EUROPEAN CLUSTER COLLABORATION PLATFORM

Clusters meet Regions' event in Chișinău
"Clusters as drivers of inter-regional value chains"

Input paper

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Executive Summary

This paper presents observations on the economic profile, trade flows and the cluster landscape in Moldova and the Danube Region. By examining relevant business and value chains between the EU27 and Moldova and by assessing the Moldovan cluster landscape, key considerations for the (further) integration of Moldovan cluster organisations and enterprises into EU value chains are outlined. Key findings are summarised below:

Context: Economic profile of Moldova & the Danube Region

- Moldova's **economy** has been highly volatile since its independence, with periods of solid growth disrupted by external shocks such as the recent COVID-19 pandemic and the Russian aggression against Ukraine. Agriculture remains dominant in employment, accounting for a fifth of total employment. Furthermore, the ICT sector has seen substantial employment growth over the past four years, highlighting the rise of Moldova's digital landscape.
- Moldova's **innovation ecosystem** is still at an early stage and faces challenges such as weak collaboration between government, academia, and businesses, low R&D investment, and a shortage of skilled workers. This is also reflected in the 2024 European Innovation Scoreboard, in which Moldova is classified as an **"Emerging Innovator"**. However, broadband penetration and ICT use improvements point to dynamic growth in the digital sector.
- Moldova is part of the **Danube region**, which enhances its connectivity and potential for economic cooperation with neighbouring countries in the Danube basin. This macro-region provides easy access to global markets and has shown solid economic growth. In particular, the Mobility- Transport-Automotive ecosystem stands out in terms of employment and GVA.

EU business & value chains with Moldova: Prospects for EU27 linkages

- The Moldovan economy can be considered as being open to trade as outlined by the trade openness index. Trade between the EU27 and Moldova has grown steadily over the last ten years. In 2022, with exports from the EU27 to Moldova of around EUR 2.6 bn and imports from Moldova to the EU27 of around EUR 2.8 bn, the total **trade volume** was around EUR 7.4 bn.
- The analysis of trade flows identifies several value chains that can be particularly relevant for further cooperation between the EU27 and Moldova. These value chains can be linked to the following **six industrial ecosystems**:
    - Agri-Food
    - Mobility-Transport-Automotive
    - Digital
    - Electronics
    - Energy Intensive Industries
    - Health

Cluster organisations in Moldova & the Danube Region and the role of clusters in rebuilding regional supply chains

- Cluster organisations can take over **important roles in the organisation and development of regional supply chains**. Cluster activities such as providing information (e.g. on market opportunities), facilitating linkages (e.g. finding new partners/suppliers in other sectors and/or regions) or providing support (e.g. upskilling suppliers) are particularly relevant.
- In Moldova, there is a total of **20 cluster organisations**, out of which 17 receive support from the UNDP and have a regional focus, with most operating in Southern Moldova, followed by Central Moldova (not including the capital region). These cluster organisations span across **seven industrial ecosystems**, with 12 cluster organisations operating in the **Agri-Food** ecosystem. Other notable ecosystems are **Tourism** and **Textiles**. The Moldovan cluster organisations are predominantly small in terms of size (less than 50 members) and relatively new (established in the last two years).
- Around **320 cluster organisations in the Danube Region** are profiled on the ECCP. Cluster organisations in the Danube Region are generally operating in all the six key industrial ecosystems, previously identified as well as in the industrial ecosystems in which Moldovan cluster organisations are active, indicating the potential for collaboration.

International cooperation and capacity building of Moldovan clusters through cluster support initiatives

- **Internationalisation and capacity building of Moldovan clusters** is ongoing. The EU4Moldova Focal Regions Programme and the United Nations Development Programme (UNDP) play a key role in this regard.
- Within the **Danube Region Programme**, Moldovan actors work together with stakeholders from the 13 other countries of the Danube Region on several cross-regional projects. So far, more than 100 projects have been conducted. EUR 266 million is available for projects in the programming period 2021-27, and the next call for proposals will be launched in 2025.

Outlook: Building on the potential for interregional cooperation

- Nearly **150 cluster organisations** in the Danube region are identified, operating in the six key industrial ecosystems of EU-Moldova trade and in the industrial ecosystems where Moldovan cluster organisations are active. These cluster organisations provide promising potential for further integrating Moldovan cluster organisations and enterprises into EU value chains.
- More than **1,200 cluster organisations** are operating in the EU27 Member States. The ECCP and its services provide a tailored overview and various access and networking activities to this large pool of potential cooperation partners.
- The integration of Moldova into the **Single Market Programme** is a milestone in EU27-Moldova relations and offers new opportunities for building inter-regional value chains.

01

Context: Economic profile of Moldova & the Danube Region

1. Context: Economic profile of Moldova & the Danube Region

The Republic of Moldova (commonly referred to as Moldova) is a small, landlocked country in Eastern Europe, bordered by Romania to the west and Ukraine to the east. Administratively, the country is divided into 32 districts, three municipalities, including the capital of Chișinău, and two autonomous territorial units, namely Gagauzia and the Administrative-Territorial Units of the Left Bank of the Dniester. Although not internationally recognised, the latter functions as a de facto independent state, with its own government and institutions. Given that this territory is officially part of the Republic of Moldova, the region is included in the scope of this paper as the Transnistrian Region.[1] Moldova encompasses an area of approximately 33,843 square kilometres[2], making it slightly larger than Belgium.[3] The country has a population of approximately 2.4 million[4] as of 2024, while the Transnistrian Region accounts for about 465,000 as of 2023.[5] Over the past ten years, the country has faced a shrinking population by around 16%. Furthermore, the country exhibits a distinctive rural-urban dynamic, with a significant portion (56%) of its population living in rural areas[6], a reflection of the agricultural sector's predominance in the economy.

Moldova's ties with the European Union have markedly intensified over the years, marked by the signing of the EU-Moldova Association Agreement in 2014, and further solidified by the attainment of EU candidate status in 2022. This marks a significant advancement in Moldova's efforts to integrate more closely with the political and economic frameworks of the EU. The candidate status not only reinforces Moldova's commitment to aligning with EU standards but also opens up avenues for enhanced cooperation and access to EU support programmes. In 2023, Moldova was incorporated into the EU's Single Market Programme, a crucial step that underscores its growing economic ties with the European Union.

Due to its strategic location in the Danube basin, Moldova has also been an important partner in the Danube macro-region. This position enhances its connectivity and potential for economic cooperation with neighbouring countries that share the Danube basin. As part of the **EU Strategy for the Danube Region Strategy**[7], Moldova engages in various transnational projects aimed at improving infrastructure, environmental protection, and economic development. The collaboration within this macro-region helps Moldova to leverage regional resources, attract investments, and improve its transport and energy sectors, which are crucial for its economic growth and integration into the broader European market. Besides Moldova, the Danube Region consists of the following nine EU member states (see also Figure 1):

- Austria
- Bulgaria
- Czechia
- Croatia
- Germany
- Hungary
- Slovakia
- Slovenia
- Romania

[1] Due to data limitations, not all figures presented in this paper include the autonomous territory of Transnistria.
[2] This includes Gagauzia and the Transnistrian Region.
[3] See https://moldova.md/en/content/geography (last access 26.08.2024).
[4] Statistica Moldovei (2024): Usually resident population, as of January 1 by Years, Ages, Areas and Sex. Available under https://statistica.gov.md/en/statistic_indicator_details/25 (last access 19.07.2024); This does not include the Transnistrian Region.
[5] https://www.bbc.com/news/world-europe-18284837 (last access 26.08.2024).
[6] ibid.
[7] See https://danube-region.eu/ (last access 06.08.2024).

Moreover, next to Moldova, three current or potential candidates for EU membership: Bosnia and Herzegovina, Montenegro, and Serbia; are also part of the Danube Region as well as Ukraine. Given Moldova's affiliation with this macro-region, this chapter will also provide a brief economic profile of the nine EU member states participating in this greater macro-region.

Figure 1: Overview of the Danube Region countries

Source: https://www.interreg.de/INTERREG2021/EN/Funding/SixProgrammeAreas/DanubeRegion/danube-region_node.html (last access 11.09.2024).

1.1 Macroeconomic profile of Moldova & the Danube Region

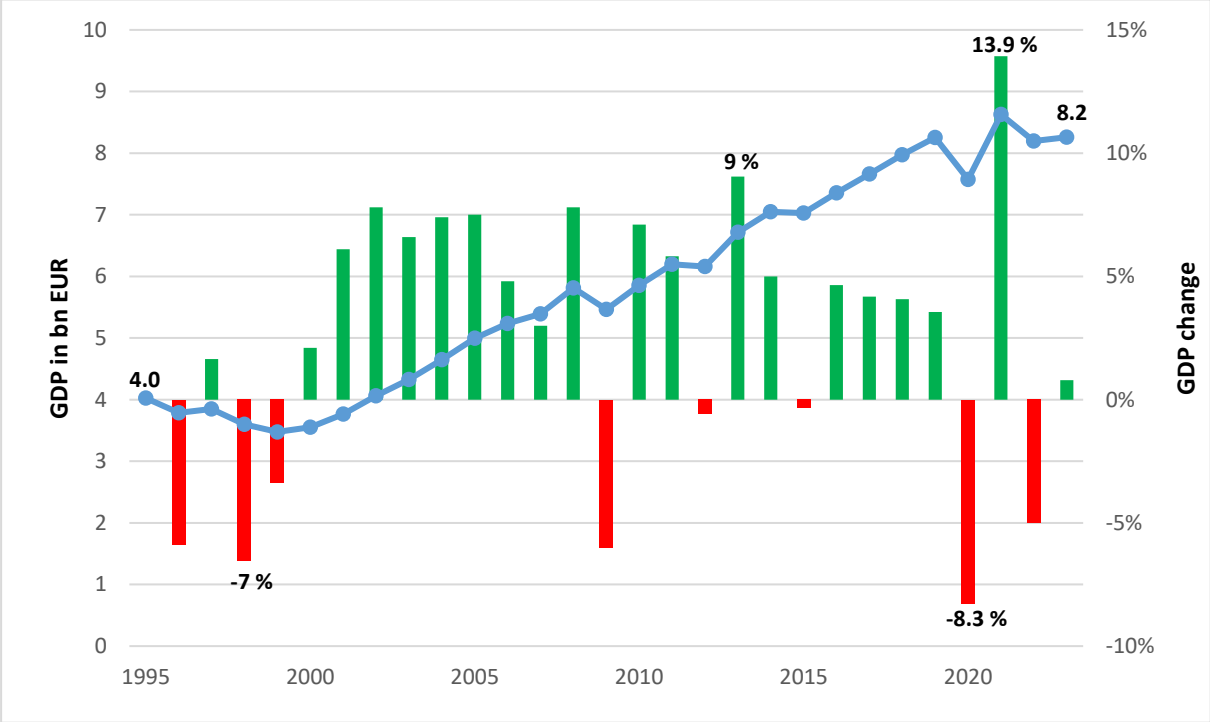
Moldova

The economy of Moldova has been very volatile since the end of the Soviet Union and the independence of Moldova in the early 1990s. In the first years of independence, the county had a negative real growth rate on average (See Figure 2). This can partially be explained by the fact that a large number of people have left the country after independence.[8] From 2000 onwards, the country entered a stage of solid economic performance in terms of GDP with growth rates regularly exceeding 6-7%. The country was affected by the financial crisis and economic slowdown of the world economy in 2008 which resulted in a recession in 2009. However, the country bounced back in 2010 with a growth rate of 7%, already exceeding the pre-crisis level of GDP. Growth after the crisis was very volatile with years of strong economic growth often followed by years of stagnation/ small recessions which can be an indicator of a low level of resilience. However, the growth rate from 2010-2019 was on average above 4% and therefore solid. The country was hit strongly by the COVID-19 pandemic in terms of

[8] Statistica Moldovei (2024): Usually resident population, as of January 1 by Years, Ages, Areas and Sex. Available under https://statistica.gov.md/en/statistic_indicator_details/25 (last access 19.07.2024).

economic slowdown. The country faced a recession of 8.3% but was able to bounce back in 2020 with a growth rate of around 14%. With the invasion of Russia in Ukraine in 2022, the country faced its next recession. The energy crisis, lower demand from neighbouring countries, and a drought in 2022 were factors that led to the contraction.[9] In 2022, the inflation hit 29.7% and decreased to 13.4% in 2023 with a GDP contraction of 5% in 2022 and a relatively small growth rate in 2023 below 1%.[10] Due to the economic hardship of the last years, the economy is still at the same level of GDP as in 2019.

Figure 2: GDP in constant EUR and GDP change in % over time



Source: ECCP (2024), own calculation based on The World Bank.

Danube Region

As this macro-region stretches from Germany to Bulgaria, the Danube Region represents a set of large economies in the EU, which have been subject to significant growth over the past 30 years.[11] As of 2022, the combined GDP of the EU27 Member States that make up the Danube Region is significant, reaching over EUR 2.8 trillion, thus representing 17.6% of the total EU27 GDP.[12] The strategic location of the region provides easy access to global markets, making it a hub for trade, as reflected by its trade capacity, with the macro-region making up around a **third of the EU27 export and import capacity**, respectively.[13] The Danube region has experienced solid economic

[9] World Bank (2024). Moldova Economic Update. Available under: https://thedocs.worldbank.org/en/doc/9a4979b9cb56380179fbe177ed17dc66-0080012024/original/Moldova-MEU-English.pdf?cid=eca_fb_moldova_en_ext (last access 19.07.2024).
[10] ibid.
[11] Note that for Germany, only the southern states of Bavaria and Baden-Württemberg which are part of the Danube region are included in the calculation.
[12] own calculations based on Eurostat (2024): Gross domestic product (GDP) at current market prices by NUTS 3 regions. Data retrieved on 22.07.2024.
[13] own calculations based on Eurostat (2023): Intra and Extra-EU trade by Member State and by product group. Data retrieved on 17.07.2024.

growth over the past decades. Despite the economic development, the region faces common challenges like the transition towards sustainability. The Danube Region builds on its cooperation to address these common challenges. The EU Strategies for the Danube region include the challenges "Connecting the Region", "Protecting the Environment", " Building Prosperity" and" Strengthening the Region".[14] The strategy aims (among other things) to foster innovation and secure long-term economic growth, improve the connectivity within the region and combat climate change.

