibits many countries with a low score. All but two countries of the macro-region (excluding Moldova) score below the EU-median. Only the macro-region's two old Member States (Austria and Germany) have a high score. Montenegro performs with 90 points the highest of the bottom performers, and Ukraine with 41 points the lowest.

Strand of Need: Internal

The indicator 'Transnational Cooperation' shows that capital regions (or regional-capitals for Germany) score higher than other regions. A separation of the capital region as a country's only top performing region is though only seen in the cases of Bulgaria and Germany.

Final Assessment

To which extent does the objective reflect an actual need for intervention?

The analysis shows that there is a need for intervention on both cooperation and institutional capacity on the aggregate and individual strand. The internal strand highlights differences in cooperation between capital and non-capital regions, yet these are not strongly pronounced.

Is the objective strategically relevant in a macro-regional context?

The macro-region's history in terms of post-communistic transition, national separatism and war shows that many countries of the macro-region share common challenges that provide inputs for potential political divides. The promotion of improved territorial cohesion can therein provide an opportunity to overcome political divides through the common achievement of positive

outcomes. Institutional capacity can be a key factor in making territorial cohesion succeed as a strong capacity improves the likelihood to achieve successful results, which in turn can help overcome past divides. At last, the exchange of best-practices is a common form to improve institutional capacity. On the macro-regional level, this can be done under commonly shared cultural and historic conditions.

A.5.2 Security and Crime (PA11)

Assessment Summary

The table below provides the summary of this objective's assessment. Further detailed information can be found below the table.

Table 3-70: Summary of Assessment – EUSDR – 11. Working together to promote security and tackle organised and serious crime

Strategy	Priority Area	Strength	Weakness	Opportunity	Threat
EUSDR	11. To work together to promote security and tackle organised and serious crime		X		
Theme of intervention		**Indicator**			
Crime		'Number of drug seizures', 'Human Trafficking', *External Literature:* Kegö, W. & Leijonmarck, E. (2011), Countering Cross-Border Crime in the Baltic Sea region			
Judgement on the strands of need					
Aggregate	The data on the number of drug seizures per million inhabitants shows that the countries of the Danube macro-region perform on average below the EU-median, with a score of 81. Note that this data is for 2014, and may draw a more positive picture than in 2010 (assuming that action on drug seizures increased in comparison to the rest of the EU in those four years). A total of 11,757 human trafficking victims have a citizenship or country of origin in the Danube macro-region in 2010-2012, which corresponds to about 76% of all identified victims in Europe. The Danube macro-region accounts thus for a significant majority of the victims.				
Individual	Most of the nine countries measured show a low activity level on drug seizures. Two thirds of those countries are bottom performers. BG and RO score barely above 50 points. Other bottom performers are HU, the CZ, and SK. The most human trafficking victims by far, originate from RO (6,101 victims) and BG (3,043), and account for 78% of this macro-region's originating victims. In both countries, about half of the victims are identified outside their domestic country. Of the 30 countries of origin, seven countries of this macro-region are in top half, which shows that a significant share of the countries exhibit a need for action (the remaining five are HU, SK, DE, CZ, RS). Of all seven countries, a clear majority of victims is identified in other countries than their origin. The human trafficking aspect has in conclusion a clear cross-border dimension.				
Traffic Light	Corresponds to need + Macro-regionally relevant				
Justification	The judgement criteria are fulfilled for the indicators on drug seizures and human trafficking on both the aggregate and individual strand. In both cases, there is a clear majority of countries that performs on the bottom end. Especially on human trafficking, the fact that 76% of the identified victims in all of Europe originate from a country of this macro-region, underlines a need for intervention. A research report by Kegö & Leijonmarck (2011) shows that the cross-border and especially transnational dimension of criminal activities has become ever more relevant as a result of globalization (i.e. facilitation of communication and transport). Further, the human trafficking data provides clear evidence that the cross-border, transnational and interregional dimension is a highly relevant aspect. The priority area is conclusively macro-regionally relevant.				

