Smart Specialisation in the Eastern Partnership - potential for knowledge-based economic cooperation

A Joint Research Center project, supported by:

SIRIS Academic

Maastricht University's Economic and Social Research Institute on Innovation and Technology (MERIT)

02/12/2020

1. Context and objectives
2. Data sources
3. Methodology
4. Expected results

Context

- A step forward in the "**Smart specialisation and organisational development in enlargement and H2020 associated countries**" process .

- A **Joint Research Center project** supporting **“the design and implementation of Smart Specialisation Strategies in EU Enlargement and Neighbourhood”**

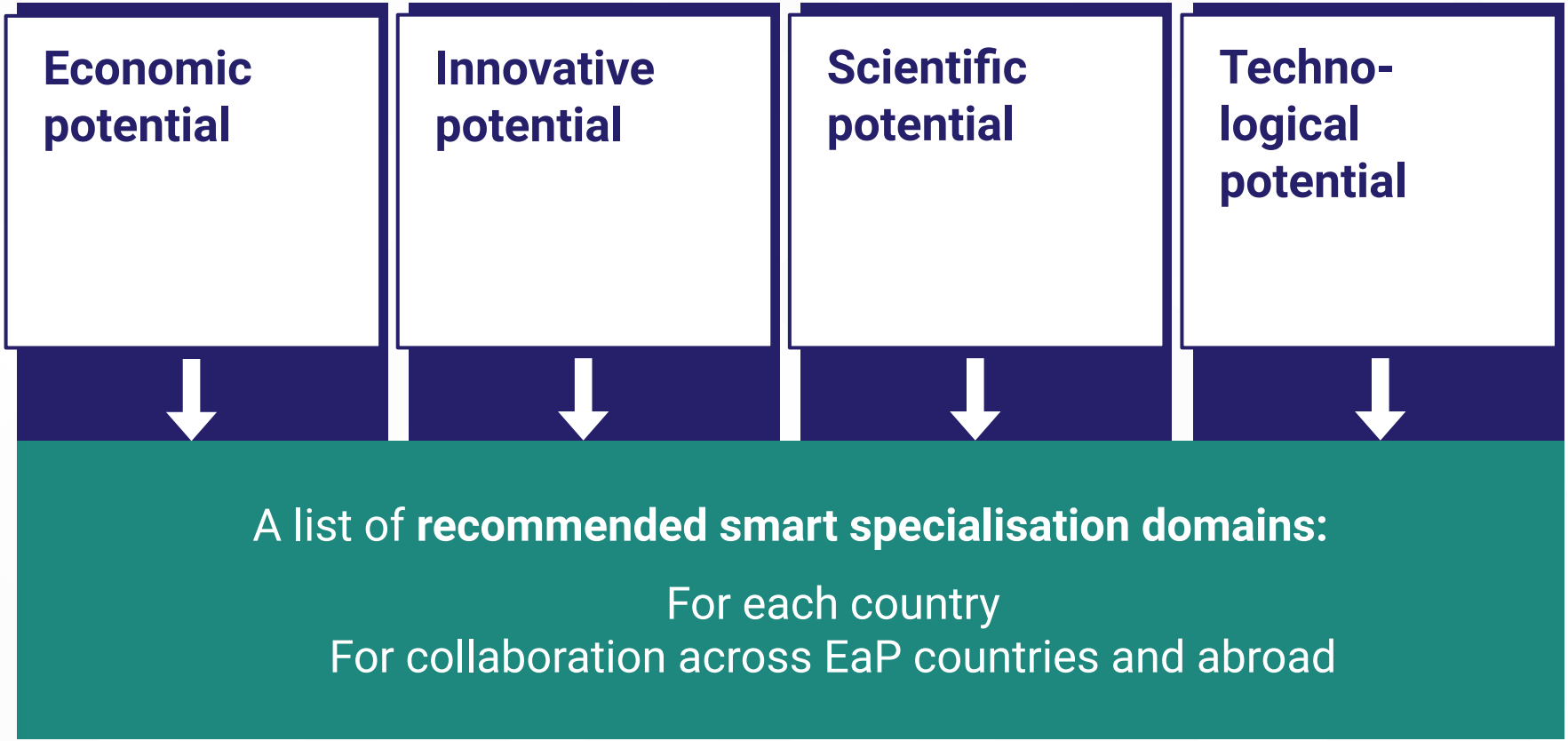
- **Providing analytical evidence for national policy-makers and stakeholders**

Objectives of the project

The project aims to answer the following research questions:

- What are **subsectorial specialisations of EaP countries** in terms of **economic critical mass, emerging sectors and innovative activities** of companies?
- Which of these **specialisations are common in the EaP region** and which specific to each country?
- What are the **areas of specialisation and excellence of EaP STI system that can be mobilised** to support knowledge-based economic transformation?
- What is the structure of the i**nternational and national STI collaboration networks** and who are the main stakeholders?
- Are there **possible synergies/concordance between the economic, innovative, scientific and technological specialisations** of the countries?

Three analytical pillars



Data sources

Scope	Source	No. of records (2012 - 2019)
Scientific publications in internationally indexed journals	Scopus (Elsevier)	**138,199**
European Commission funded **research and innovation projects**	CORDIS - Community Research and Development Information Service	**324**
International patents	Worldwide bibliographic data (DOCDB) - European Patent Office	**2,958** *(2011 - 2018)*
International Trademarks	Global Brand Dabase - World International Patent Office (WIPO)	**320,399** *(2011 - 2018)*
Industrial designs	Global Designs Dabase - World International Patent Office (WIPO)	**28,391** *(2011 - 2018)*

Data sources

Scope	Source	No. of records (2012 - 2019)
Innovative start-ups and companies	Crunchbase	**5,447**
Cluster organisations	European Cluster Collaboration Network (ECCN) and the assessment provided in the report "Review of the state of development of clusters in EaP countries"	**>50**
Clinical trials	ClinicalTrials.gov - National Institutes of Health (NIH)	**1,742**