1.2 Employment and GVA composition in Moldova & the Danube Region

Moldova

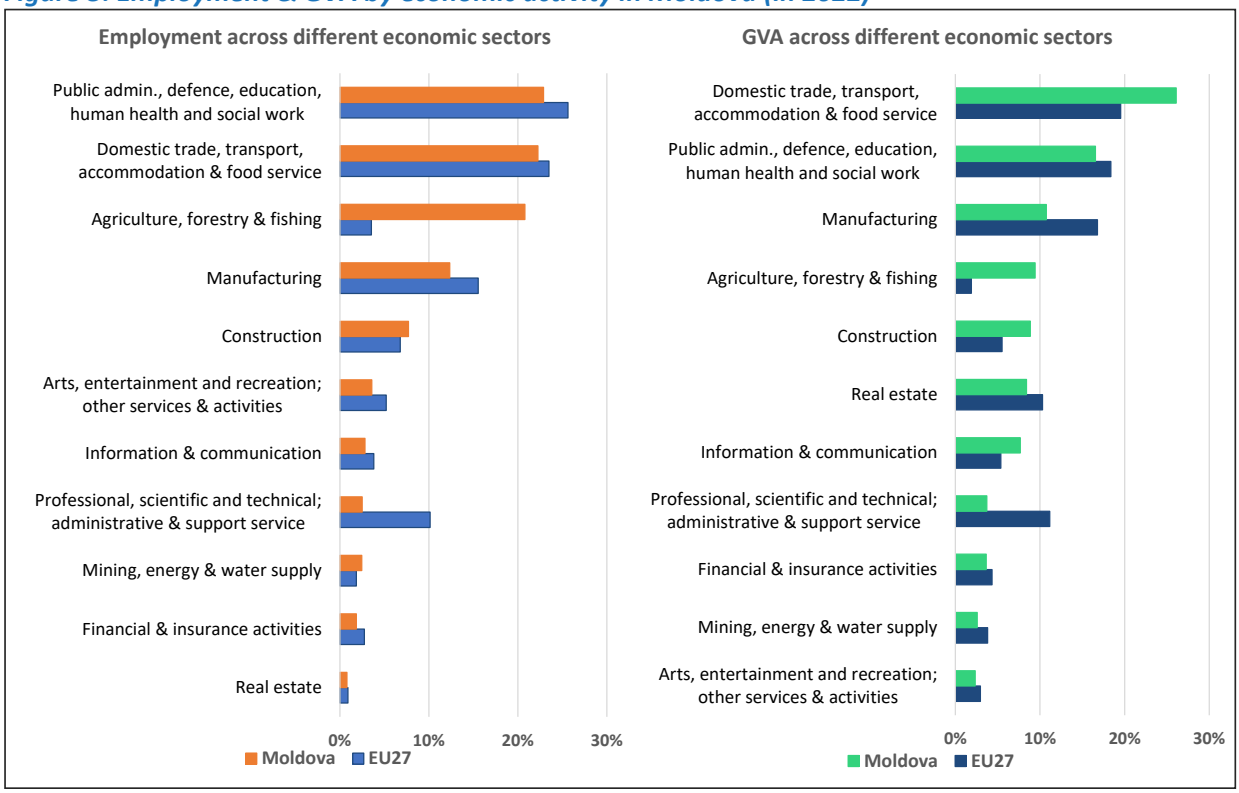
In 2023, Moldova[15] reported an active population of approximately 929,500, of which 886,900 were employed.[16] Compared to the previous year, the employment rate among the active population has decreased from 96.9% to 95.4%. When looking at the age composition, the age groups with the highest employment shares in Moldova are those aged 35 to 44 and 45 to 54 years, accounting for 27.7% and 24.3% of total employment respectively, both exceeding the EU27 average. In contrast, the younger demographic aged 15 to 24 represents a smaller slice at only 5.2%, below the EU27 average of 8.1%. Furthermore, employment trends show a decline for younger age groups and an increase for middle-aged groups since 2019. [17]

The sectoral **employment composition** in Moldova for 2022 is depicted in Figure 3 and characterised by significant sectoral contributions, particularly from sectors related to public administration, defence, education, human health, and social work, together accounting for 22.9% of total employment, slightly below the EU27 average. This figure is largely influenced by the education sector, which accounts for 10.6% of total employment in Moldova—higher than the EU27's 7.5%. Employment in the sectors of domestic trade, transport, accommodation, and food services makes up 22.3% of the total, slightly below the EU27 average. Notably, the wholesale and retail trade sector comprises 15.8% of Moldova's total employment, exceeding the EU27 average.

Notably, the **agriculture, forestry and fishing sector** remains pivotal to Moldova's economy in terms of employment, engaging more than a fifth of total employment. Specifically, this sector employed about 179,300 persons, or 20.8% of total persons employed, starkly highlighting its importance compared to the EU27 average of just 3.5%. The manufacturing sector continues to be a key employment driver, employing approximately 107,000 people, though still below the EU27 average. Conversely, the construction sector in Moldova exceeds the EU27 average with a 7.1% share in employment. Moreover, the **information and communication sector**, representing roughly 3% of total employment, has experienced a substantial growth of 36%, rising from 17,900 in 2019 to approximately 24,300 employed persons in 2022. This increase highlights the sector's expanding role amidst Moldova's advancing digital landscape.

[14] Danube Region Strategy (2019): EU Strategy for the Danube Region. Available under https://danube-region.eu/wp-content/uploads/2020/04/EUSDR-Cooperation-one-can-see_EN.pdf (last access 17.07.2024).
[15] The following employment figures do not encompass Transnistrian Region.
[16] Statistica Moldovei (2024): Population aged 15 years and over by labour status, sex, area and quarters, 2019-2024. Data retrieved on 22.07.2024.
[17] Statistica Moldovei (2024): Employed population by Level of education, Age groups, Years, Sex and Area. Data retrieved on 29.08.2024.; Eurostat (2024): Employment by sex, age and citizenship (1000). Data retrieved on 29.08.2024.

Figure 3: Employment & GVA by economic activity in Moldova (in 2022)



Source: ECCP (2024), own elaboration based on Statistica Moldovei and Eurostat.

In addition to examining Moldova's sectoral employment, it is also valuable to assess the sectoral contributions to the country's economic output. In 2022, Moldova's **Gross Value Added** (GVA) was approximately MDL 236.32 billion[18], converted to roughly EUR 11.88 billion.[19] For comparison, Malta, the EU's smallest economy, had a GVA of EUR 16.13 billion, while neighbouring Romania's GVA reached EUR 260.73 billion.[20] As shown in Figure 3, the sector covering domestic trade, transport, accommodation, and food services was the largest contributor, making up 26.1% of total GVA, which is notably higher than the EU27 average. Within this sector, wholesale and retail trade was particularly significant, contributing 19.3% to the total GVA, substantially above the EU27 average of 11.8%, while transportation and storage added another 5.4% to the GVA. Other significant sectors include public administration, defence, education, human health and social work, which collectively contributed 16.6% to Moldova's GVA, slightly below the EU27 average of 18.4%. The manufacturing sector accounted for 10.7%, lower than the EU average, while the construction sector exceeded EU27 levels. Despite its smaller share in GVA compared to employment, the agricultural sector still contributed 9.4%, well above the EU27's 1.9%.

[18] Statistica Moldovei (2024): Gross Domestic Product and Gross Value Added, CAEM Rev.2 by Economic activities, Years and Prices. Data retrieved on 28.08.2024.
[19] The figure was converted based on the annual average conversion rate from Eurostat (2024): Euro/ECU exchange rates - annual data. Data retrieved on 28.08.2024.
[20] Eurostat (2024): Gross value added at basic prices by NUTS 3 regions. Data retrieved on 28.08.2024.

Furthermore, it is noteworthy to mention that the information and communication sector has seen considerable growth, increasing its GVA share by over two percentage points to 7.7%, reflecting the growing importance of digital and communication services in Moldova's economy.

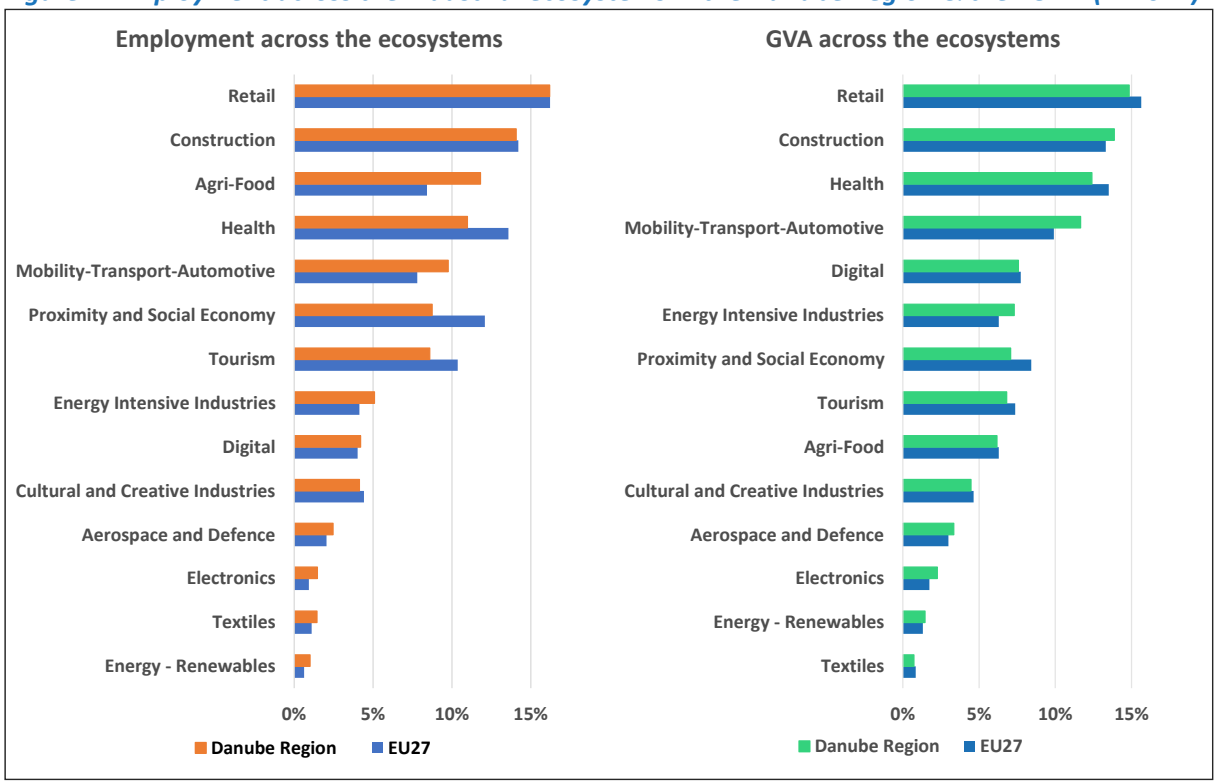
Danube Region

To give a brief insight into the Danube Region's employment and GVA composition, the region's **industrial ecosystems** can be examined (See Figure 4).[21] These industrial ecosystems have been identified by the European Commission as part of its Industrial Strategy and encompass all players operating in a value chain.[22] Notably, the Retail industrial ecosystem shows the highest share of **employment**, accounting for 16.2% of total employment, closely aligned with the EU27 average. This is followed by the Construction industrial ecosystem, representing 14.2% of employment. The Agri-Food industrial ecosystem stands out, contributing 11.8% to the region's employment, significantly higher than the EU27's 8.4%. This industrial ecosystem is especially dominant in Bulgaria and Romania, where it constitutes 23.4% and 27.1% of total employment, respectively. Similarly, the Mobility-Transport-Automotive industrial ecosystem accounts for 9.8% of employment in the Danube Region, surpassing the EU27 average of 7.8%. Roughly one-third of employment in this industrial ecosystem can be traced back to the German states of Bavaria and Baden-Württemberg, whereas Romania and Czechia employ 18.5% and 14.6%, respectively. The manufacture of motor vehicles, trailers, and semi-trailers is the predominant sector within this ecosystem, representing roughly 2.5% of total employment in the Danube Region. Other ecosystems with a higher relative employment share include Energy Intensive Industries, Electronics, Aerospace & Defence, Textiles, Digital, and Energy-Renewables.

Similarly, the Retail and Construction ecosystems are the largest industrial ecosystems in terms of **GVA**, accounting for 15.6% and 13.3% of the total GVA across the industrial ecosystems (See Figure 4). The Mobility-Transport-Automotive industrial ecosystem also proves to be a key contributor, with an 11.7% share of GVA in the Danube Region, significantly surpassing the EU27 average of 9.9%. The Agri-Food industrial ecosystem, on the other hand, only accounts for 6.2%, slightly below the EU27 average.

[21] Please note that the employment and GVA data presented are based on calculations by the ECCP using Eurostat data and refer exclusively to the EU27 member states within the Danube Region.
[22] see here for more information https://clustercollaboration.eu/in-focus/industrial-ecosystems (last access 16.08.2024).

Figure 4: Employment across the industrial ecosystems in the Danube Region & the EU 27 (in 2021)



Source: ECCP (2024), own calculations and elaboration based on Eurostat.

1.3 Innovation performance of Moldova & the Danube Region

Moldova

Moldova's innovation ecosystem is in a relatively early development stage and the country has faced multiple challenges in developing its innovation ecosystem. One is a lack of communication and sharing of information between the government, academic research institutions and the business sector.[23] In addition, capital expenditures in R&D remain low and the government tends to have limited dedicated capacities for innovation.[24] The country faces a shortage of skilled workers, 46% of the researchers are over 55 years and the number of researchers is decreasing in recent years.[25] Mass migration and brain drain have further affected the situation.[26] On the positive side, the **IT sector** has developed very dynamically in recent years with a 35% increase in exports in 2021 compared to 2020.[27] Other sectors that could drive innovation in Moldova are found to be the following

[23] UNIDO (2020): The Innovation Ecosystem of Moldova. Available under: https://unido-gc.org/wp-content/uploads/2021/11/Find-out-about-the-innovation-and-industrial-competitiveness-of-Moldova.pdf (last access 23.07.2024).
[24] ibid.
[25] ibid.
[26] BTI (2024). BTI 2024 Country Report – Moldova. Available under: https://bti-project.org/en/reports/country-report/MDA (last access 23.07.2024).
[27] ibid.

five areas: “innovative materials”, “technologies & products”, “biotechnology”, “health & biomedicine priority” and “energy efficiency & use of renewable energy resources”.[28]

As a fundamental pillar of the assessment of the innovation performance of Moldova, one can look at the scores from the **European Innovation Scoreboard** (EIS). The EIS is conducted annually to evaluate the research and innovation achievements of EU Member States and selected non-EU countries, assisting them in recognising areas of strength and weakness to improve their innovation performance. Member States are classified into four performance categories – Innovation Leaders, Strong Innovators, Moderate Innovators, and Emerging Innovators – based on their performance relative to the EU average.[29] Based on the data from the EIS 2024, Moldova is categorised as an “**Emerging Innovator”**, with a summary score of 23 relative to the EU average (EU=100).[30] This classification indicates that Moldova’s overall innovation performance is significantly below the European average. In fact, Moldova has the lowest score among all 40 ranked countries, trailing behind nations such as Ukraine, Bosnia and Herzegovina, and Romania. Over recent years, Moldova's innovation performance has shown minimal improvement, with a 0.3 percentage point increase since 2017. This stagnation contrasts sharply with the EU average, which has seen a 10-percentage point rise, thereby widening the innovation performance gap between Moldova and the EU.