Theme of Intervention & Relevant Sources

As a result of the increasing economic integration and cross-border trade in the macro-region, the priority area seeks to address the growth potential of organised and serious crime in the macro-region. Provided that new cooperation structures on police enforcement may take time to implement, the strategy aims to facilitate such, to better respond to the cross-border dimension of crime.

For the review, two indicators are used. The indicator 'Number of Drug Seizures' benchmarks the number of drug seizures per million inhabitants in 2014. This indicator therefore does not provide information on the severity of drug trafficking as such, but rather the activity of relevant authorities. The second indicator, 'Human Trafficking' describes the number of identified human trafficking victims between 2010 and 2012 in the EU, EFTA, and (potential) candidate countries.
The assessment of macro-regional relevance is further supported by a research report by Kegö and Leijonmarck (2011). [197]

Strand of Need: Aggregate

The data on the number of drug seizures per million inhabitants shows in the table below that the countries of the Danube macro-region perform on average below the EU-median, with a score of 81. Note that this data is for 2014, and may draw a more positive picture than in 2010 (assuming that action on drug seizures increased in comparison to the rest of the EU in those four years).

Table 3-71: Number of drug seizures per million inhabitants in 2014, Source: Task 1

	Benchmark
AT	104
BG	50
CZ	76
DE	102
HR	106
HU	69
RO	51
SI	94
SK	77
Danube	81

A total of 11,757 human trafficking victims have a citizenship or country of origin in the Danube macro-region in 2010-2012, which corresponds to about 76% of all identified victims in Europe. The Danube macro-region accounts thus for a significant majority of the victims.

Strand of Need: Individual

Most of the nine countries measured show a low activity level on drug seizures. Two thirds of those countries are bottom performers. Bulgaria and Romania score barely above 50 points. Other bottom performers are Hungary, the Czech Republic, and Slovakia.

[197] Kegö, W. & Leijonmarck, E. (2011), Countering Cross-Border Crime in the Baltic Sea region, http://isdp.eu/content/uploads/images/stories/isdp-main-pdf/2011_kego-leijonmarck_countering-cross-border-crime.pdf

The most human trafficking victims by far, originate from Romania (6,101 victims) and Bulgaria (3,043), and account for 78% of this macro-region's originating victims. In both countries, about half of the victims are identified outside their domestic country. Of the 30 countries of origin, seven countries of this macro-region are in top half (the remaining five are Hungary, Slovakia, Germany, Czech Republic, Serbia), which shows that a significant share of the countries exhibit a need for action. Of all seven countries, a clear majority of victims is identified in other countries than their origin. The human trafficking aspect has in conclusion a clear cross-border dimension.

Strand of Need: Internal

Not Applicable

Final Assessment

To which extent does the objective reflect an actual need for intervention?

The judgement criteria are fulfilled for the indicators on drug seizures and human trafficking on both the aggregate and individual strand. In both cases, there is a clear majority of countries that performs on the bottom end. Especially on human trafficking, the fact that 76% of the identified victims in all of Europe originate from a country of this macro-region, underlines a need for intervention.

Is the objective strategically relevant in a macro-regional context?

A research report by Kegö & Leijonmarck (2011) shows that the cross-border and especially transnational dimension of criminal activities has become ever more relevant as a result of globalization (i.e. facilitation of communication and transport). Further, the human trafficking data provides clear evidence that the cross-border, transnational and interregional dimension is a highly relevant aspect. The priority area is conclusively macro-regionally relevant.

Appendix B List of literature

The literature used for and referenced by this study is presented below. It is organised into five sections:

1. Academic publications
2. European Policy Framework
3. Macro-regional Strategies
4. Documents related to each macro-regional strategy
5. Specific Data/Indicator & Internet Sources

1. Academic Publications & Reports

There is an emerging literature on the concept, application, and effectiveness of macro-regional strategies. The sources of these publications are broadly grouped into economic geography research focused on the economic and technical changes that are driving a rescaling process in Europe, and studies that focus on the policy instruments themselves.