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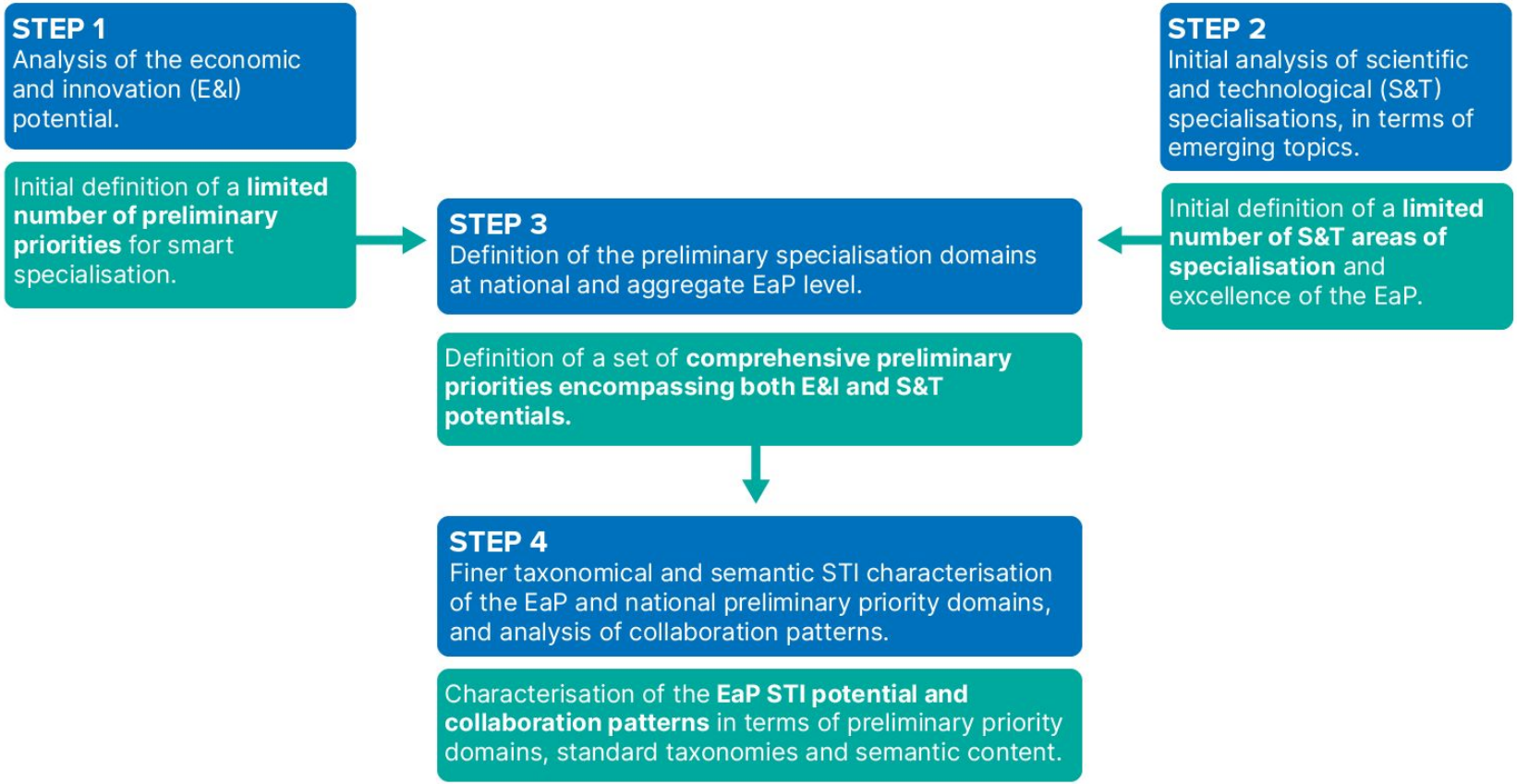
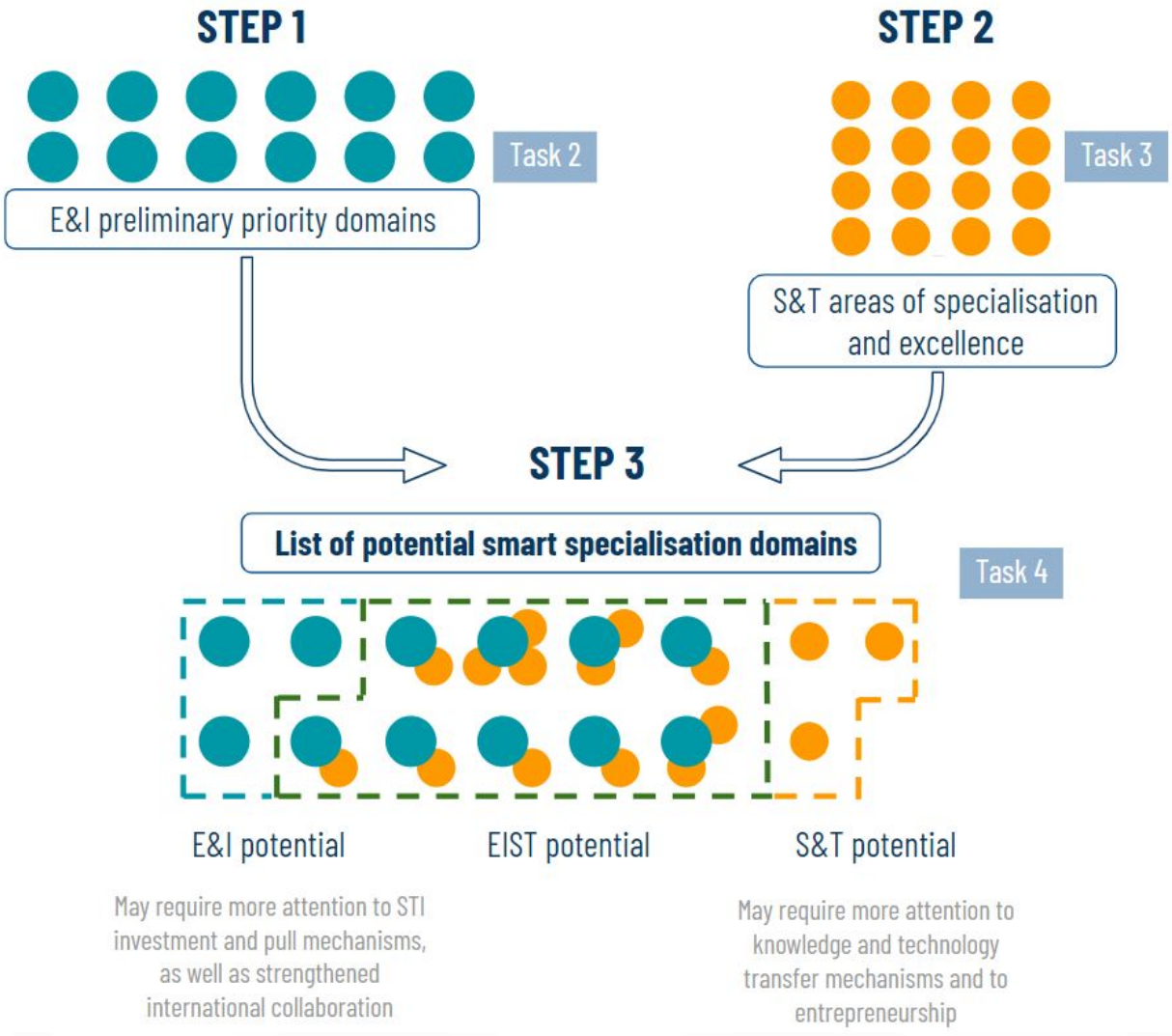
Proposed geographical units of analysis:

- **Each EaP country:** Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine
- **EaP as a whole**
- **Benchmark geography:** EU-27

Methodology



Summary schema of the methodological steps leading to the selection, definition and characterisation of the EaP and national preliminary priorities for smart specialisation


STEP 1
Task 2
E&I preliminary priority domains
STEP 2
Task 3
S&T areas of specialisation and excellence
STEP 3
List of potential smart specialisation domains
Task 4
E&I potential
EIST potential
S&T potential
May require more attention to STI investment and pull mechanisms, as well as strengthened international collaboration
May require more attention to knowledge and technology transfer mechanisms and to entrepreneurship

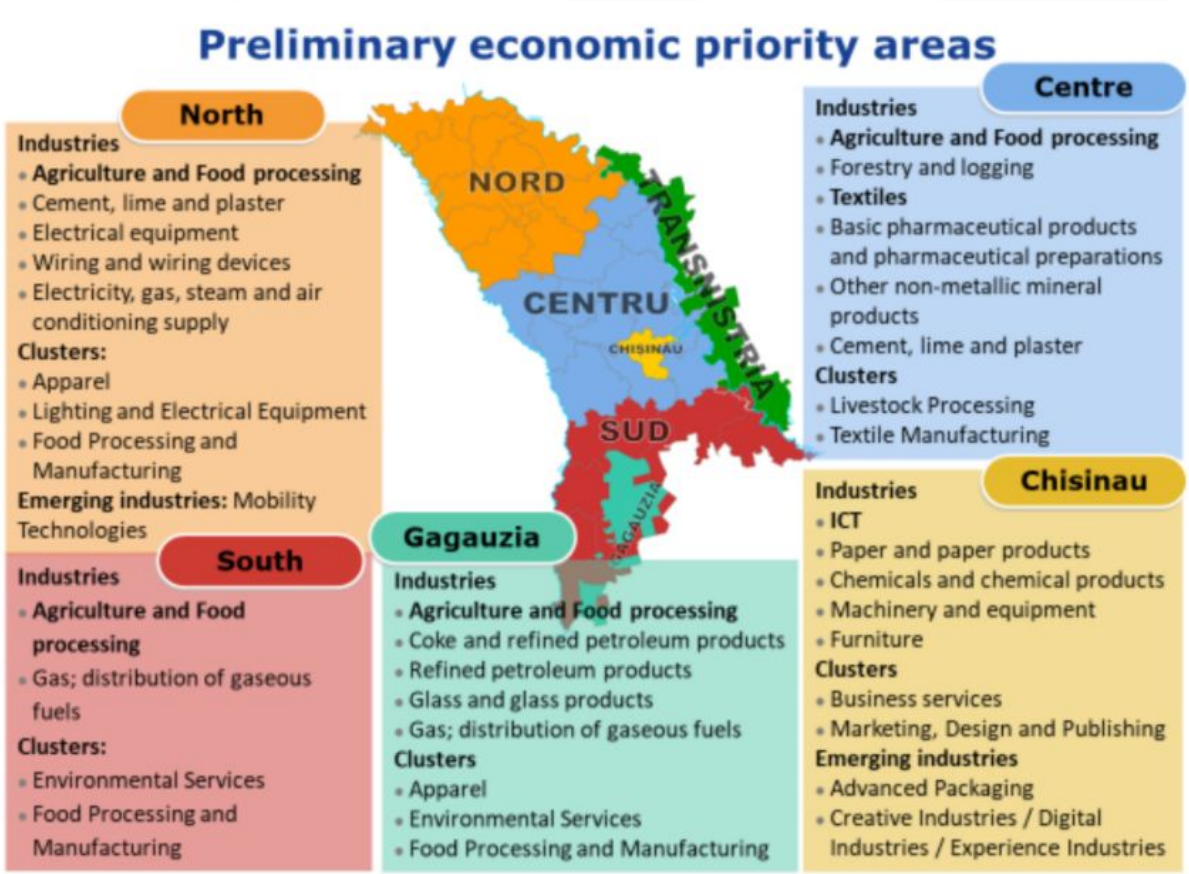
Expected results: Analytics

Table 11 Potential priority domains for smart specialization

	Chisinau	North	Centre	South	Gagauzia
Agriculture and Food processing		X	X	X	X
A01 Crop and animal production, hunting and related service		X	X	X	X
A011 Growing of non-perennial crops		X		X	X
A014 Animal production			X		
A02 Forestry and logging			X		
A021 Silviculture and other forestry activities			X		
C10 Manufacture of food products		X			
C101 Processing and preserving of meat and production of meat			X		
C104 Manufacture of vegetable and animal oils and fats		X			
C105 Manufacture of dairy products		X			
C106 Manufacture of grain mill products, starches and starch				X	X
C107 Manufacture of bakery and farinaceous products				X	
C108 Manufacture of other food products		X			
C11 Manufacture of beverages				X	X
Textile, Apparel, Footwear and Leather goods (TAFL)			X		
C13 Manufacture of textiles			X		
C139 Manufacture of other textiles			X		
C143 Manufacture of knitted and crocheted apparel			X		
C152 Manufacture of footwear			X		
ICT	X				
J61 Telecommunications	X				
J612 Wireless communications	X				
J62 Computer programming, consultancy and related activities	X				
C26 Manufacture of computer, electronic and optical products	X				
C265 Manufacture of instruments and appliances for measuring, testing and navigation; watches and clocks	X				

"Mapping of economic, innovative and scientific potential in the Republic of Moldova". Final report prepared under the Expert group "Mapping for smart specialisation in E&IA countries",for the European Commission's DG Joint Research Centre, Directorate Growth and Innovation. Report prepared by Hugo Hollanders, Maastricht University