The lower relative innovation performance is evident when examining various indicators (see Figure 15 in the Annex). Notably, R&D funding in Moldova remains critically low, with expenditures in both the public and business sectors declining since 2017. R&D expenditure in the business sector, in particular, has recorded a score of zero, underscoring the country's weak absorptive capacities for innovation. Instead, most firm investments have been directed towards non-R&D innovation activities, which currently stand at 58.7% of the EU average. This area has also experienced a downturn, exacerbated by the COVID-19 pandemic and the ongoing Russian aggression against Ukraine. Here, one needs to mention that linear R&D models (i.e. from R&D expenditures over patents to innovation to productivity growth) do not apply in less developed regions.[31] Innovation in less developed regions is rather driven by investment and production capabilities[32], and factors such as management practices and skills should also be taken into account.[33] Another significant finding from the EIS is the increasingly challenging environment for SMEs to engage in knowledge exchange. This is evidenced by the drastic 57 percentage point decline in the indicator for innovative SMEs collaborating with others relative to the EU average. Cluster organisations as networkers and facilitators of knowledge development and knowledge transfer between different innovation players are well suited to address this (see also Section 3.1). Furthermore, employment impacts have been performed below the EU average, with employment in knowledge-intensive activities and employment in innovative enterprises having a score of zero, and the latter exhibiting a significant decrease since 2017.

[28] UNIDO (2020): The Innovation Ecosystem of Moldova. Available under: https://unido-gc.org/wp-content/uploads/2021/11/Find-out-about-the-innovation-and-industrial-competitiveness-of-Moldova.pdf (last access 05.08.2024).

[29] European Commission (2024). European Innovation Scoreboard 2024. Available under: https://op.europa.eu/en/publication-detail/-/publication/8a4a4a1f-3e68-11ef-ab8f-01aa75ed71a1/language-en/format-PDF/source-search (last access 09.09.2024).

[30] European Commission (2024): European Innovation Scoreboard 2024 – Country Profile Moldova. Available under: https://ec.europa.eu/assets/rtd/eis/2024/ec_rtd_eis-country-profile-md.pdf (last access 16.08.2024).

[31] Fedyunina & Radosevic (2022): The relationship between R&D, innovation and productivity in emerging economies: CDM model and alternatives, Economic Systems, June 2022.

[32] ibid.

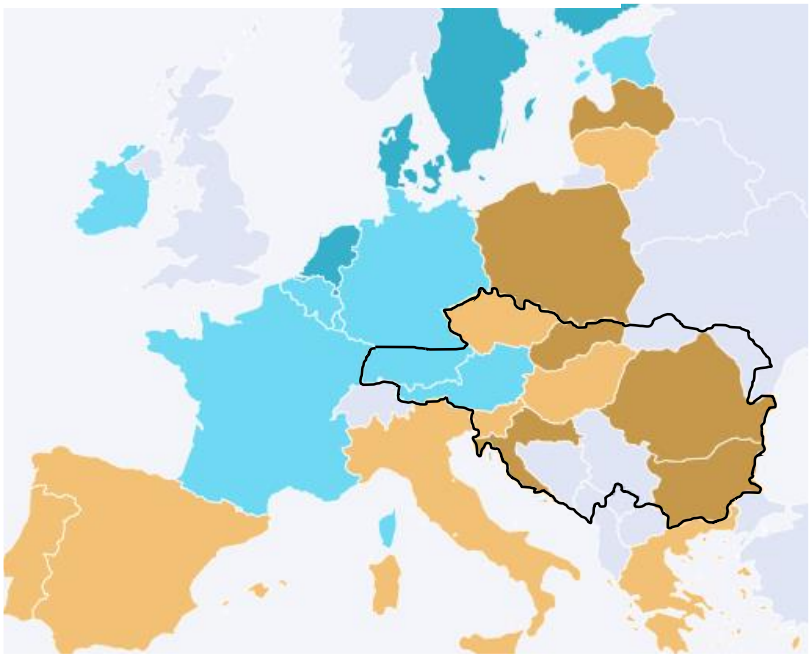
[33] Radosevic (2017): Upgrading technology in Central and Eastern European economies, IZA World of Labor, available under: https://www.econstor.eu/bitstream/10419/162349/1/iza-wol-338.pdf (last access 11.09.2024).

Nevertheless, there are positive developments, as highlighted by the EIS. Broadband penetration has a score of 89 relative to the EU, with an increase of 10 percentage points. Additionally, the use of ICT has seen a significant improvement relative to the EU average, with a 36-percentage point increase since 2017, reflecting the **growth of Moldova's ICT sector**, as evidenced by the rising score of employed ICT specialists. Furthermore, Moldova registered steady progress in the Innovators dimension, with an 18-percentage point increase in SMEs introducing product innovations and a 17-percentage point rise in process innovations since 2017, despite showing low levels in linkage. The modest increases in SMEs introducing product and business process innovations suggest some improvement, though Moldova's overall innovation capacity in this sector remains limited.

Danube Region

The Danube Region shows some diversity in terms of its innovation performance (See Figure 5). Germany and Austria are the highest-performing countries in this macro-region, and both are classified as "Strong Innovators". Slovenia, Hungary, and Czechia are classified as "Moderate Innovators". The other four EU countries of the macro-region, namely Bulgaria, Croatia, Romania, and Slovakia are classified as "Emerging Innovators". The five non-Eu countries of the region, namely Serbia, Bosnia and Herzegovina, Montenegro, Ukraine, and Moldova (in grey) are all classified as "Emerging Innovators" in the European Innovation Scoreboards 2024.

Figure 5: Danube Region in the European Innovation Scoreboard



Source: European Commission (2024). European Innovation Scoreboard. Note: Non-EU countries are in grey.

02

EU business & value chains with Moldova: Prospects for EU27 linkages

EUROPEAN CLUSTER COLLABORATION PLATFORM

Strengthening the European economy through collaboration

2. EU business & value chains with Moldova: Prospects for EU27 linkages

This chapter follows the objective of generating a comprehensive understanding of the trade relations between the EU27 Member States and Moldova by outlining the trade potential between the EU27 and Moldova in thematic areas. To conduct this exercise, the UN Comtrade database is utilised which provides a wealth of information on trade flows between these countries. Information on structural trends and general characteristics of the respective economies is provided. On this basis, this Chapter examines the main trading partners and the types of goods and commodities traded.

2.1 EU and Moldovan Trade: Analysis of trade structure

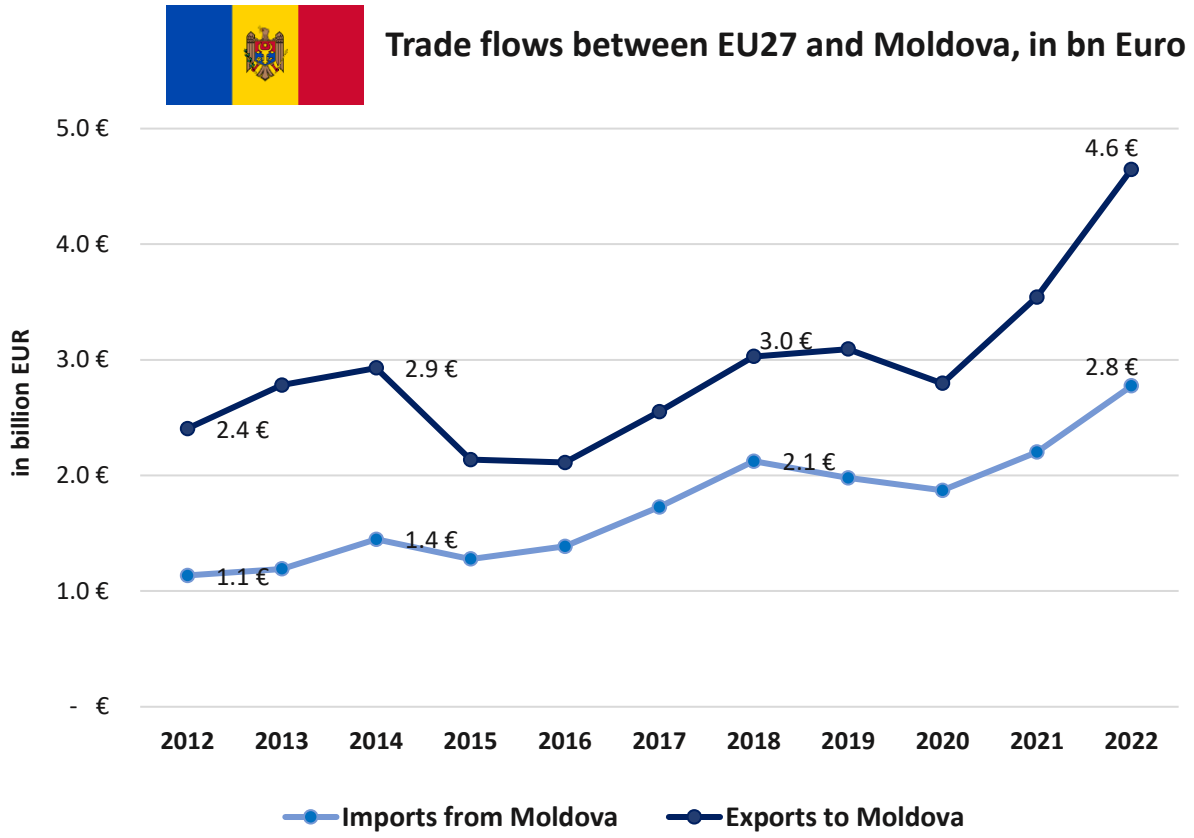
To start with, Figure 6 provides an overview of the **evolution of trade** between the EU27 and Moldova from 2012 to 2022. Overall, one can see a strong increase in trade flows between the EU27 and Moldova from 2016 to 2022 (except 2020 where the COVID-19 crisis had significant negative impacts on global trade). In that context, one has to mention the Association Agreement[34] between the European Union and the Republic of Moldova which came into full effect in the year 2016. [35] This agreement is linked to a Deep and Comprehensive Free Trade Agreement (DCFTA) between Moldova and the EU through which Moldova benefits from reduced or non-existent tariffs as well as improved investment conditions.[36] Besides structural reforms, the Association Agreement and the DCFTA also focused on increased cooperation in topics related to energy, transport & industrial cooperation. Moreover, a Priority Action Plan to further foster collaboration between the EU and Moldova in the years 2023 and 2024 is also in place. This action plan further increased the access of Moldova to the Single Market and relevant funds (e.g., funds for business competitiveness).[37] The agreement of the integration of Moldova into the EU Single Market in 2023 was another key step for the country's access and preparation for the standards of the EU internal market.[38]

Against this background, imports from Moldova to the EU27 have amounted to around EUR 2.8 billion in 2022. With exports from the EU27 to Moldova amounting to EUR 2.6 billion, the **trade volume totalled around EUR 7.4 billion** with a positive trade balance of around EUR 1.9 billion for the EU27. Moreover, one needs to mention that the EU27 are the most important trading partner for Moldova since the European Union is responsible for more than 50% of the country's total trade. Moldovan trade with Russia has decreased drastically following Russia's full-scale invasion of Ukraine in 2022 and now only accounts for around 4% of the total trade of Moldova.[39] This can be complemented with a trade openness index which shows total trade as a percentage of

[34] see https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02014A0830%2801%29-20211116 (last access 19.07.2024).
[35] see https://ec.europa.eu/commission/presscorner/detail/en/IP_16_2368 (last access 19.07.2024).
[36] see https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/moldova_en (last access 19.07.2024).
[37] see https://circabc.europa.eu/ui/group/09242a36-a438-40fd-a7af-fe32e36cbd0e/library/fd85c6d1-0a14-4cf6-8850-50d968c70784/details?download=true (last access 19.07.2024).
[38] https://mded.gov.md/en/moldova-and-the-european-union-have-signed-the-agreement-on-our-countrys-participation-in-the-eu-single-market-program/ (last access 07.08.2024).
[39] see https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/moldova_en (last access 19.07.2024).

GDP. Here, Moldova can be considered as being relatively **open to trade**, with a trade openness index of 95%.[40] This is above the trade openness index of Romania (83%) and below the trade openness index of Bulgaria (119%)

Figure 6: Development of imports & exports between Moldova-EU27 from 2012 to 2022, values in bn Euro

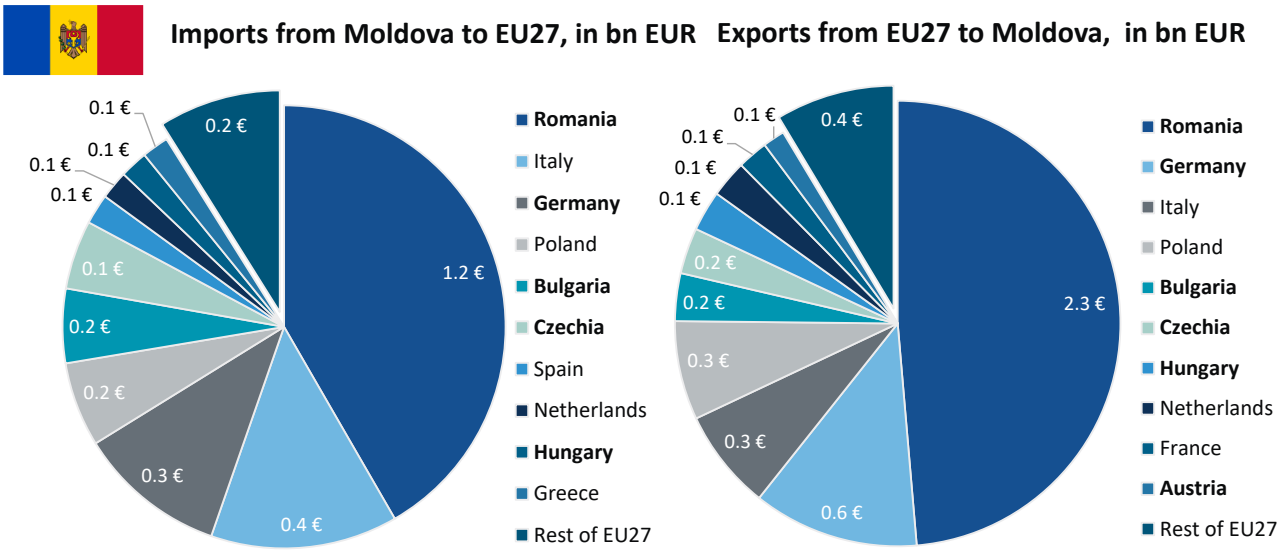


Source: ECCP (2024), own calculation based on UN Comtrade Database. Data retrieved on 18.07.2024. Note: Countries in bold highlight the Danube region. The value of the trade capacity was converted into Euro using the average conversion rate from Eurostat.

Figure 7 shows the 10 **most important EU27 trading partners for Moldova.** This figure shows that Romania is the most important European trading partner for Moldova with imports from Moldova totalling EUR 1.2 billion and exports to Moldova with a value of around EUR 2.3 billion. With these figures, Romania accounts for 42% of all imports from Moldova to the EU and almost 50% of all exports from the EU to Romania. This comes as little surprise since Romania is the only EU27 neighbour of Moldova. Other relevant European trading partners for Moldova (out of which many are located in the Danube Region) are Germany, Italy, Poland, Bulgaria and Czechia.

[40] see OECD: Trade as % of GDP. Data retrieved on 12.09.2024.