Banister D. 2002. Transport Planning, Spon Press, New York.

Bengtsson, R. 2009. "An EU Strategy for the Baltic Sea Region: Good Intentions Meet Complex Challenges," Swedish Institute for European Policy Studies

Bevir, M. 2013. Governance: A very short introduction. Oxford, UK: Oxford University Press.

Bhagwati, J. N. 1987. Quid pro quo foreign investment and welfare: A political-economy-theoretic model. Journal of Development Economics, Volume 27, Issues 1-2, Pages, 127-138.

Bialasiewicz, L.; Giaccaria, P.; Jones, A.; Minca, C. (2013) Re-scaling 'EU'rope: EU macro-regional fantasies in the Mediterranean. European Urban and Regional Studies, Vol. 20, No. 1, 59–76

BMVI Bundesministerium für Verkehr und Digitale Infrastruktur (ed.). 2017. Wirkungen der Transnationalen Zusammenarbeit in Interreg B. Untersuchung ausgewählter Interreg IVB-Projekte nach erzielten Wirkungen und zentralen Gelingensfaktoren. Berlin: BMVI.

Böhme K. 2013. "Added value of macro-regional strategies: a governance perspective," Spatial Foresight Brief

Braun and Kovács. 2011. "Macro-regional strategies: Experiment for the Renewal of Economic Policy of the European Union," in Public Finance Quarterly.

Brenner, N. (2004) New State Spaces. Urban Governance and the Rescaling of Statehood, Oxford: Oxford University Press.

Christiansen, T. 1997. "A European Meso-region? European Union Perspectives on the Baltic Sea Region" in P. Joenniemi (ed.) Neo-nationalism or Regionalism? The Re-structuring of Political Space around the Baltic Rim

Cugusi, B. and Stocchiero, A. 2012. "Macro-regions, "la Nouvelle Vogue" of Transnational Cooperation, the Geopolitical Case of the Mediterranean Basin," in EUBORDERREGIONS Working Paper Series

Dühr, S., Colomb, C., and Nadin, V. 2010. European spatial planning and territorial cooperation. London, New York: Routledge.

Dühr, S. 2011. "Baltic Sea, Danube and Macro-regional Strategies – A Model for Transnational Cooperation in the EU?" Notre Europe Study & Research

Dühr, S. 2013. The added-value of macro-regional strategies from the perspective of spatial planning. Report for the European Commission, DG Regio.

Dühr, S. 2014a. Are there arguments for a Central European macro-regional strategy? Report for the INTERREG IVB Central Europe 'City-Regions' project.

Dühr, S. 2014b. Scales of cooperation, spaces of communication. Inaugural lecture delivered at the acceptance of the post of Professor of European Spatial Planning Systems at the Nijmegen School of Management, Radboud University Nijmegen, on Friday 11 April 2014. Nijmegen: Radboud University Nijmegen.

EIPA. 2013. Improving Public Organisations through Self-Assessment – The Common Assessment Framework (CAF).

Folfas, P. 2011. FDI between EU Member States: Gravity model and taxes. Working Paper, http://www.etsg.org/ETSG2011/Papers/Folfas.pdf

Foster, N., G. Hunya, O. Pyndyuk and S. Richter. 2011. Revival of the Visegrad Countries' Mutual Trade after their EU Accession: a Search for Explanation. Wiiw Research Report No. 372.

Gänzle S and Kern K. 2011. "Macro-regional Strategies: A New Mode of Differentiated integration in the European Union," Paper for CEPSA Annual Conference.

Gänzle S and Kern K (eds). 2016. A 'Macro-regional' Europe in the Making: Theoretical Approaches and Empirical Evidence.