Expected results: Analytics



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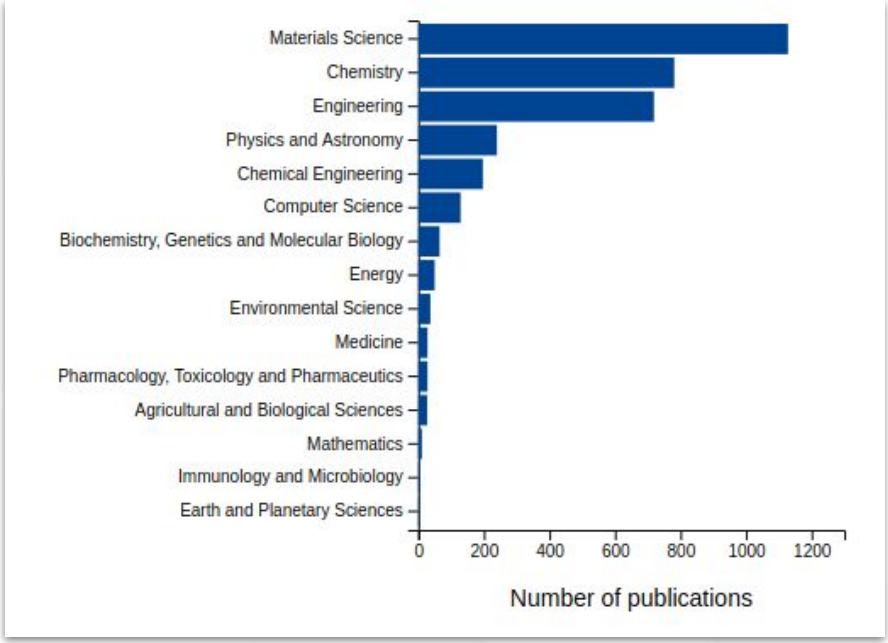
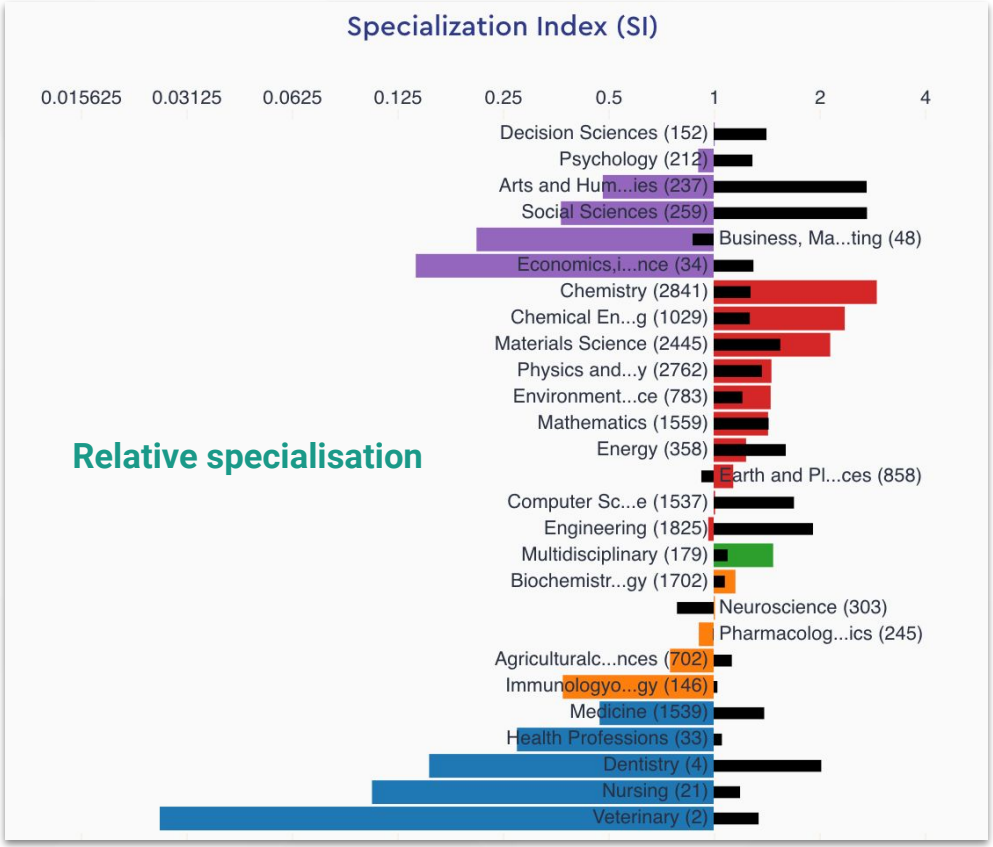