Figure 7: 10 most important EU27 trading partners for Moldova, by imports to EU27 and export from the EU27 in 2022, values in billion Euro



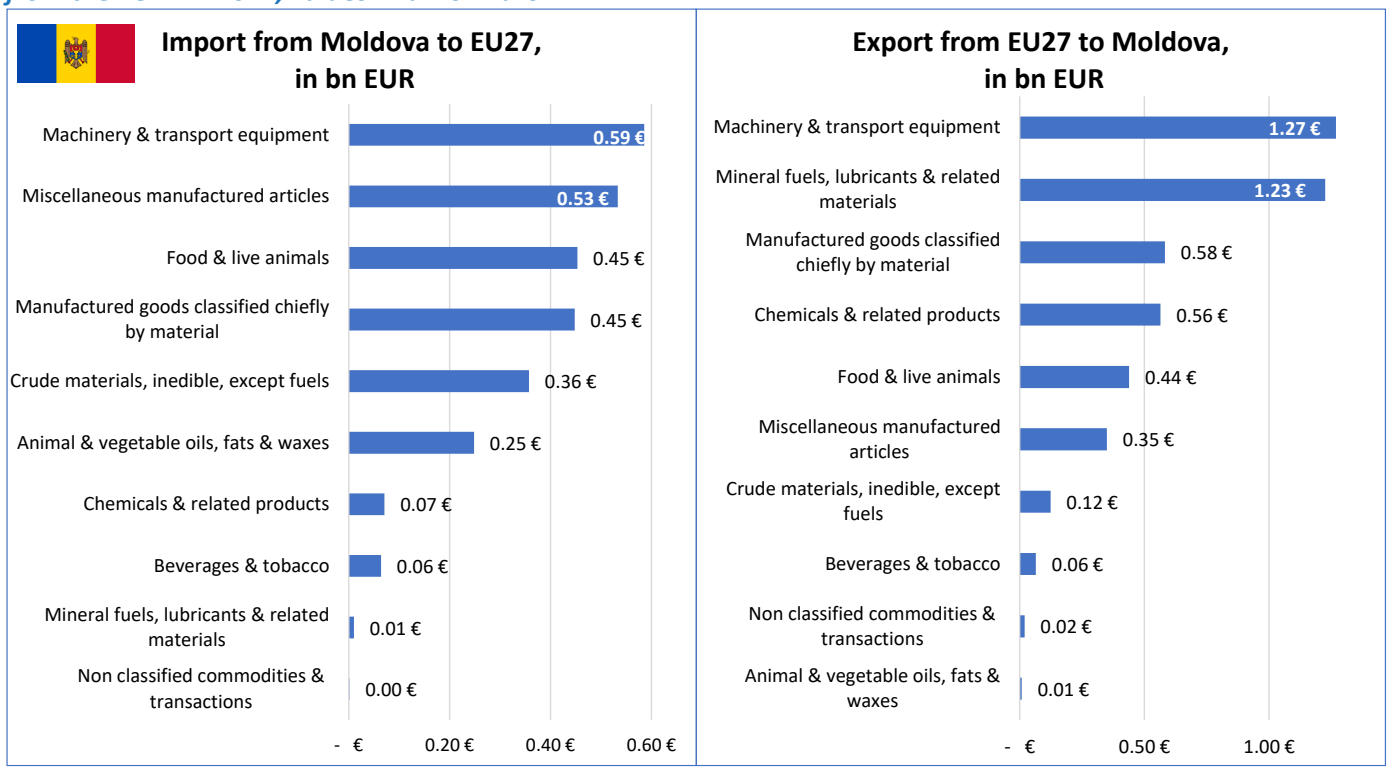
Source: ECCP (2024), own calculation based on UN Comtrade Database. Data retrieved on 18.07.2024. Note: Countries in bold highlight the Danube region. The value of the trade capacity was converted into Euro using the average conversion rate from Eurostat.

2.2 EU and Moldovan Trade: Analysis of value chain linkages

Moving on, Figure 8 provides an overview of the **traded goods between the EU27 and Moldova** in 2022, by import and export. As shown by the chart on the left of the figure, the most relevant goods that were imported from Moldova to the EU27 were machinery and transport equipment (EUR 0.59 bn; 21% of all imports) and miscellaneous manufactured articles (EUR 0.53 bn; 19% of all imports) followed by food and live animals and other manufactured goods both with a value of around EUR 0.45 bn (each accounting for 16% of all imports). These goods can be linked to the **EU industrial ecosystems**[41] **Mobility-Transport-Automotive** as well as the **Agri-Food** ecosystem. Other relevant goods include crude materials (EUR 0.36 bn; 13% of all imports) and animal and vegetable oils, fats and waxes (EUR 0.25 bn; 9% of all imports). On the side of the exported goods from the EU27 to Moldova, the situation looks a bit different. Here, machinery and transport equipment (EUR 1.27 bn; 27% of all exports) and mineral fuels, lubricants and related materials (EUR 1.23 bn; 26% of all exports) are by far the most relevant goods exported to Moldova from the EU27 which further points to the relevance of value chains linked to the EU industrial ecosystems Mobility-Transport-Automotive. The top five most important exported goods from the EU27 include chemicals and related products as well as food and live animals which points to the relevance of value chains linked to the industrial ecosystem **Energy Intensive Industries** and further strengthens the importance of the value chains linked to the Agri-Food ecosystem in the EU and Moldovan trade relations.

[41] The concept of the EU Industrial ecosystem has been introduced as part of the "A new industrial strategy for Europe" of the European Commission to provide an analytical tool which is not related to a fixed nomenclature. for more information on the Industrial ecosystems see https://www.clustercollaboration.eu/in-focus/industrial-ecosystems (last access 22.07.2024).

Figure 8: Overview of traded goods between the EU27 & Moldova, by imports to EU27 and exports from the EU27 in 2022, values in billion Euro



Source: ECCP (2024), own calculation based on UN Comtrade Database. Data retrieved on 18.07.2024. The value of the trade capacity was converted into Euro using the average conversion rate from Eurostat.

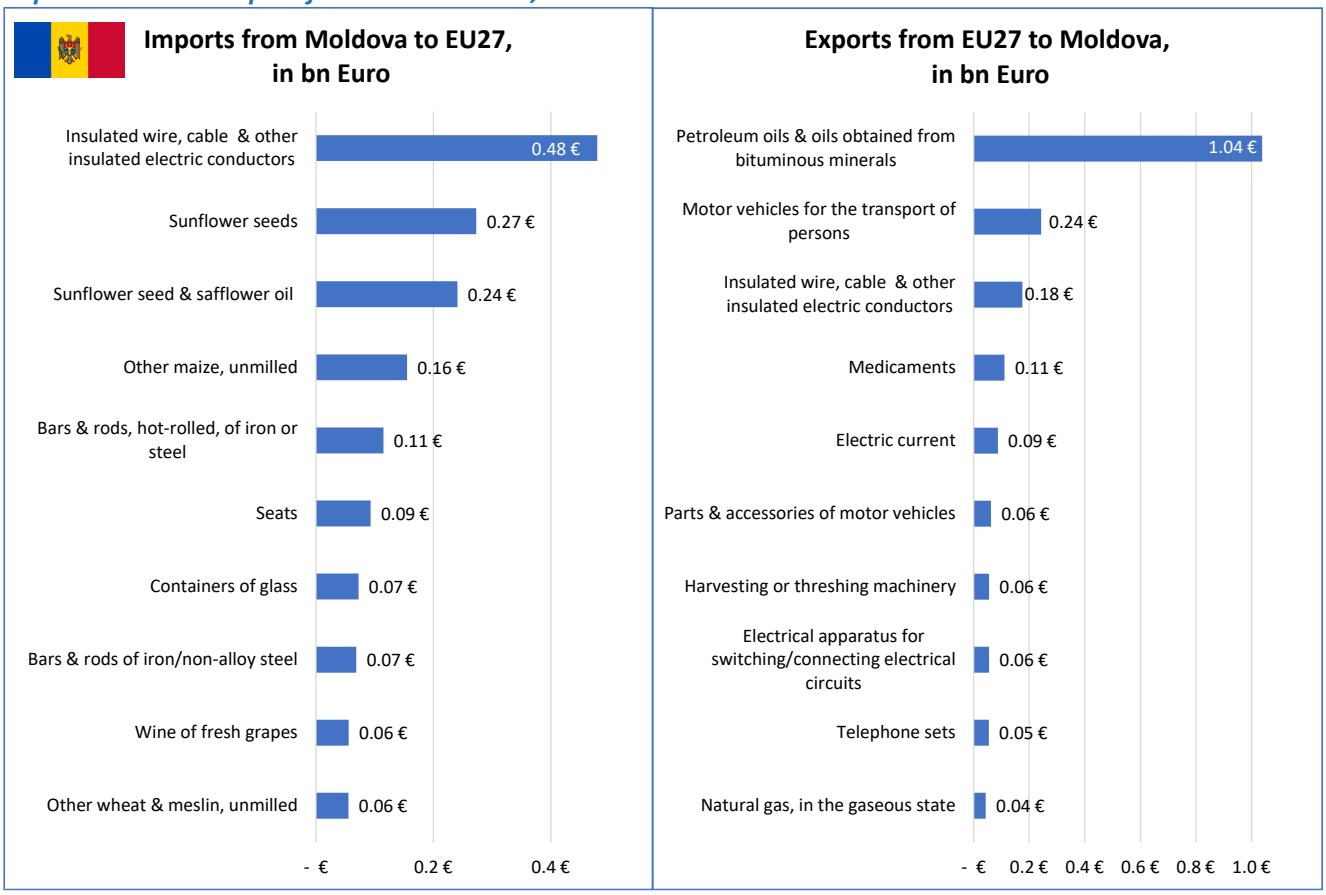
Next to the previously shown analysis of traded goods, the following Figure 9 provides a more detailed **overview of the trade between the EU27 and Moldova broken down by specific commodities**. Among the most important commodities imported from Moldova to the EU27 are many commodities that are directly linked to the EU industrial ecosystem **Agri-Food.** These include, for instance, sunflower seeds (EUR 0.27 bn), sunflower seed and safflower oil (EUR 0.2 bn) and maize (EUR 0.16). Also, the export of harvesting or threshing machinery to Moldova (EUR 0.06 bn) can be mentioned in this regard. This also corresponds to the sectoral strengths in the sector "Agriculture, Forestry and Fishing" that are pointed out in Section 1.2. In this context, one can also mention that the EU has adopted a temporary measure for full trade liberalisation for agricultural products from Moldova. This measure was introduced in 2022 and has been extended to 2025.[42]

The top 10 most important commodities traded between the EU27, and Moldova also include commodities such as bars and rods of iron or steel, petroleum oils and glass containers which further point to the relevance of value chains linked to the industrial ecosystem **Energy Intensive Industries**. Moreover, this analysis of commodities further underlines the relevance of the EU industrial ecosystem **Mobility-Transport-Automotive** for the EU and Moldovan trade relations since the most relevant exported commodities from the EU27 include motor vehicles as well as parts and accessories of motor vehicles. In this context, the relevance of insulated wires, cables and other insulated electric conductors in the EU-Moldovan trade relations needs to be highlighted since the total trade of this commodity amounts to around EUR 0.7 bn. On the one side, this further strengthens the importance of the industrial ecosystem Mobility-Transport-Automotive for the EU and Moldovan trade relations as this

[42] see https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202401501 (last access 22.07.2024).

commodity can be linked to the automotive industry. Here, the production of cables, wiring harnesses as well as electronics for cars are key sub-sectors of the Moldovan automotive component industry.[43] On the other side, this points to the relevance of the industrial ecosystem **Electronics** for the trade between the EU27 and Moldova. This is further supported by the fact that electrical apparatuses for switching or connecting electrical circuits are among the most relevant commodities exported from the EU to Moldova (EUR 0.06 bn). Since medicaments are among the most important commodities exported from the EU27 to Moldova value chains linked to the EU industrial ecosystem **Health** can also be highlighted for the trade relations at hand.

Figure 9: Overview of the 10 most important commodities traded between the EU27 & Moldova, by import to EU27 & export from EU27 in 2022, values in billion Euro



Source: ECCP (2024), own calculation based on UN Comtrade Database. Data retrieved on 18.07.2024. The value of the trade capacity was converted into Euro using the average conversion rate from Eurostat.

At this stage, it has to be mentioned that the previous analysis does not include services. However, the relevance and developments of the Moldovan IT sector have to be considered (see also Chapter 1). This sector has shown significant growth in the last years and exports from this sector amounted to around EUR 330 million in 2021 (+20% compared to 2020).[44] With the IT sector being at the core of the Moldovan economic growth, there have been initiatives around European nearshoring of IT services in Moldova.[45] In addition, the European Commission

[43] see https://www.trade.gov/country-commercial-guides/moldova-automotive-parts (last access 04.09.2024).
[44] BTI (2024): BTI 2024 Country Report – Moldova. Available under: https://bti-project.org/en/reports/country-report/MDA (last access 23.07.2024).
[45] see https://invest.gov.md/en/the-investment-agency-together-with-the-moldovan-german-economic-cooperation-mdwassociation-invites-to-it-moldova-nearshoring-for-german-speaking-countries/ (last access 23.07.2024).

has opened the Digital Europe Programme to Moldova which overall has a budget of EUR 7.5 billion until 2027.[46] Hence, this underlines the relevance of the EU industrial ecosystem **Digital** for the EU27 & Moldovan trade relations.

In conclusion, the overview of the most imported and exported goods between the EU27 and Moldova shows that especially value chains linked to the industrial ecosystems listed below are most relevant for the EU27 and Moldovan trade relations:

- **Agri-Food**
- **Mobility-Transport-Automotive**
- **Digital**
- **Electronics**
- **Energy Intensive Industries**
- **Health**

These six industrial ecosystems will play a further role in Chapters 3 and 5 where the potential for cluster collaboration between the EU and Moldova is examined. Thereby, these six industrial ecosystems will be complemented by the industrial ecosystems in which cluster organisations in Moldova are operating.

[46] see https://neighbourhood-enlargement.ec.europa.eu/news/digital-europe-programme-open-moldova-2024-02-20_en (last access 24.07.2024).

03

Cluster organisations in Moldova & the Danube Region and the role of clusters in building regional supply chains

EUROPEAN CLUSTER COLLABORATION PLATFORM

Strengthening the European economy through collaboration

3. Cluster organisations in Moldova & the Danube Region and the role of clusters in building regional supply chains

The general objective of this chapter is to provide an overview of the cluster landscape in Moldova and the Danube Region and to outline the role of clusters in building regional supply chains. This chapter starts by elaborating on the relevance of cluster organisations in organising and building regional supply chains. This is followed by an overview of the cluster landscapes in Moldova and the Danube region. To this end, the respective sections map the locations of cluster organisations, provide information on the industrial ecosystems they address and outline the respective policy frameworks in which cluster organisations operate.