Gänzle, S. 2014. "Macro-regional Strategies and the EU. Building Inter- and Trans-government Relations," in Public Administration Times.

Geerlings, H. and Stead, D. 2003. The Integration of Land Use Planning, Transport and Environment in European Policy and Research. Transport Policy, Vol. 10, No. 3, pp. 187- 196.

Geurs T. K. and B. van Wee. 2006. Ex-post Evaluation of Thirty Years of Compact Urban Development in the Netherlands, Urban Studies, vol. 43, Issue 1, 2006.

Grozea-Helmenstein, D., Helmenstein, C., Kleissner, A., Moser, B. 2008. *Makroökonomische und sektorale Effekte der UEFA EURO 2008 in Östereich.* Wirtschaftspolitische Blätter, 2008 (1). pp. 7-20.

Grozea-Helmenstein D., C. Helmenstein, T. Slavova. 2009. *Who is the best? Insights from the benchmarking of border regions.* Trames. Journal of the Humanities and Social Sciences, 13(63/58), (3). pp. 285-302.

Grozea-Helmenstein, D. and H. Berrer. 2013. Benchmarking EU-Border-Regions: Regional Economic Performance Index, EUBORDERREGIONS Project Report.

Grozea-Helmenstein, D., G. Grohall, C. Helmenstein. 2017 (forthcoming). Convergence and Structural Change in Romanian Regions, in Larisa Schippel, Julia Richter, Daniel Barbu (2017): Rumäniens "Rückkehr" nach Europa. Versuch einer Bilanz. - Wien: new academic press.

Gustavson, Patrick & Koko, Ari. 2004. Regional Integration, FDI and Regional Development. European Investment Bank. In: *Papers of EiB-Conferences*, Vol. 9, No. 1, pp. 122, Luxembourg.

Hanson, G. H., R. Mataloni Jr. M. J. Slaughter. 2003. Vertical production networks in multinational firms. NBER Working Paper Series. Working Paper 9723, http://www.nber.org/papers/w9723

Healey, P. 2007. Urban Complexity and Spatial Strategies: towards a relational planning for our times. London, New York: Routledge.

Hornok, C. 2010. Trade-Enhancing EU Enlargement and the Resurgence of East-East Trade. Focus on European Economic Integration, Q3/2010. OeNB, Vienna.

Hufty, M. 2011. Investigating Policy Processes: The Governance Analytical Framework (GAF). In: Wiesmann, U., Hurni, H., et al. eds. Research for Sustainable Development: Foundations, Experiences, and Perspectives. Bern: Geographica Bernensia: 403–424.

Huggins, R., and lzushi, H. 2008. UK Competitiveness Index 2008. Cardiff, UK: Centre for International Competitiveness.

Hull A. 2011. Transport Matters: Integrated Approaches to Planning City-regions, Routledge.

IPCC. 2007. Climate Change 2007, Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the IPCC (978 0521 88010-7 Hardback; 978 0521 70597-4 Paperback).

IMF. 2013. Sixth Edition of the IMF's Balance of Payments and International Investment Position Manual (*BPM6*).

Karou, S. and Hull, A. 2012. Accessibility Measures and Instruments, in Angela Hull, Cecília Silva and Luca Bertolini (Eds.) Accessibility Instruments for Planning Practice. COST Office, pp. 1-19.

Keating, M. 2009. Rescaling Europe. Perspectives on European Politics and Society, Vol. 10, No. 1, 34–50.

Krugman, Paul R. 1979. Increasing returns, monopolistic competition, and international trade. Lohmann, G.; Panosso Netto, A. (2017): Tourism Theory: concepts, models and systems. ISBN 9781780647159; DOI 10.1079/9781780647159.0193

Metzger and Shmitt. 2012. "When Soft Spaces Harden: The EU Strategy for the Baltic Sea Region," in Environment and Planning.