Distribution of scientific capacities across disciplines

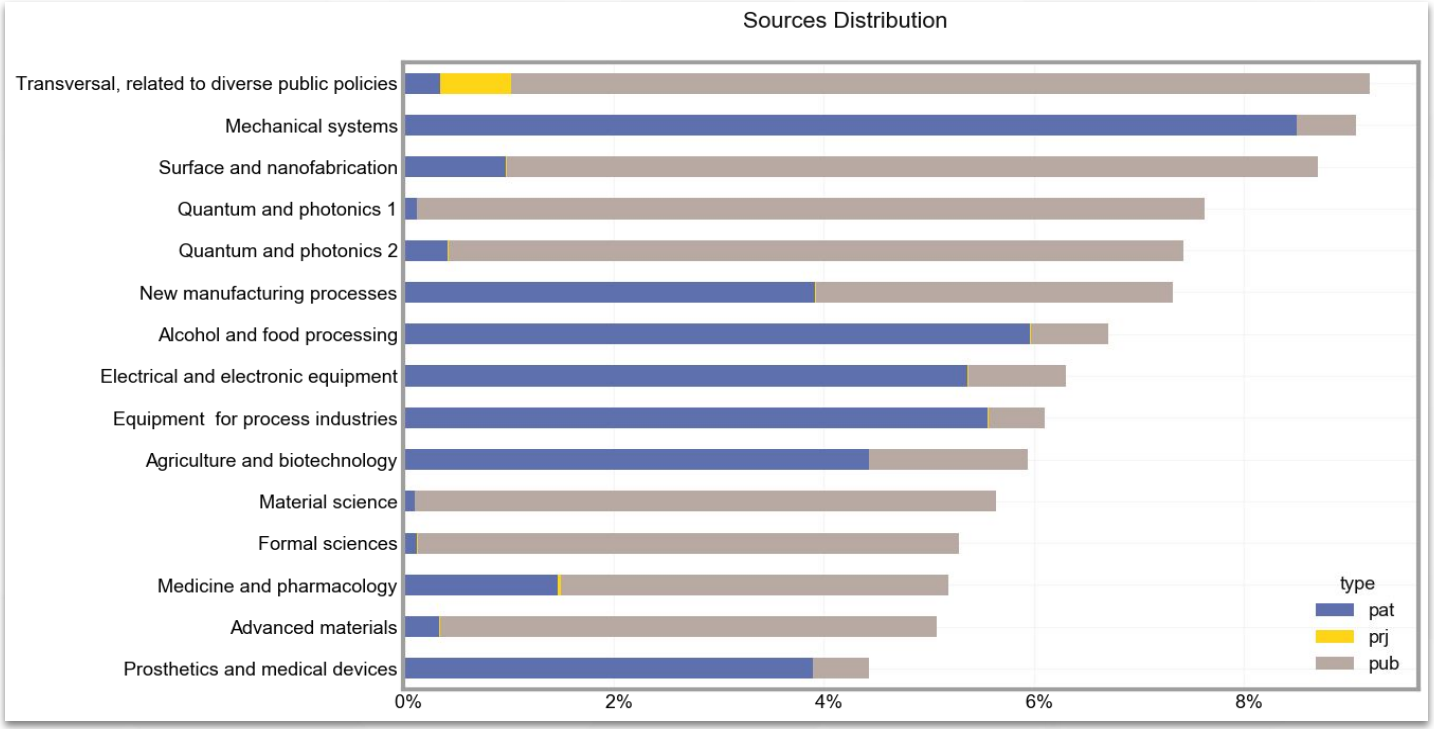
Science and technology panorama of the Western Balkans. Joint Research of the European Commission, elaboration by SIRIS Academic and Innovatia Systems, 2019.



Relative specialisation

PSL Scientific dashboard. Paris Sciences et Lettres, elaboration by SIRIS Academic, 2018.

Expected results: Analytics

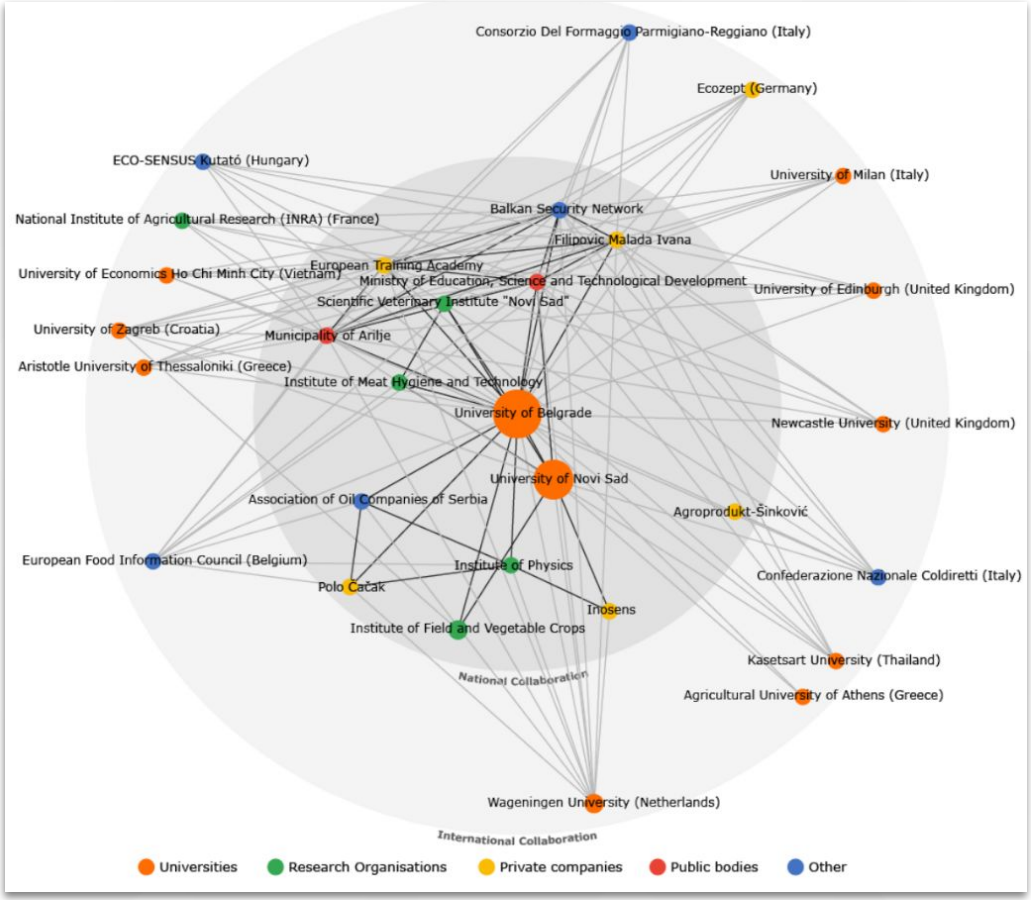


Main Science, Technology and Innovation topics

Distribution of sources through the emergent topics. The different colours represent the distribution by source (patents, projects, publications) of the keywords, through the texts most related to each topic.

"Characterisation of preliminary priority areas for smart specialisation in Moldova". Joint Research Center of the European Commission, elaboration by SIRIS Academic, 2018.