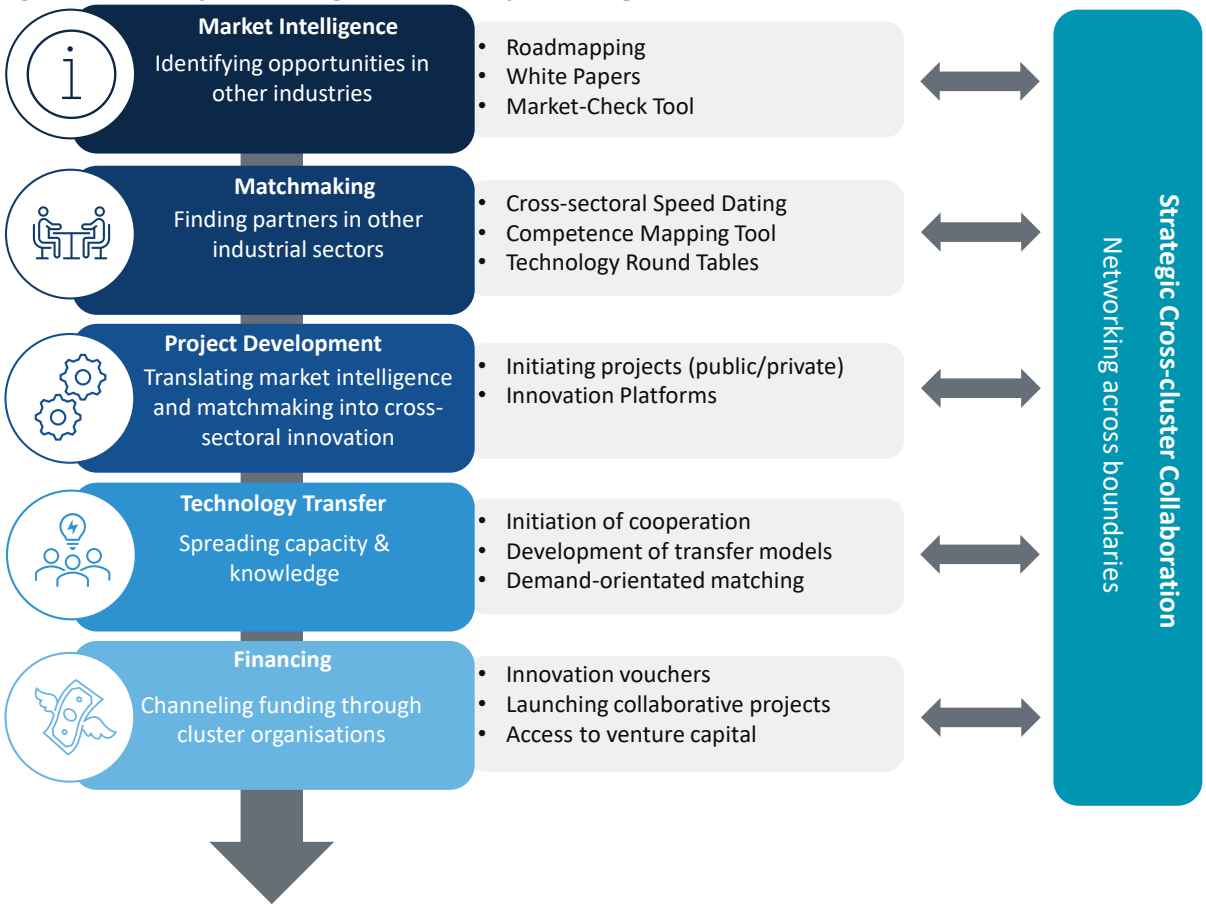
3.1 Relevance of cluster organisations in organising & further developing regional supply chains

This section provides a short elaboration on the relevance of cluster organisations in organising and further developing regional supply chains. As a starting point for this one can refer to the fundamental activities and the role of cluster organisations in promoting collaboration. The following figure presents the central activities of cluster organisations which are pivotal for strategic cross-cluster collaboration and can foster the development of new value chains as well as new business opportunities for SMEs.[47]

The fundamental activities of cluster organisations that are outlined above and in Figure 10 can potentially also serve to organise and further develop supply chains. For instance, by providing market intelligence or organising matchmakings, cluster organisations can support the identification of (new) suppliers or increase the capacity and knowledge of regional suppliers to increase their competitiveness (e.g., through the design of supplier development programmes[48]). Here, one can refer to an ECCP report from October 2022[49] which illustrates that the diversification as well as the regionalisation of the supplier base are central measures to improve supply chain resilience. Moreover, the report detects that organisations across the EU are struggling with the identification of new suppliers and the insufficient competitiveness of (regional) suppliers. The "EU COVID-19 vaccines upscale production matchmaking event"[50] or the ECCP matchmaking event with Ukrainian clusters[51] can be highlighted as examples of cluster-based matchmakings for new value chains. Moreover, it can be underlined that since cluster organisations are built around supply chains, they are also well suited for supporting new connections in rebuilding supply chains.[52]

[47] European Cluster Observatory (2014): Cluster Collaboration and Business Support Tools to Facilitate Entrepreneurship, Cross-sectoral Collaboration and Growth. Available under: https://clustercollaboration.eu/sites/default/files/eu_initiatives/cluster-collaboration-and-business-support-tools-to-facilitate-entrepreneurship-cross-sectoral-collaboration-and-growth_en_0.pdf (last access 21.02.2023).
[48] ECCP (2020): Responding to COVID19: The role of clusters in supply chain adjustments. Available online: https://clustercollaboration.eu/sites/default/files/WYSIWYG_uploads/dp2_supply_chains_final.pdf (last access 07.08.2024).
[49] ECCP (2022): Report on the survey "Solutions to Supply Chain Disruptions in the EU". Available online: https://clustercollaboration.eu/sites/default/files/document-store/ECCP_SC_Disruptions_Report_final.pdf (last access 07.08.2024).
[50] see https://clustercollaboration.eu/content/covid-19-vaccines-upscale-production-matchmaking-event (last access 07.08.2024).
[51] https://www.clustercollaboration.eu/content/eu-matchmaking-event-kosice-slovakia (last access 21.08.2024).
[52] ECCP (2020): Responding to COVID19: The role of clusters in supply chain adjustments. Available online: https://clustercollaboration.eu/sites/default/files/WYSIWYG_uploads/dp2_supply_chains_final.pdf (last access 07.08.2024).

Figure 10: Role of cluster organisations in promoting collaboration



Source: ECCP (2024), own elaboration based on European Cluster Observatory (2014): Cluster Collaboration and Business Support Tools to Facilitate Entrepreneurship, Cross-sectoral Collaboration and Growth.

In the context of **FDI investments**, one can also highlight some recent examples where clusters played a key role in attracting FDI investments. This is relevant since cluster organisations provide foreign investors access to a skilled labour force, knowledge, specialised suppliers and existing value chains. For instance, the global advances in AI, especially FDI by global tech companies have been seen over the last months. Here, one can mention the significant investments into a data centre campus in the Spanish region of Aragón which is linked to the availability of good infrastructure and a highly qualified labour force.[53] Similarly, more than 3.2 billion Euros are invested in AI data centres in the Rhenish mining district in Germany which can be considered an important cluster for digital and quantum technologies.[54] Moreover, biotechnologies have gained increasing importance not least since the COVID-19 pandemic. Here, recent FDIs include investments into a high-tech production site by a US pharmaceutical company in the German region Rhineland-Palatinate. This investment was explicitly explained by the existence of an existing biotechnology cluster and the access to qualified personnel.[55] In the

[53] see https://investinaragon.com/microsoft-announces-its-intention-to-build-a-data-centre-campus-in-aragon-to-provide-intelligent-cloud-services-to-european-companies-and-public-organisations/ (last access 13.06.2024).
[54] see https://www.land.nrw/pressemitteilung/von-der-kohle-zur-ki-plaene-fuer-ki-rechenzentren-von-microsoft-im-rheinischen (last access 13.06.2024).
[55] see https://www.lilly.com/de/presse/embargo_alzey_spatenstich (last access 13.06.2024).

context of semiconductors, the FDI investments in the Polish region of Lower Silesia can be highlighted. The decision to locate the more than 4 billion Euro investment in Lower Silesia was based on access to relevant academic institutions and qualified workers in the region.[56]

3.2 Cluster organisations in Moldova & the Danube Region

The involvement of cluster organisations in regional economic governance, policy design, and implementation is crucial for regional economic development. In Moldova and the broader Danube region, cluster organisations serve as key intermediaries within innovation ecosystems since they facilitate collaboration, networking, and knowledge sharing between diverse innovation stakeholders within a geographical or sectoral cluster. As such, cluster organisations foster innovation and drive regional economic competitiveness and growth.[57]

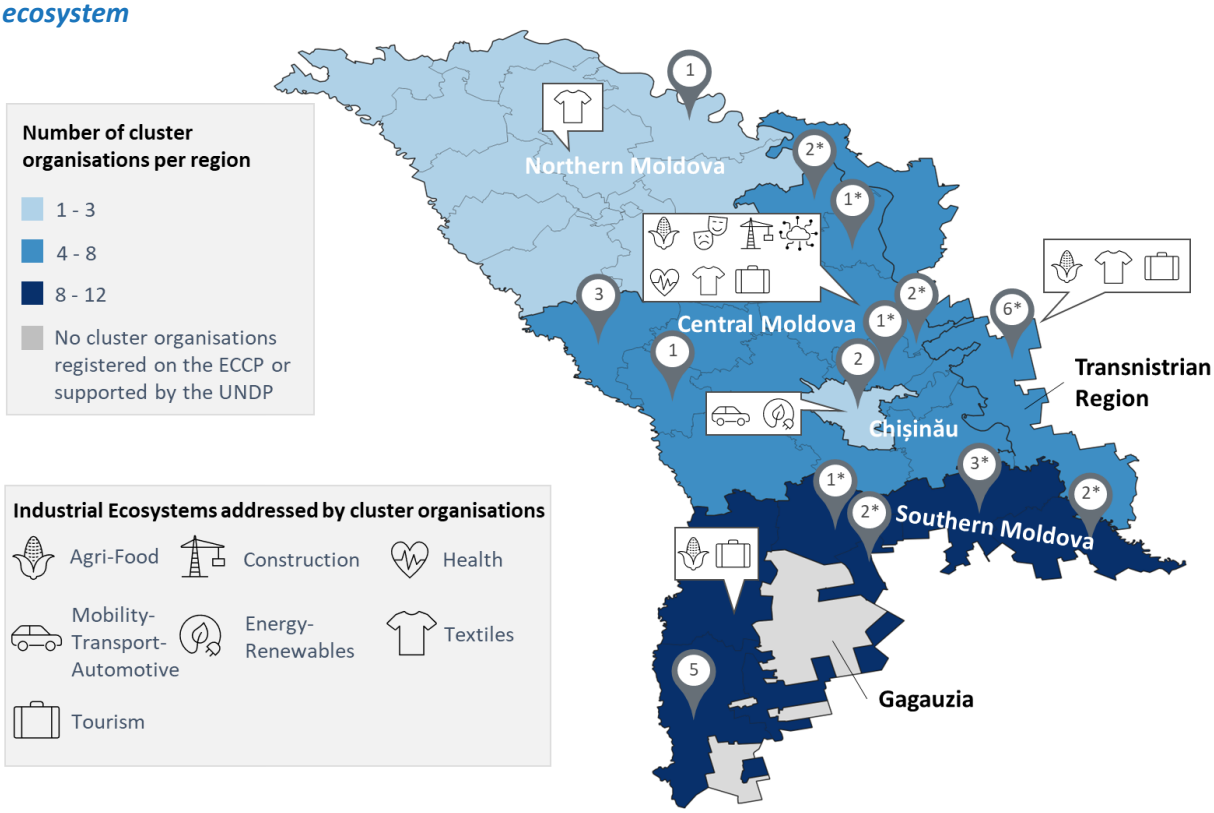
Cluster organisations in Moldova

The Republic of Moldova does not have a dedicated policy for the creation or the development of clusters, but the importance of clusters is acknowledged in several broad policies, as well as other national publications. The recent National Industrial Development Programme 2024-2028[58] represents a shift towards targeted cluster support, with interventions at the regulatory, sectoral, and enterprise levels. This programme aims to integrate cluster support into SME initiatives and enhance the eligibility of cluster members for development assistance. Moreover, the United Nations Development Programme (UNDP) Moldova made efforts in supporting various cluster organisations. It currently supports 17 cluster organisations in Moldova through three programmes, with a total funding of USD 4.8 million. These initiatives include eight clusters under the EU4Moldova Focal Regions Programme, six clusters under the UNDP project "Advanced cross-river capacities for trade" (AdTrade), and three clusters under the "Resilient and Inclusive Markets in the Republic of Moldova" project (for further details on these support measures, please refer to Chapter 4.1).

In order to gain an overview of the number and thematic focuses of cluster organisations in Moldova, one can rely on data from the European Cluster Collaboration Platform (ECCP). The ECCP serves as a one-stop-shop for cluster organisations at the EU27 level, as well as COSME countries. With regards to cluster organisations in Moldova, there is a total of **20 Moldovan cluster organisations** that are profiled on the ECCP and/or supported by the United Nations Development Programme (UNDP), thus providing a first impression of the Moldovan cluster landscape. On the ECCP, there are 11 cluster organisations registered, out of which eight are UNDP-supported.[59] Figure 11 shows the geographical distribution and thematic focus of the cluster organisations in Moldova in terms of industrial ecosystems. Geographically, most cluster organisations are situated in either Central or Southern Moldova, with nine in the southern region and eight in the central region. Additionally, six clusters encompass the Transnistrian Region, while two are based in the capital of Chișinău. In terms of its thematic focus, the cluster organisations in Moldova are operating across **seven different industrial ecosystems**, namely Agri-Food, Construction, Energy-Renewables, Health, Mobility-Transport-Automotive, Textiles and Tourism.

[56] see https://www.paih.gov.pl/en/news/20230616-the_largest_foreign_direct_investment_in_the_history_of_poland/ (last access 13.06.2024).
[57] see also ECCP (2024): The European Cluster Panorama Report 2024. Available online: https://www.clustercollaboration.eu/sites/default/files/document-store/Cluster_Panorama2024.pdf (last access 25.09.2024).
[58] See https://gov.md/sites/default/files/document/attachments/mded_nu-71.pdf (last access 02.09.2024).
[59] See https://reporting.clustercollaboration.eu/all (last access 09.09.2024).

Figure 11: Overview of regional distribution of Moldovan cluster organisations, by industrial ecosystem



Source: ECCP (2024), own elaboration based on https://reporting.clustercollaboration.eu/all (last access 25.09.2024) and information from the UNDP Moldova. A full overview of the cluster organisations is provided in Table 1 in the Annex. Note that some clusters appear more than once on the map, as UNDP-supported cluster organisations may operate in multiple regions. The asterisk (*) indicates when a cluster organisation is active in more than one district, either within the same region or across different two regions.