Nijkamp P. and M. Abreu. 2003. Regional development theory. PN218MA-EOLSS. URL: ftp://dlib.info/opt/ReDIF/RePEc/vua/wpaper/pdf/20090029.pdf

OECD. 2008. Public Management Reviews: Ireland 2008. Towards an Integrated Public Service.

Offe, C. 2009. Governance: An "Empty Signifier"? Constellations, 16: 550–562. doi:10.1111/j.1467-8675.2009.00570.x

Raub, J. 1999. Environmental Health Criteria 213, CARBON MONOXIDE (SECOND EDITION). Geneva, Switzerland, World Health Organization.

Robert, J., Stumm, T., de Vet, J.M., Reincke, C.J., Hollanders, M. and Figueiredo, M.A. 2001. Spatial Impacts of Community Policies and Costs of Non-Coordination. Study carried out at the request of the European Commission DG REGIO, Brussels: CEC.

Schmidt-Thome P. and S. Greiving (2013) editors. European Climate Vulnerabilities and Adaptation: A Spatial Planning Perspective, published by John Wiley and Sons Ltd. UK. ISBN 978-0-470-97741-5

Sielker, F. 2016. "What could the future role of Macro-regional strategies in the EU be? –Four scenarios", Working Paper No. 1/2016, Friedrich-Alexander Universität Erlangen-Nürnberg.

Stead, D. 2014. "European Integration and Spatial Rescaling in the Baltic region: Soft spaces, soft planning and soft security," in European Planning Studies 22(4).

Stead, D. 2014. "Rescaling environmental governance – the influence of European transnational cooperation initiatives," Environmental Policy and Governance 24(5).

Stead, D., and Meijers, E. 2009. Spatial Planning and Policy Integration: Concepts, Facilitators and Inhibitors. Planning Theory & Practice, Vol. 10, No. 3, pp. 317-332.

Taylor, J. Edward. 1986. Differential migration, networks, information and risk. In: Stark, Oded (Ed.), Migration, Human Capital and Development. JAI Press, Greenwich, CT

Tuckman, B. W. 1965. "Developmental sequence in small groups", Psychological Bulletin. 63 (6): 384–399. PMID 14314073.

Williams, C., 2014, The Informal Economy and Poverty: Evidence and Policy Review, https://www.researchgate.net/profile/Colin_Williams/publication/260453006_The_Informal_Economy_and_Poverty_Evidence_and_Policy_Review/links/02e7e5319cc6d0fcf6000000/The-Informal-Economy-and-Poverty-Evidence-and-Policy-Review.pdf

2. European Policy Framework

The European policy framework is driven by developments in overall economic, environmental, and social perspectives, and reinforced by the evaluation of territorial cooperation approaches.

2.A General

European Commission. 20120. EU 2020 - A New European Strategy For Jobs And Growth. COM(2010) 2020, Brussels.

2.B Cohesion Policy

Regulation (EU) No 1301/2013 of the European Parliament and of the Council of 17 December 2013 on the European Regional Development Fund and on specific provisions concerning the Investment for growth and jobs goal and repealing Regulation (EC) No 1080/2006

Common Provisions Regulation (EU) No 1303/2013. Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006. (See page 93 for Common Strategic Framework)

Ex post evaluation of Cohesion Policy programmes 2007-2013 financed by the ERDF and the Cohesion Fund - WP1: Synthesis Report

European Structural and Investment Funds 2014-2020: Official Texts And Commentaries

Regulation (EU) No 1299/2013 of the European Parliament and of the Council of 17 December 2013 on specific provisions for the support from the European Regional Development Fund to the European territorial cooperation goal

Council Regulation (EU) No 1300/2013 of 17 December 2013 on the Cohesion Fund and repealing Council Regulation (EC) No 1084/2006

Climate change, impacts and vulnerability in Europe. http://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016

Climate-ADAPT. Website/platform: http://climate-adapt.eea.europa.eu/countries-regions/transnational-regions