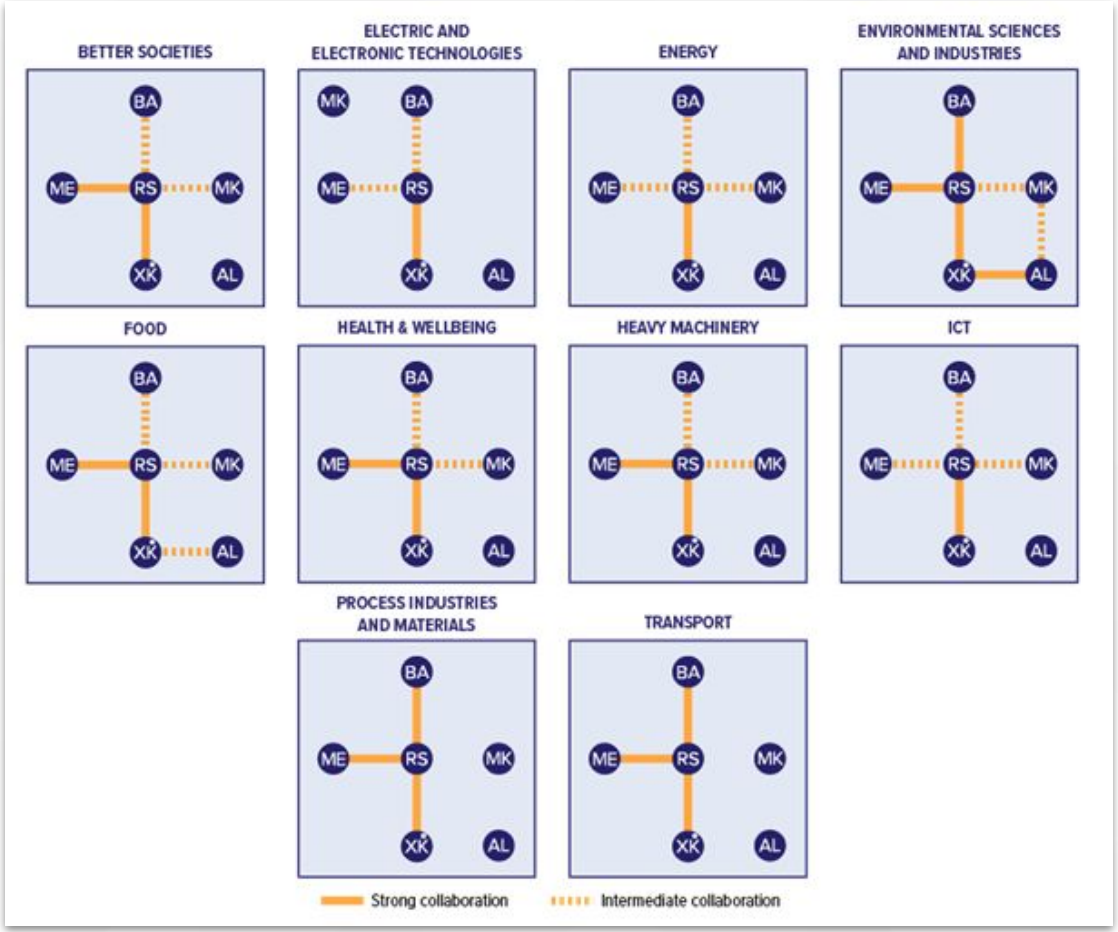
Expected results: Analytics



National and international institutional collaboration networks

Pilot methodology for mapping Sustainable Development Goals (SDGs) in the context of Smart Specialisation Strategies.
Joint Research Center of the European Commission, elaboration by SIRIS Academic, 2020.

Expected results: Analytics



Regional collaboration in preliminary priority areas

Strong and and intermediate linkages

Science and technology panorama of the Western Balkans. Joint Research of the European Commission, elaboration by SIRIS Academic and Innovatia Systems, 2019.

Expected results: Analytics

International collaboration in preliminary priority areas: Neighbourhood

	Publications									EC & Eureka R&I Projects								
	Croatia	Slovenia	Greece	Turkey	Bulgaria	Hungary	Ukraine	Romania	Moldova	Greece	Romania	Slovenia	Hungary	Bulgaria	Croatia	Turkey	Ukraine	Moldova
Better societies	320	258	111	92	87	83	16	31	4	147	97	83	76	81	80	71	20	17
Electric and electronic technologies	52	24	10	5	22	6	2	6	0	1	1	1	0	0	0	0	0	0
Energy	120	49	38	29	34	25	4	3	0	18	10	20	8	12	17	6	4	0
Environmental sciences and industries	469	374	265	138	210	180	69	29	5	5	8	8	3	4	5	2	1	0
Food	374	205	163	122	101	84	6	7	3	11	7	6	6	3	1	4	4	0
Health & wellbeing	1309	766	715	487	398	409	123	65	33	31	18	14	11	12	8	12	2	1
Heavy machinery	128	104	14	25	12	17	7	18	0	8	3	7	2	2	4	5	1	0
ICT	417	460	171	258	90	169	61	57	5	146	80	77	68	58	49	53	10	13
Process industries and materials	324	575	158	87	178	136	31	30	6	1	3	6	1	0	0	0	0	0
Transport	17	23	13	4	5	9	3	1	0	3	1	1	1	0	1	0	0	0

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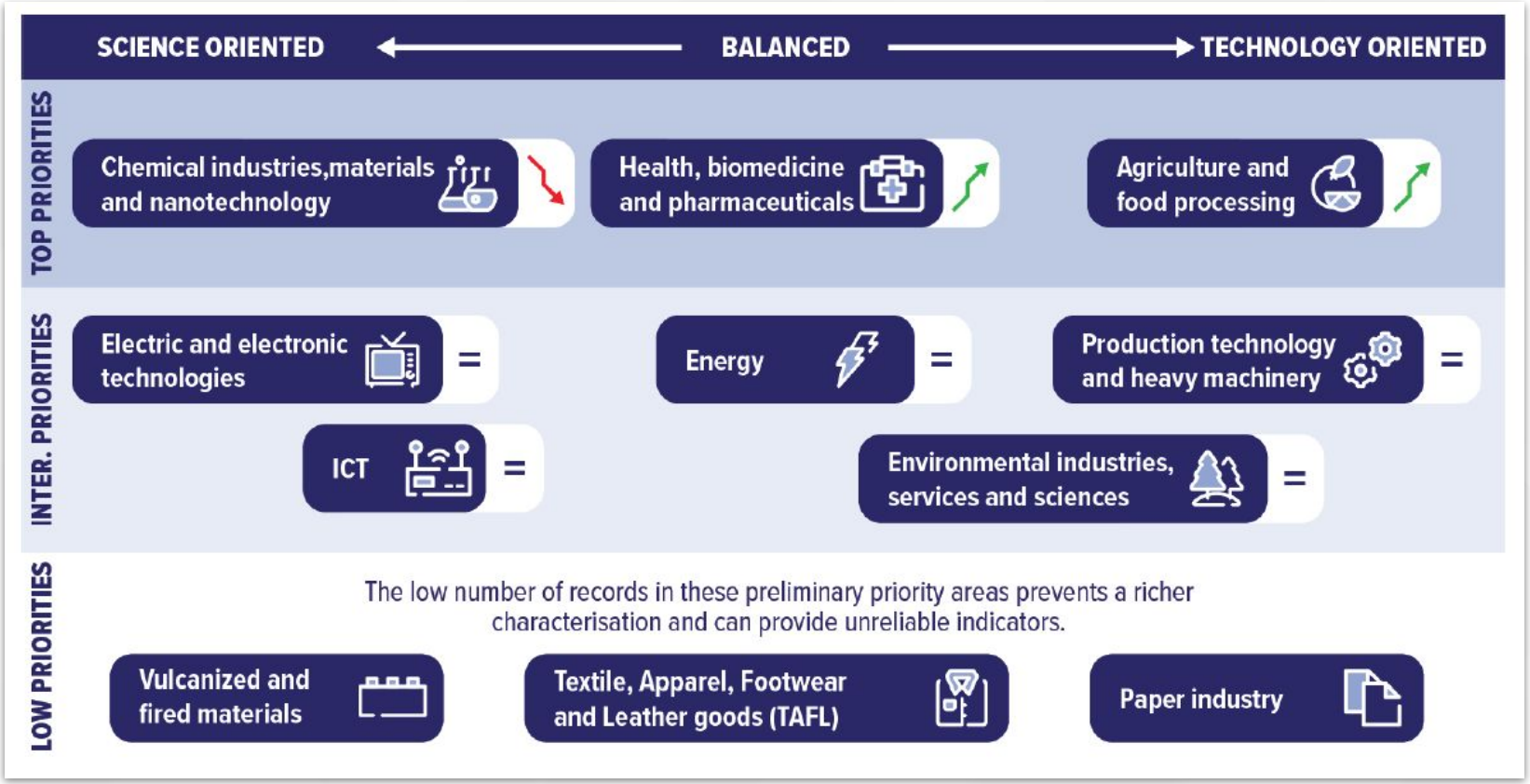
Expected results: Support to priority-setting