The 17 UNDP-supported cluster organisations are primarily concentrated in Southern and Central Moldova, with seven operating across multiple districts, as indicated in the figure above as well as Table 1 in the Annex. There are nine clusters operating in Southern Moldova, while five clusters are based in Central Moldova, all receiving support through either the EU4Moldova Focal Regions Programme or the "Resilient and Inclusive Markets in the Republic of Moldova" project. Additionally, there are six AdTrade clusters operating both on the right bank and the left bank of the Dniestr River, thus addressing beneficiaries across Central Moldova, Southern Moldova and the Transnistrian Region. The thematic focus of the 17 UNDP-supported clusters spans six industrial ecosystems. The majority are concentrated in the **Agri-Food** industrial ecosystem, with 12 cluster organisations in total, eight of which are located in Southern Moldova. Their specialisations range from beekeeping and viticulture to vegetable and fruit farming, as well as zootechnics, mainly focusing on crop production and livestock management. Beyond the Agri-Food sector, four clusters belong to the **Tourism** industrial ecosystem, such as the VIA Cahul Tourism Cluster. Additionally, there are cluster organisations within the **Construction** industrial ecosystem, represented by the Cluster Furniture & More Moldova, and the **Textiles** industrial ecosystem, represented by the Moldova Textile Export Cluster.

In addition to the UNDP-supported clusters, there are three other cluster organisations registered on the ECCP from Moldova (See Table 1 in the Annex). These include an automotive cluster, the Energy and Biomass Cluster focused on the Energy-Renewables ecosystem, both based in the capital Chișinău. Additionally, there is one cluster from Northern Moldova, specialising in the Textiles industrial ecosystem, namely the Moldovan Fashion Cluster SORINTEX. This cluster was further examined in the ECCP Cluster Solutions Library. The main insights are presented in the box below.

Box 1: ECCP Cluster Solutions Library –Moldovan Fashion Cluster SORINTEX

The SORINTEX Fashion Cluster

Background

The SORINTEX Fashion Cluster is a **collaborative network of 30 textile companies** based in northern Moldova. Established in 2018 through the EU's Technical Assistance and Information Exchange Instrument (TAIEX), it aims to strengthen cooperation within the textile sector by connecting local and international suppliers. By 2023, the cluster achieved a **turnover of €29.5 million**, with 80% of this revenue from exports to countries such as the UK, Belgium, Italy, and Sweden. The cluster employs **over 2,000 people** in areas ranging from garment production to raw materials, machinery, embroidery, and advisory services.

Objective & services

The SORINTEX's main objective is to **enhance the competitiveness of the textile industry by improving productivity and innovation**. It seeks to strengthen value chains and ensure efficient access to resources, allowing for high-quality, cost-effective production. The cluster offers a **strategic range of services** focused on enhancing collaboration among members, expanding international presence and export capabilities, strengthening industry-education collaboration, supporting innovation and digital transformation, and providing financial and funding assistance. These services aim to drive growth and improve the global competitiveness of the textile sector.

Success stories of the cluster

SORINTEX plays a pivotal role in **advancing the green and digital transitions in the textile industry**. Through technology transfer programs and innovation audits, the cluster supports the adoption of advanced digital solutions, helping member companies modernize and enhance their efficiency. It also promotes sustainable practices by encouraging the use of eco-friendly technologies and processes, such as waste reduction and energy efficiency. These efforts ensure that cluster members stay competitive, meet regulatory requirements, and align with the growing demand for sustainable products.

Additionally, SORINTEX has shown how **clusters can drive regional development by professionalising networks and enhancing cooperation**. Its management has created a more cohesive industrial ecosystem in northern Moldova, positioning the region to benefit from EU projects. This success serves as a model for other regions aiming to strengthen their industrial ecosystems and pursue long-term growth and EU integration.

Source: ECCP (2024). Note: The full case study on the SORINTEX Textile Cluster can be found in the ECCP Cluster Solutions Library.

Looking at the **characteristics of the cluster organisations in Moldova**[60], the registered organisations are predominantly small, typically employing between one and five people. A similar pattern is seen in their membership structure, with most ECCP-registered cluster organisations in Moldova having less than 50 members. This is largely due to the regional focus of the UNDP-supported cluster organisations, which primarily

[60] Note that only updated profiles on the ECCP are considered as for them information on the size, member structure and year of establishment is available.

serve members within their operating districts. Furthermore, these clusters are relatively new, with the majority of UNDP-supported cluster organisations being established in 2022 or 2023.

Cluster organisations in the Danube Region

This section provides an outline of ECCP-registered cluster organisations in the Danube Region. Overall, almost **320 cluster organisations in the Danube Region** are profiled on the ECCP. The majority of those cluster organisations are from Romania (66 cluster organisations), the two southern German regions[61] located in the Danube Region (54 cluster organisations) and Czechia (38 cluster organisations). Jointly, these cluster organisations are operating in a great variety of sectors and are addressing all 14 EU industrial ecosystems.

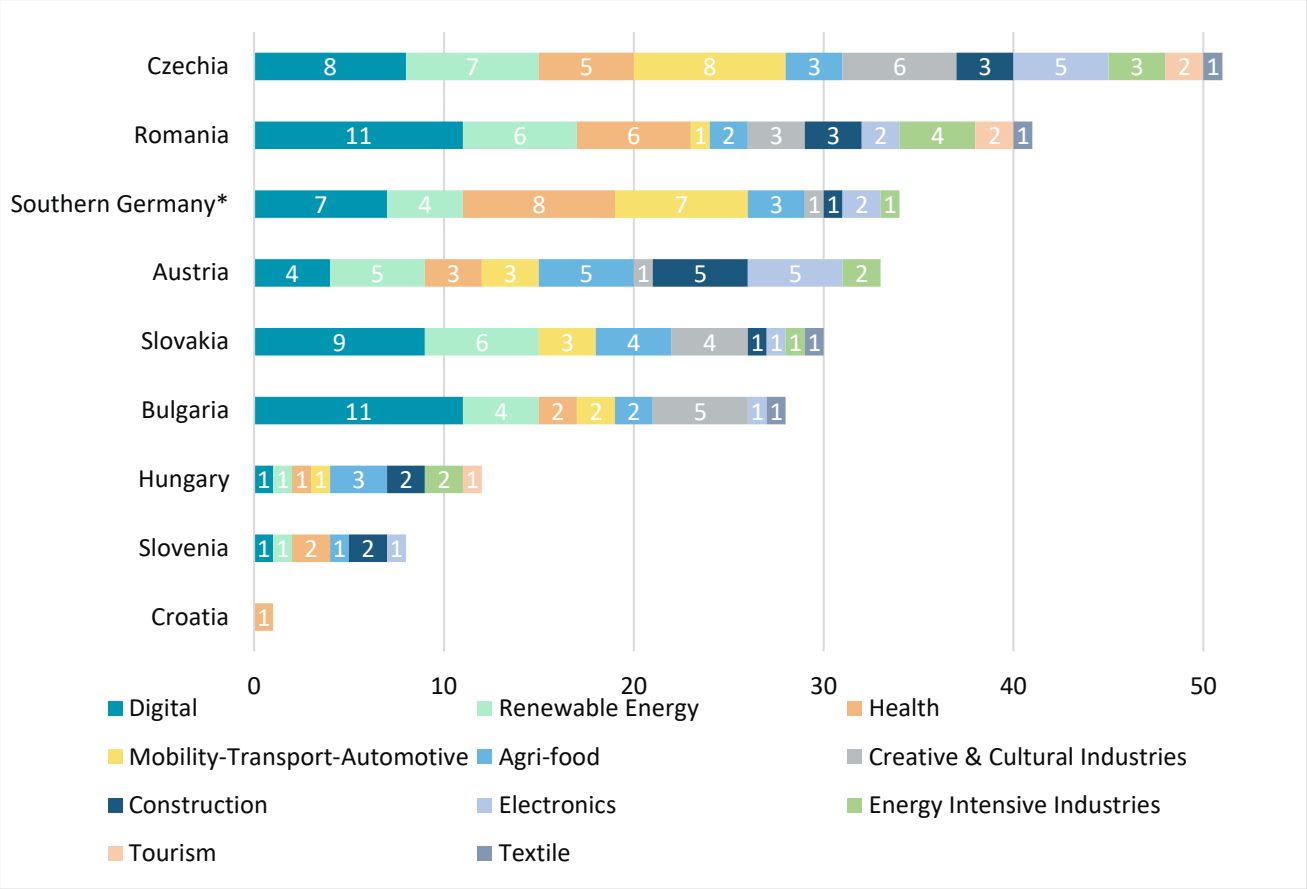
Figure 12 below shows the number of cluster organisations in 11 identified industrial ecosystems for further cooperation by country of the Danube Region. These industrial ecosystems have been identified based on the analysis of value chains in Section 2.2 and are further complemented by the industrial ecosystems in which Moldovan clusters are operating in (see the previous section). These industrial ecosystems can be regarded as key areas for further cooperation between the EU and Moldova. On an aggregated level, the number of cluster organisations in the Danube Region that are operating in those identified industrial ecosystems is as follows:

- **Digital:** 52 cluster organisations
- **Renewable Energy:** 34 cluster organisations
- **Health:** 28 cluster organisations
- **Mobility-Transport-Automotive:** 25 cluster organisations
- **Agri-Food:** 23 cluster organisations
- **Creative & Cultural Industries:** 20 cluster organisations
- **Electronics:** 17 cluster organisations
- **Construction:** 17 cluster organisations
- **Energy Intensive Industries:** 13 cluster organisations
- **Tourism:** 5 cluster organisations
- **Textile:** 4 cluster organisations

A closer look at Figure 12 reveals that, among the cluster organisations operating in the 11 industrial ecosystems identified for further cooperation between Moldova and the EU27, Czechia has the highest number of relevant cluster organisations, followed by Romania and Southern Germany. From a thematic perspective, the number of cluster organisations operating in the Digital ecosystem is the highest in Romania, Bulgaria and Slovakia. Czechia, Southern Germany and Romania provide the majority of cluster organisations operating in the Health ecosystem and Czechia and Southern Germany also provide the majority of cluster organisations operating in the Mobility-Transport-Automotive ecosystem. With regards to the Agri-Food ecosystem, many cluster organisations from the Danube Region are located in Austria, Slovakia and Hungary. The majority of cluster organisations operating in the Electronics ecosystem are found in Czechia and Austria. A comprehensive **list of all relevant cluster organisations and their websites** by EU Member State of the Danube Region is provided in Table 3 in the Annex.

[61] The two southern German regions that are located in the Danube Region are Baden-Württemberg and Bavaria.

Figure 12: Number of cluster organisations in the 11 identified industrial ecosystems for further cooperation, by country of the Danube Region



Source: ECCP (2024), own elaboration based on ECCP profile information extracted 25/06/2024. *The Danube Region only includes the Southern German regions of Baden-Württemberg and Bavaria. Note: one cluster organisation can be operating in multiple industrial ecosystems. The underlying data is provided in Table 2 in the Annex

In summary, this chapter has demonstrated that cluster organisations can play a vital role in organising and developing regional supply chains. While clusters are still a relatively recent development in Moldova, 20 cluster organisations across various industrial ecosystems have already emerged, with the majority being supported by the UNDP. In the broader Danube Region, there are over 300 cluster organisations, highlighting significant potential for further cooperation, which will be explored in more detail in Chapter 5.

04

International cooperation & capacity building of Moldovan clusters through cluster support initiatives

EUROPEAN CLUSTER COLLABORATION PLATFORM

Strengthening the European economy through collaboration

4. International cooperation and capacity building of Moldovan clusters through cluster support initiatives

This chapter places the focus on international cooperation and capacity building of Moldovan clusters through cluster support initiatives. The first part of this chapter examines the internationalisation and capacity-building activities of Moldovan clusters in the context of international development aid such as cooperation and support from the EU and through the United Nations Development Programme (UNDP). The second part of this chapter outlines cross-regional cluster activities in the Danube Region of which Moldova is part.

4.1 Internationalisation and capacity building of Moldovan clusters

Not least since the full-scale Russian war against Ukraine starting in 2022, the European Union has further focused on supporting the Republic of Moldova. Especially the integration of Moldova into the EU Single Market in 2023 was a significant next step in the relations between the EU27 Member States in Moldova. The following sub-section presents a selection of ongoing cluster-related development assistance activities to provide an overview of existing and new cluster-related assistance and cooperation activities.

Capacity building through the United Nations Development Programme

The United Nations Development Programme (UNDP) supports various cluster organisations in Moldova through capacity building. First, one can mention the EU4Moldova Focal Regions Programme. The EU4Moldova Focal Regions Programme is an initiative that is run by the UNDP, which follows the objective of increasing the economic, territorial and social cohesion in Moldova. This objective is to be achieved by supporting inclusive, sustainable and integrated local growth and by increasing the living standards in the focal regions.[62] Thereby, each focal region is supported in enhancing the competitiveness of its local economy by restructuring and strengthening its key economic sectors into robust and dynamic territorial clusters. These clusters are geared towards exporting to the EU market and integrating into sustainable, high-value supply chains. The supported activities and initiatives will leverage the most innovative methodological tools and draw on international experiences related to smart specialisation, clustering, and value chain development. The EU4Moldova Focal Regions Programme was already initiated in 2019 and is running until this year. The overall budget of the programme amounts to around EUR 23 million. Eight cluster organisations were supported by grants with a total value of around EUR 800,000 based on contributions from the European Union.[63] Next to the EU4Moldova Focal Regions Programme, the UNPD is supporting nine more cluster organisations in Moldova. This includes the support for six clusters between the years 2021-2023, mainly in the areas of agriculture, tourism and textile.[64] These six clusters were supported through the UNDP project "Advanced cross-river capacities for trade" (AdTrade)" which included contributions from Sweden and the United Kingdom. The total support planned for these six cluster organisations amounts to EUR 1.2 million. Another three clusters organisations were supported by the UNPD with funding from the Swiss Government under the project Resilient and inclusive markets in the

[62] see https://www.undp.org/sites/g/files/zskgke326/files/migration/md/7495d04efde0ec438305626f8063767826c3f63b90c9affb6c075b7d40cb0cb1.pdf (last access 02.09.2024)
[63] see https://www.undp.org/sites/g/files/zskgke326/files/2023-07/Brosura%20EU4MD%20En.pdf (last access 02.09.2024)
[64] see here for more information (last access 02.09.2024)

Republic of Moldova".[65] Here, each of the cluster organisations receive financial support of around EUR 600,000 with the overall objective of facilitating value chains and enhancing economic opportunities. These clusters are located in the thematic areas of Agri-Food and Tourism. The respective cluster organisations in the Republic of Moldova are described in more detail in Section 3.2.

Support to Moldovan cluster organisations is provided in several key areas to enhance their effectiveness and sustainability. This includes legal assistance to help clusters achieve formal recognition as legal entities. Investments are also being made in the development of essential business infrastructure such as roads, water and sewerage systems. Efforts also focus on strengthening the institutional capacity of cluster organisations and their members, ensuring they have the skills and knowledge they need to thrive. To increase productivity, clusters will be supported with modern equipment and the promotion of advanced, energy-efficient technologies in line with sustainable practices. Cluster organisations will also be helped to obtain product certifications that meet relevant market standards, enabling them to compete more effectively. Support will also be provided to create strong brands and labels to enhance the market presence of cluster products. Finally, networking opportunities will be facilitated, fostering links between cluster members and key stakeholders to promote further collaboration and growth.