Climate change indicators. Website/platform: http://www.eea.europa.eu/data-and-maps/indicators/#c5=climate-change-adaptation&b_start=0

Climate-ADAPT vulnerability maps. Website: http://climate-adapt.eea.europa.eu/knowledge/tools/urban-adaptation/introduction

DG Employment. 2014. Monitoring and Evaluation of European Cohesion Policy-European Social Fund, Guidance Document on Indicators of Public Administration Capacity Building

European Commission. 2004. A new partnership for cohesion. Convergence, competitiveness, cooperation. Third report on economic and social cohesion. Luxembourg: Office for Official Publications of the European Communities.

European Commission. 2010. Fifth Report on economic, social and territorial cohesion - Investing in Europe's future. Luxembourg: Office for Official Publications of the European Communities.

Polycentric crossborder system and transport. Towns as components of an Organised Transport Systems can be found at p. 23-25 of this draft chapter for the Urban agenda of an Euroregion

Pucher, J., Frangenheim, A., Sanopoulos, A., Schausberger, W. 2015. The Future of Cohesion Policy, Report I, Committee of the Regions, Brussels.

S3 platforms contain data about different countries and regions and use "tools" to analyze them. Website/platforms: http://s3platform.jrc.ec.europa.eu/; http://s3platform.jrc.ec.europa.eu/s3-cooperation; http://s3platform.jrc.ec.europa.eu/s3-tools

TEN-T: On the (TEN-T) Corridors dimension and their interrelation with the macro-regional strategies, refer to the EU Coordinators Work Plans, notably for:

Danube Strategy - > Rhine Danube Corridor

Alpine Strategy -> Scan-Med corridor (it concerns 3 other corridors too but less involved – interesting to see the governance elements referred to – and partially set-up by the Coordinator, Pat Cox)

Baltic Sea Strategy -> North Sea- Baltic corridor. Website: http://ec.europa.eu/transport/node/4876

3. Macro-regional Strategies

The concept, application, and spread of macro-regional strategies as policy instruments has been supported by the institutions that comprise the European Union, along with the supporting programmes that support broader territorial cooperation.

3.A Policy Publications

3.A.1 European Commission

Charron, N., Dijkstra, L., Lapuente, V. 2012. Regional Governance Matters: A Study on Regional Variation in Quality of Government within the EU. European Commission, DG REGIO.

European Commission. 2014. A Discussion Paper for the revision of the Action Plan of the EU Strategy for the Baltic Sea Region (EUSBSR), not public

European Commission. 2013a. Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions concerning the added value of macro-regional strategies. COM(2013) 468 final.

European Commission. 2013b. Commission Staff Working Document *accompanying the document* 'Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions concerning the added value of macro-regional strategies'. SWD(2013) 233 final.

European Commission. 2014. 'Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions concerning the governance of macro-regional strategies'. COM (2014) 284 final.

European Commission. 2015. Enabling synergies between European Structural application: and Investment Funds, Horizon 2020 and other research, innovation and competitiveness-related Union programmes.

European Commission (2016), report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of EU macro-regional strategies. COM(2016) 805 final.

Samecki, P. (2009) Macro-regional Strategies in the European Union, Discussion Paper presented by Commissioner Pawel Samecki in Stockholm, 18 September, Brussels: DG Regio

3.A.2 European Parliament

European Parliament. 2010. Working Document on the European Union Strategy for the Baltic Sea Region and the role of macro-regions in the future cohesion policy, Committee on Regional development, 06.01.2010

European Parliament. 2012. The evolution of EU macro-regional strategies: present practice and future prospects, especially in the Mediterranean, Motion for Resolution,

European Parliament. 2012b: Resolution from the European Parliament on optimising the role of territorial development in cohesion policy

Common Provisions Regulation (EU) 1303/2013, see page 93 for Common Strategic Framework