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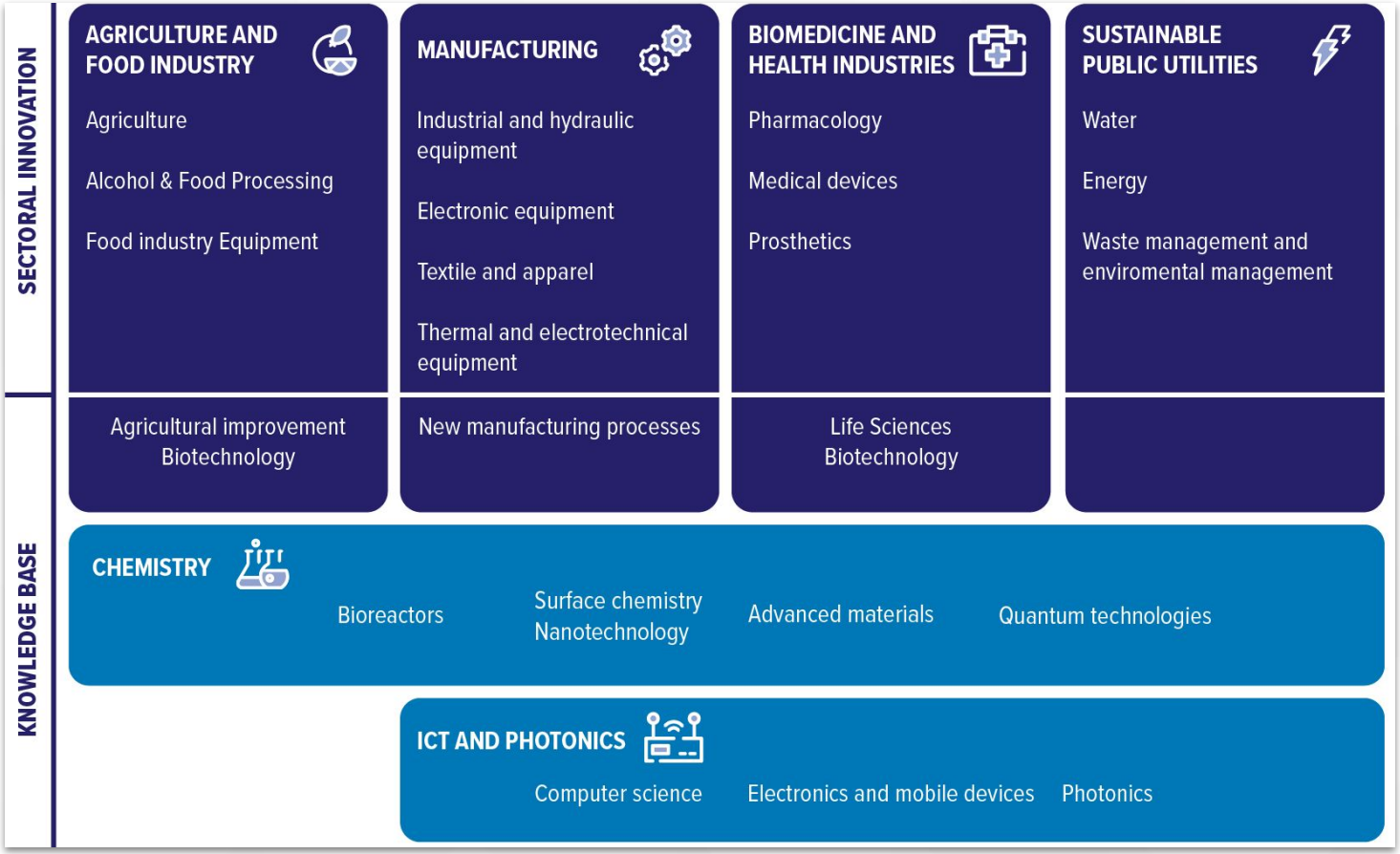