Cluster-related support activities for Moldova through the EU4Business project on SME competitiveness and internationalisation

In the context of other existing cluster-related support activities for Moldova, the EU supports business development in Moldova through the EU4Business Initiative. Around 30 projects have been conducted so far and more than 6,300 SMEs have been supported via the EU4Business Initiative in Moldova. Illustrative examples of those projects include the project on SMEs Competitiveness in Ukraine and Moldova[66] which aims at providing urgent support to SMEs in Moldova and Ukraine that are affected by the war against Ukraine. It supports SMEs in their business recovery. The project has a budget of almost EUR 21 million and will run until 2032. Another illustrative project includes the project EU for Sustainable, Innovative, Green and Competitive Economy[67], which supports the green transition in Moldova. The project has a budget of EUR 8 million and runs until April 2026.

Supply Chain Resilience platform

The Supply Chain Resilience platform which is powered by the Enterprise Europe Network (EEN), follows the aim of tackling supply chain disruptions. On the platform, international suppliers are matched with the demand side and relevant contacts between relevant stakeholders such as business, support industries and academia across borders are established on the platform. The platform allows for better identification of supply chain disruptions and increased support to find subsidiary partners for SMEs, especially after the ongoing Russian war against Ukraine. The following 10 sectors are in the focus of the Supply Chain Resilience platform:

- Agri-Food
- Construction
- Digital
- Electronics
- Energy-Intensive Industries
- Health
- Mobility-Transport-Automotive
- Raw materials
- Energy-Renewables
- Textile

[65] see https://www.undp.org/moldova/projects/resilient-and-inclusive-markets-moldova (last access 02.09.2024)
[66] see https://eu4business.md/en/projects/smes-competitiveness-in-ukraine-and-moldova-nip-contract/ (last access 02.09.2024)
[67] see https://eu4business.md/en/projects/eu-for-sustainable-innovative-green-and-competitive-economy-eu4smes/ (last access 02.09.2024)

4.2 Capacity building and cross-regional activities in the Danube Region

Several different INTERREG programmes are providing funding for cross-regional cooperation projects within the EU. The aim of these programmes is to further strengthen territorial cooperation in the European Union. The **Danube Region Programme** (DRP) is one of the Interreg programmes funded by the European Union. It is designed for further territorial integration through enhanced cooperation in specific policy fields and promotes economic, social and territorial cohesion in the Danube Region. The DRP is the successor of the Danube Transnational Programme from the previous 2014-2020 funding period. The programme involves nine EU Member States and five non-EU countries, including Moldova. The 14 countries include Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Czechia, Hungary, Moldova, Montenegro, Romania, Serbia, Slovenia, Slovakia and Ukraine. [68]

Therefore, the entire territory of Moldova can participate in the calls for proposals in the current funding period 2021-2027. The thematic priorities are:

- A more competitive and smarter Danube Region
- A greener, low-carbon Danube Region
- A more social Danube Region
- A better cooperation governance in the Danube Region

Box 2: The Danube S3 Cluster

The Danube S3 Cluster - Transnational Cluster Cooperation active on Agri-Food, based on Smart Specialisation Approach in the Danube region (July 2018 – December 2021)[69]

Under the priority "Innovative and socially responsible Danube region", the project focused on the development of cluster cooperation policies based on the smart specialisation concept to boost the innovation ecosystem in the Danube region. The main objective of the 16 involved project partners led by the South Muntenia Regional Development Agency (RO) was the development and coordination of cluster policies by initiating cluster cooperation in the agro-food sector. Two organisations from Moldova were involved in this Danube S3 cluster. These two organisations are the Academy of Sciences of Moldova and the Moldovan Technology Transfer Network. The main output of the project was the Danube S3 Cluster Strategy.[70]

Source: ECCP (2024) based on Danube S3 Cluster – project website.

So far, more than 100 projects have been conducted across the 14 countries of the Danube Region.[71] A second call for proposals was open between October 2023 and April 2024. The next call for proposals will be open in the second half of 2025. The funding available for projects in the 2021-27 programming period is EUR 266 million, which includes EU support from Interreg funds and national funds from partner states.[72]

[68] see https://interreg-danube.eu/ (last access 30.08.2024)-
[69] For more information on the Danube S3 Cluster see project website: https://www.interreg-danube.eu/approved-projects/danube-s3-cluster/partners (last access on 03.09.2024).
[70] The Danube S3 Cluster Strategy is available under: https://www.interreg-danube.eu/uploads/media/approved_project_output/0001/40/d62523fcac96bbf51646906e2fc7c55726a9ca76.pdf (last access on 03.09.2024).
[71] see https://interreg-danube.eu/ (last access 30.08.2024).
[72] For more information see: https://interreg-danube.eu/drp-at-a-glance (last access 30.08.2024).

05

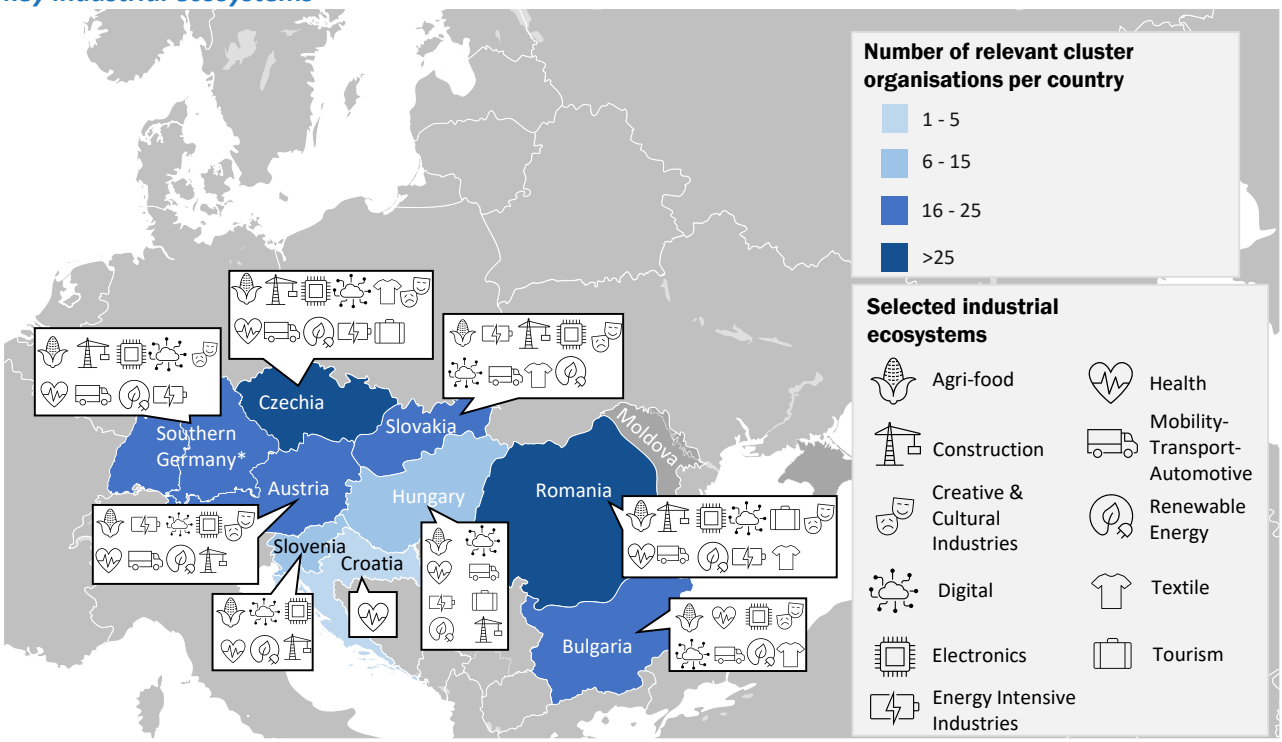
Outlook: Building on the potential for interregional cooperation

5. Outlook: Building on the potential for interregional cooperation

The previous sections have provided information on the economic strengths of the Republic of Moldova, on existing value chains between the EU27 and Moldova as well as the cluster landscape in Moldova and the Danube Region. This Chapter examines the potential for interregional cooperation by examining cluster organisations in the Danube Region that are operating in the 10 industrial ecosystems relevant to the EU Business and value chains as outlined in Chapter 2 and the industrial ecosystems in which Moldovan clusters are operating (see Section 3.2).

The following Figure 13 provides a summary overview of all cluster organisations in the Danube region that are active in the identified key industrial ecosystems. This assessment builds on the analysis started in Chapter 3. It provides information on the cluster organisations registered on the ECCP that are active in the 11 industrial ecosystems previously identified. In total, around **160 cluster organisations can be identified in the Danube region and in the key industrial ecosystems**. The highest potential by number of cluster organisations is found in Romania (30 cluster organisations) and Czechia (27 cluster organisations). Cluster organisations in these two countries are active in all 11 industrial ecosystems identified for further cooperation between the EU and Moldova. Other regions with high potential for further cooperation in terms of number are Bulgaria and Slovakia, each with 23 cluster organisations active in the identified industrial ecosystems. A comprehensive **list of all relevant cluster organisations and their websites** by EU Member State of the Danube Region is provided in Table 3 in the Annex.

Figure 13: Map of all cluster organisations in the Danube region that are active in the identified key industrial ecosystems



Source: ECCP (2024), own elaboration based on ECCP profile information extracted 25/06/2024. *The Danube Region only includes the Southern German regions of Baden-Württemberg and Bavaria. Note: one cluster organisation can be operating in multiple industrial ecosystems. The underlying data is presented in Table 2 in the Annex.

In addition to this assessment, the possibilities to find further cooperation partners through the ECCP Mapping Tool need to be highlighted. This tool enables the user to get access to a network of more than **1,200 cluster organisations in the EU27**.[73] These cluster organisations can be identified and directly contacted via this tool. For instance, more than 100 cluster organisations in the industrial ecosystem Agri-Food, around 150 cluster organisations in the industrial ecosystem Digital and almost 50 cluster organisations in Energy Intensive Industries can be identified there. There are 100 EU27 cluster organisations in the industrial ecosystem Health and around 90 cluster organisations each in the industrial ecosystems Mobility-Transport-Automotive and Renewable Energy.

Figure 14: EU27 cluster organisations in the ECCP Cluster Mapping Tool

Source: ECCP (2024), based on the ECCP Mapping Tool (last access 10.09.2024).

In conclusion, based on this assessment of the potential for interregional cooperation between Moldova and the EU, there is considerable potential for further cooperation and thus for further development of inter-regional value chains between the two regions. In this context, the access of Moldova to the European Single Market Programme and related calls for projects present a key opportunity for cluster organisations and enterprises from the Republic of Moldova.

[73] see also ECCP (2024): The European Cluster Panorama Report 2024. Available online: https://www.clustercollaboration.eu/sites/default/files/document-store/Cluster_Panorama2024.pdf (last access 09.09.2024).

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ECCP (2024): The European Cluster Panorama Report 2024. Available online: https://www.clustercollaboration.eu/sites/default/files/document-store/Cluster_Panorama2024.pdf (last access 09.09.2024)

European Commission (2024). European Innovation Scoreboard 2024. Available under: https://op.europa.eu/en/publication-detail/-/publication/8a4a4a1f-3e68-11ef-ab8f-01aa75ed71a1/language-en/format-PDF/source-search (last access 09.09.2024).

European Commission (2024): European Innovation Scoreboard 2024 – Country Profile Moldova. Available under: https://ec.europa.eu/assets/rtd/eis/2024/ec_rtd_eis-country-profile-md.pdf (last access 16.08.2024).

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Radosevic (2017): Upgrading technology in Central and Eastern European economies, IZA World of Labor, available under: https://www.econstor.eu/bitstream/10419/162349/1/iza-wol-338.pdf (last access 11.09.2024)

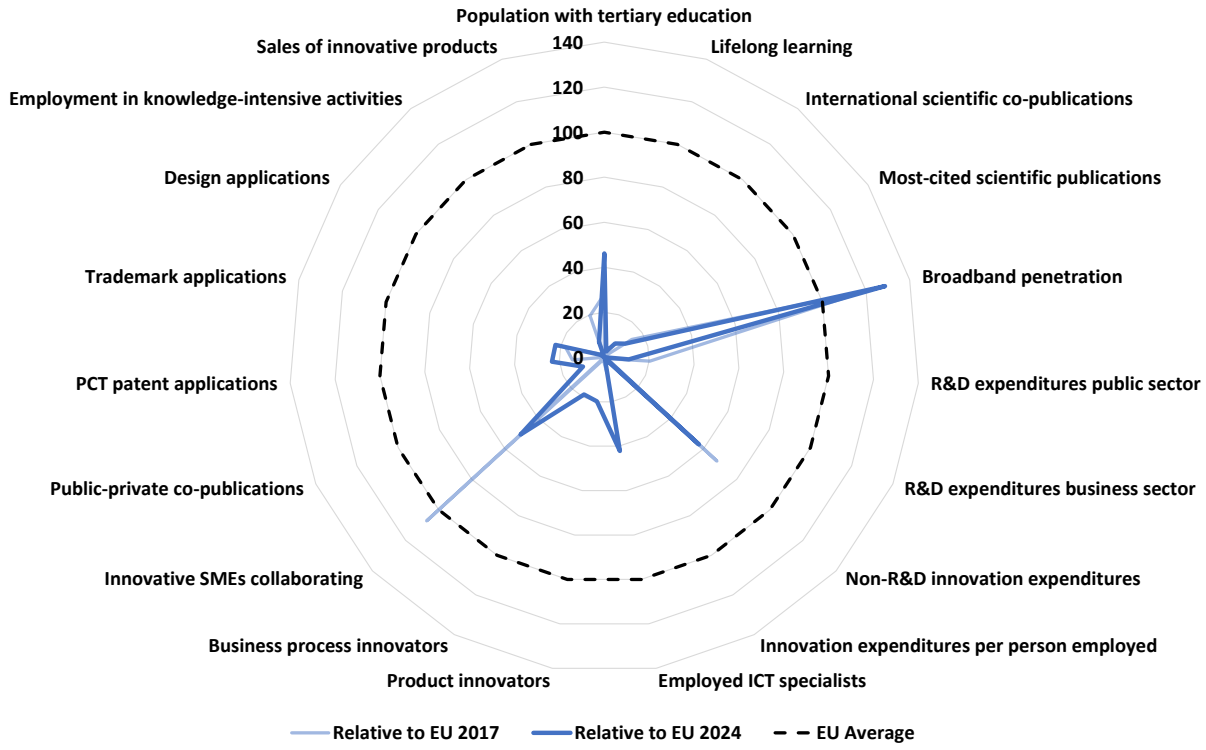
UNIDO (2020): THE INNOVATION ECOSYSTEM OF MOLDOVA. Available under: https://unido-gc.org/wp-content/uploads/2021/11/Find-out-about-the-innovation-and-industrial-competitiveness-of-Moldova.pdf (last access 23.07.2024).

World Bank (2024): MOLDOVA ECONOMIC UPDATE. Available under: https://thedocs.worldbank.org/en/doc/9a4979b9cb56380179fbe177ed17dc66-0080012024/original/Moldova-MEU-English.pdf?cid=eca_fb_moldova_en_ext (last access 19.07.2024).