European Parliament. 2015. The New Role of Macro-regions in European Territorial Cooperation. Study Commissioned by the Directorate General for Internal Policies, Brussels

European Parliament. 2015. The New Role of Macro-regions in European Territorial Cooperation. Study Commissioned by the Directorate General for Internal Policies, Brussels. (incl. ANNEX)

3.A.3 Committee of the Regions

Committee of the Regions (2013): Opinion concerning the added value of macroregional strategies, CoR 28,29

3.A.4 Supporting programmes

ESPON programme

INTERACT programme

Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of EU macro-regional strategies {SWD(2016) 443 final} 16.12.2016 COM(2016) 805 final

The added value of macro-regional strategies seen from a project and programme perspective. Final report Spatial Foresight 2016

Added value of macro-regional strategies: Collecting practice examples. Final report Spatial Foresight 2016

Interact has been working on the short documents clarifying MRS. MRS Glossary here and Overview on MRS priorities.

Website/platform: http://www.interact-eu.net/library?field_fields_of_expertise_tid=33#470

Website/platform: http://www.interact-eu.net/library?field_fields_of_expertise_tid=33#819

Interact Joint Annual Work Plan for 2017 (at activity level). Website: http://www.interact-eu.net/#news

ESPON provides European-wide comparable. Website/Platform: https://www.espon.eu/main/

4. Documents related to specific strategies

Each macro-region has followed a similar process of identifying functional problems that require flexibility and coordination. The policy process has followed a similar trajectory. However, these needs and strategies are unique to each region, and are contained in the strategies and Action Plans for each region.

4.A Baltic Sea

A beginner's guide to the Baltic Sea Region – Swedish Tillvaxtverket

Action Plan - Working document accompanying the Communication concerning the European Union Strategy for the Baltic Sea Region - SEC(2009) 712 - September 2015 update

Analysis currently under finalisation by University of Geneve on networking patterns in the PAs/HAs related to environment in the EUSBSR. Report to come (Experts working on it are Dr Erik Gløersen (erik.gloersen@unige.ch) and Clément Corbineau (Clement.Corbineau@unige.ch). Please contact colleagues directly for further information.

Annex to the Action Plan: Ongoing and completed flagships of the EUSBSR

COM (2012) 128 final - 23.03.2012 concerning the European Union Strategy for the Baltic Sea Region (2012)

Embedding EUSBSR with ESIF – Case study of Lithuania

ESPON TeMo (BSR Territorial Monitoring System). Website/Platform: http://bsr.espon.eu/opencms/opencms

EU Strategy for the Baltic Sea Region (EUSBSR – 2009)

European Commission (2009a), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – European Union Strategy for the Baltic Sea Region, Brussels, 10.06.2009, COM(2009) 248 final.

European Commission. 2011. Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of the EU Strategy for the Baltic Sea Region (EUSBSR). COM(2011) 381 final (June 2011), Brussels.

European Parliament (2010): Report on the European Union Strategy for the Baltic Sea Region and the role of macro-regions in the future cohesion policy.

EUSBSR Policy Area Education Progress Report, draft 24.07.2017

EUSBSR Policy Area on Maritime Safety and Security "PA Safe" Implementation Report 2016; Danish Maritime Authority and Finnish Transport Safety Agency

List of EUSDR Targets. Validated in the meeting of national Coordinators and Priority Area Coordinators held in Bratislava on 23 May 2016.

Newsletter (2009 through to 2014)

Ongoing work on climate action, have a look at the EUSBSR dedicated website. Website: http://www.cbss.org/strategies/horizontal-action-climate/

PA Education – work programme – final. May, 1, 2016 – April, 30, 2018 (2016.04.13).

PA INNO Monitoring Guide – Roles, Targets, Process. Nordic Council of Ministers, 2016.

PA Innovation – draft progress document, August 2018

PA Nutri Progress Report 17.05.16 (Contribution by PA Nutri coordinators to the Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of macro-regional strategies. 17.05.2016

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