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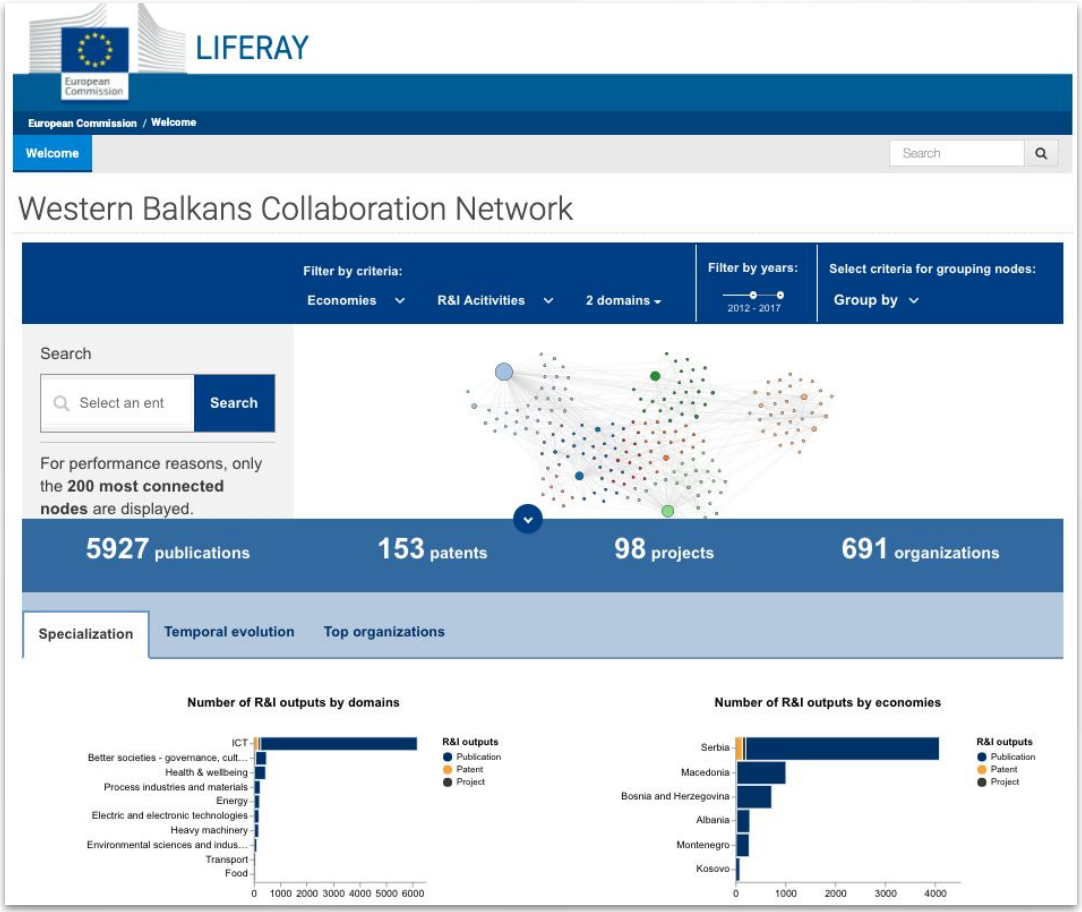
Expected results: Interactive exploratory tool



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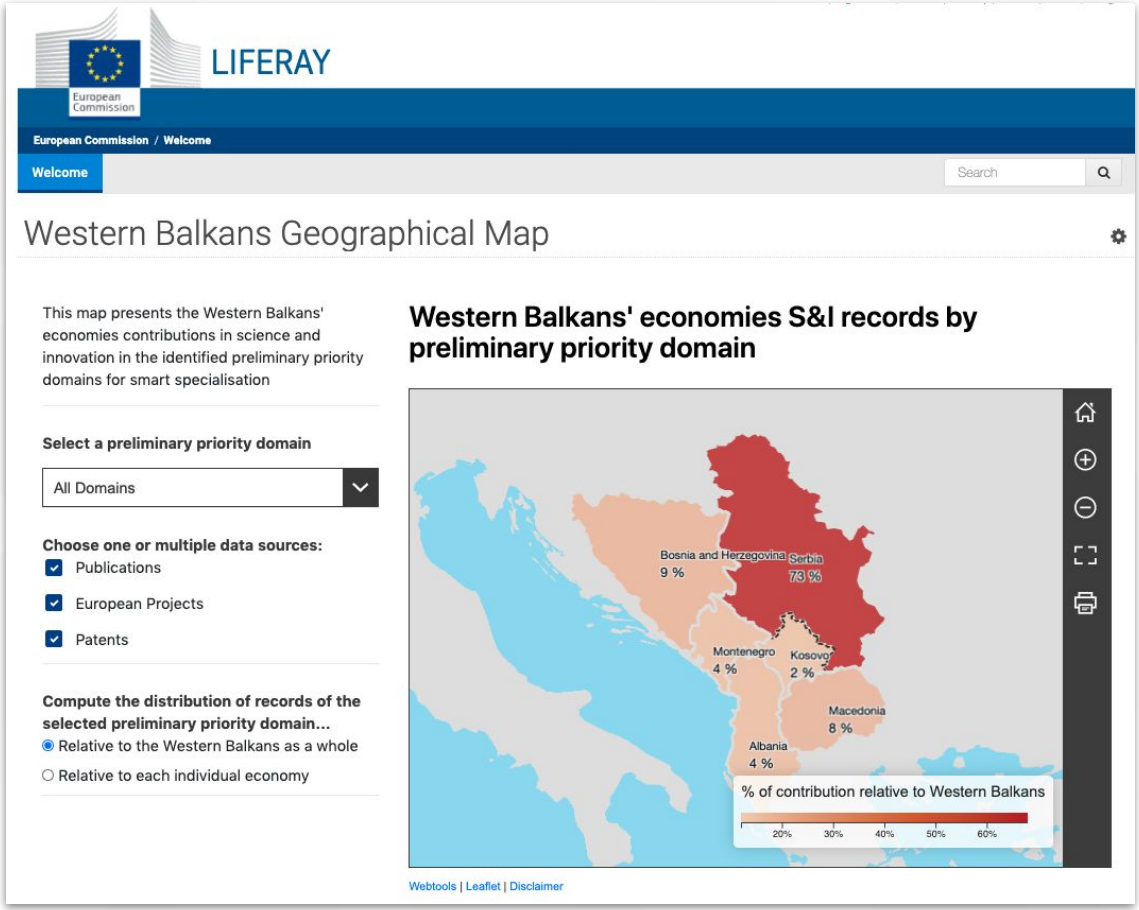

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Wrap up

Objective

1. As a basis for **further** quantitative, qualitative and expert **input towards S3 priority -setting**
2. To guide and facilitate **entrepreneurial discovery process**

Providing analytical and qualitative evidence for national policy-makers and stakeholders:

- Fine-grained **analytical evidence from different dimensions** (economic, innovation, scientific, technological) **and data sources**
- An **interactive tool facilitating exploration** of the national science, technology and innovation **(STI) systems**:
- A list of **recommended smart specialisation domains**, richly characterised

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