Annex

Innovation performance of Moldova

Figure 15: Innovation performance of Moldova in the European Innovation Scoreboard 2024



Source: ECCP (2024) based on data from the European Innovation Scoreboard 2024.

Cluster organisations Moldova

Table 1: Overview of cluster organisations in Moldova, their location and addressed EU industrial ecosystem

N°	Cluster organisation	Profiled on the ECCP*	Location	Industrial Ecosystem
UNDP-supported cluster organisations				
1	**Cahul Beekeeping Cluster** (UNDP-supported under the EU4MD Focal Regions Programme)	Yes	Southern Moldova	Agri-Food
2	**Cimișlia-Basarabeasca Sheep and Goat Cluster** (UNDP-supported under RIMP)	Yes	Southern Moldova	Agri-Food
3	**Cluster Furniture & More Moldova** (UNDP-supported under the EU4MD Focal Regions Programme)	Yes	Central Moldova	Construction
4	**Digital Agro-Cluster Moldova** (UNDP-supported under the EU4MD Focal Regions Programme)	Yes	Central Moldova	Agri-Food
5	**Fruit Export Hub** (UNDP-supported under AdTrade)	No	Central Moldova, Transnistrian Region	Agri-Food
6	**Golden Grapes Logistics** (UNDP-supported under AdTrade)	No	Southern Moldova, Transnistrian Region	Agri-Food
7	**Heart of Nistru Cluster** (UNDP-supported under RIMP)	Yes	Central Moldova	Tourism
8	**HerbaFruct Cluster** (UNDP-supported under RIMP)[74]	Yes	Central Moldova	Agri-Food, Health
9	**Lower Nistru Cluster** (UNDP-supported under AdTrade)	No	Southern Moldova, Transnistrian Region	Agri-Food
10	**Magura Hills Tourism Cluster** (UNDP-supported under the EU4MD Focal Regions Programme)	Yes	Central Moldova	Tourism, Agri-Food, Digital, Creative & Cultural Industries
11	**Moldova Textile Export** (UNDP-supported under AdTrade)	No	Central Moldova, Transnistrian Region	Textiles
12	**Nistru Riviera Cluster** (UNDP-supported under AdTrade)	No	Central Moldova, Transnistrian Region	Tourism
13	**Southern Shepherds Cluster** (UNDP-supported under the EU4MD Focal Regions Programme)	No	Southern Moldova	Agri-Food
14	**Table Grapes Cluster** (UNDP-supported under EU4MD Focal Regions)	No	Southern Moldova	Agri-Food
15	**Trade Honey Group** (UNDP-supported under AdTrade)	No	Southern Moldova, Transnistrian Region	Agri-Food
16	**VIA Cahul Tourism Cluster** (UNDP-supported under the EU4MD Focal Regions Programme)	Yes	Southern Moldova	Tourism
17	**Winemaking Cluster** (UNDP-supported under the EU4MD Focal Regions Programme)	No	Southern Moldova	Agri-Food
Other ECCP-registered cluster organisations				
18	**Energy and Biomass Cluster**	Yes	Chișinău	Energy-Renewables
19	**Moldova Automotive Cluster**	Yes	Chișinău	Mobility, Transport, Automotive
20	**Sorintex - Moldovan Fashion Cluster**	Yes	Northern Moldova	Textiles

Source: ECCP (2024), based on the Mapping Tool (last access 25.09.2024) and information from the UNDP Moldova. * as of 25.09.2024.

[74] This includes the Moldovan Association of Aromatic and Medicinal Plant Producers (Aromeda), which is registered on the ECCP. Therefore, Aromeda is not listed separately.

Cluster organisations in the Danube region

Table 2: Number of cluster organisations in the Danube Region that are operating in the identified key industrial ecosystems

	Agri-Food	Construction	Digital	Electronics	Energy Intensive Industries	Health	Mobility-Transport-Automotive	Renewable Energy	Textile	Tourism
Austria	5	5	4	5	2	3	3	5	0	0
Bulgaria	2	0	11	1	0	2	2	4	1	0
Czechia	3	3	8	5	3	5	8	7	1	2
Croatia	0	0	0	0	0	1	0	0	0	0
Southern Germany	3	1	7	2	1	8	7	4	0	0
Hungary	3	2	1	0	2	1	1	1	0	1
Slovakia	4	1	9	1	1	0	3	6	1	0
Slovenia	1	2	1	1	0	2	0	1	0	0
Romania	2	3	11	2	4	6	1	6	1	2
Total	23	17	52	17	13	28	25	34	4	5

Source: ECCP (2024), own elaboration, data retrieved on 25.06.2024. Note: one cluster can be operating in multiple industrial ecosystems

Table 3: List of all ECCP registered cluster organisations in the Danube Region that are operating in the identified key industrial ecosystems, by EU MS

Austria

Cluster organisation	Website
Austrian Centre of Industrial Biotechnology (acib)	http://www.acib.at
Building Innovation Cluster @Business Upper Austria - OÖ Wirtschaftsagentur GmbH	https://www.b-i-c.at/
Mechatronics Cluster @ Business Upper Austria - OÖ Wirtschaftsagentur	http://www.mechatronik-cluster.at
Silicon Alps	http://www.silicon-alps.at
BioNanoNet Forschungsgesellschaft mbH (BNN)	http://www.bnn.at
Cluster for Automation & Advanced Technologies Styria	https://at-styria.at/
Creative Industries Styria	https://www.cis.at/
Food Cluster @Business Upper - OÖ Wirtschaftsagentur GmbH	https://www.lebensmittelcluster.at/en/
Green Tech Valley Cluster	https://www.greentech.at/en/
Holzcluster Steiermark GmbH	https://www.holzcluster-steiermark.at/
Human.technology Styria GmbH	http://www.humantechnology.at
Medical Technology Cluster @Business Upper Austria - OÖ Wirtschaftsagentur GmbH	http://www.medizintechnik-cluster.at/en/
OÖ Energiesparverband - Cleantech-Cluster Energy	https://www.energiesparverband.at/en
Photonics Austria	https://www.photonics-austria.at/
Silicon Alps Cluster GmbH	https://www.silicon-alps.at
Standortagentur Tirol GmbH | Cluster Mechatronik Tirol	https://www.standort-tirol.at/cluster/fachbereiche/mechatronik#schwerpunkte2
Standortagentur Tirol GmbH: Cluster Wellness Tirol	http://standort-tirol.at/wellness

Bulgaria

Cluster organisation	Website
Association for innovation, business excellence, services and technology	http://aibest.org/
Automotive Cluster Bulgaria	http://automotive.bg/
Black Sea Energy Cluster	http://www.bsecluster.org
Bulgarian Fintech Association	https://fintechbulgaria.org/
Cluster Green Transport	https://gtcluster.eu/en/home/
Cluster Information and Communication Technologies Blagoevgrad	http:/www.ict-cluster.eu
Cluster of information and communication technologies Burgas	http://ictc-burgas.org
DIGITAL HEALTH AND INNOVATION CLUSTER BULGARIA	http://www.dhicluster.bg/?lang=en
Electric vehicles industrial cluster	http://www.emic-bg.org/content/item/1
ICT Cluster	http://www.ictcluster.bg/en/
Innovative cluster Simulation models in medicine	http://smm-cluster.com/
Renewable Energy Sources Cluster	http://www.res-cluster.com/
Specialized Cluster and Institute for Apparel and Textile - Danube	http://www.sciat.eu
AgriVentures	https://agriventures.co/
AI Cluster Bulgaria	https://www.aicluster.bg/
Bulgarian Digital Cluster	https://www.digitalcluster.eu
Bulgarian Fashion Association	https://www.bgfa.eu
Bulgarian Furniture Cluster	https://www.furnitureclusterbg.com/
Cluster for Digital Transformation and Innovations	https://dticluster.org/
Cluster Sofia Knowledge City	http://www.knowledgesofia.eu/en/
CREATECH BULGARIA	https://www.createch-bulgaria.com
Green Synergy Cluster	http://en.greensynergycluster.eu/

Health and Life Sciences Cluster Bulgaria	http://biocluster.bg

Croatia

Cluster organisation	Website
Kvarner Health Tourism Cluster	http://www.kvarnerhealth.com/homepage

Czechia

Cluster organisation	Website
CREA Hydro&Energy, z.s.	http://www.creacz.com
Czech Machinery Cluster	http://www.nskova.cz
Czech Marine Cluster, z. s.	https://czech-marine-cluster.com/contact/
Klastr Mechatronika, z.s.	https://www.klastrmechatronika.cz
Nanoprogress	http://www.nanoprogress.eu
Zlín Creative Cluster	http://kreativnizlin.cz/
The Czech Hemp Cluster	https://www.czechemp.cz
Art of Glass - Czech and Moravian Glass Cluster	https://czechartofglass.com/en/klastr
Association for Applied Research in IT	https://aavit.cz/klastr-aavit/
AUTOKLASTR	https://www.autoklastr.cz
Cluster of Czech Furniture Manufacturers	https://furniturecluster.cz/en/
Czech Aerospace Cluster, z.s.	https://www.czech-aerospace.cz/
Czech Battery Cluster	https://czechbatterycluster.com/
Czech Optical Cluster	https://www.optickyklastr.cz/en
Czech Smart City Cluster	https://czechsmartcitycluster.com
CZECHIMPLANT	http://czechimplant.cz/en
E-commerce & Tech cluster, z.s.	https://www.ectcluster.cz/
Energy-Technical Innovation Cluster	https://sites.google.com/etik.cz/etik-en/home
General Engineering Cluster	https://www.maestroj.cz
HR Development Cluster	https://www.rhrklastr.cz/
IT Cluster	https://itcluster.cz/
MedChemBio	https://medchembio.org/
Moravian-Silesian Hydrogen Cluster	https://www.ms-vk.cz/
National Construction Cluster	http://www.nsklastr.com
Safety Technology Cluster	http://www.btklastr.cz/
The Association for Innovation in Logistics	https://apil.cz/en/home/
WASTen, z.s.	https://wasten.cz/en

Southern Germany*

Cluster organisation	Website
Bavarian Food Cluster	https://www.cluster-bayern-ernaehrung.de/
BioPark Regensburg GmbH / BioRegio Regensburg	http://www.biopark-regensburg.de
cyberLAGO e.V. - digital competence network	www.cyberlago.net
EPSI - European Platform for Sport Innovation	https://epsi.eu/
food.net:z	https://foodnetz.de/
Franconian Plastics Network (KNF)	https://www.kunststoff-netzwerk-franken.de/en
IT-Security Cluster	https://www.it-sicherheitscluster.de/team/dr-matthias-kampman/
Power Electronics Cluster within ECPE e.V.	http://www.clusterle.de/international
Rhine-Neckar Metropolitan Region Ltd.	https://www.m-r-n.com/was-wir-tun/themen-und-projekte/projekte/clusternetzwerk-energie-und-umwelt
ROBONOM - AUTONOMOUS SERVICE ROBOTS	https://www.robonom.de/english/
Bayern Innovativ Digital	https://www.bayern-innovativ.de/digitalisierung

BioLAGO e.V. the health network	http://www.biolago.org/en/home/
BioRN - Life Science Cluster Rhine-Neckar	http://biorn.org/
Cluster Electric Mobility South-West	https://www.emobil-sw.de/en/
Cluster Mobility & Logistics	https://www.mobilitylogistics.de/
Cluster Smart Industries	https://www.smartproduction.de/
Health Innovation Network by Bayern Innovativ GmbH	https://www.bayern-innovativ.de/de/netzwerke-und-thinknet/uebersicht-gesundheit/innovationsnetzwerk-gesundheit
Medical Valley EMN e.V.	https://www.medical-valley-emn.de/
Photonics BW e.V.	https://www.photonicsbw.de
TRANSFORMOTIVE DIALOG	https://wfgheilbronn.de
Bavarian Food Cluster	https://www.cluster-bayern-ernaehrung.de/

Hungary

Cluster organisation	Website
Cluster of Applied Earth Sciences	http://www.appliedearthsciences.org/
Hungarian Open Innovation Cluster for Construction Industry	http://www.mienk.eu
INNOSKART Digital Cluster	http://www.innoskart.digital
OMNIPACK First Hungarian Cluster of Packaging Technology	http://www.omnipack.hu/?lang=en
Science, Technology and Educational Platform for Photonics (STEPP) Cluster	http://steppcluster.eu/en/
Thermal-Health Industrial Cluster	http://www.termalegeszsegipariklaszter.hu
ArchEnerg Cluster	https://www.archenerg.eu/en
Hungarian Medical Cluster	http://mediklaszter.hu
iFood Cluster	http://ifoodklaszter.com/
North Hungarian Automotive Cluster	http://nohac.hu/
PANNON WOOD AND FURNITURE INDUSTRY ACCREDITED INNOVATION CLUSTER	http://www.panfa.hu

Romania

Cluster organisation	Website
AgroTransilvania Cluster	http://www.agrocluster.ro
Asociatia Cluster Pro-nZEB	http://www.pro-nzeb.ro
ASTRICO NORD-EST TEXTILE CLUSTER	http://www.astricone.eu/
Banat Software Cluster by ARIES-TM	www.banatsoftware.eu
Bio Danubius Regional Cluster	https://biodanubius.ro/
CANEPARO	http://caneparo.org
Cloudimpuls	https://cloudimpuls.eu/
Danube Engineering Hub	https://clusterdeh.ro/
DANUBE FURNITURE CLUSTER	https://adf-dfc.ro/
Electronic Innovation Cluster (ELINCLUS)	http://www.elinclus.ro
ETREC Cluster - Electro-Technical Regional Cluster	http://www.etrec.ro
Green Solutions Low Danube	https://greendanube.ro/
ICONIC Cluster	http://www.iconic.ro
INNOVATIVE CLUSTER FOR HEALTH	https://clustersanatate.ro/
IT&C Cluster "Lower Danube"	https://itcluster.ro/
North-East Innovative Regional Cluster for Structural and Molecular Imaging (IMAGO-MOL)	https://www.imago-mol.ro
ROHEALTH- The Health and Bioeconomy Cluster	http://www.rohealth.ro/
Smart Alliance Cluster	http://smartalliance.ro/
Technology Enabled Construction Cluster - TEC	http://www.clustertec.ro
Transylvania Energy Cluster	http://tansylvaniaenergycluster-trec.ro
Cluj IT Cluster	http://www.clujit.ro
Cyber Security Cluster of Excellence	https://cyscoe.ro

ECO-INNOVATION CLUSTER FOR SUSTAINABLE ENVIRONMENT	http://www.clems.ro
FreshBlood HealthTech	https://freshblood.ro
Green Energy Romanian Innovative Biomass Cluster	http://www.greencluster.ro
Green Technology CLUSTER	http://greentechnology.ro
Open Hub Creative Cluster	https://openhub.ro/en/home/
PRO WOOD Regional Wood Cluster	http://www.prowood.ro
ROVEST Cluster	http://rovest.eu/index.php/home
Transilvania IT Cluster	http://transilvaniait.ro

Slovakia

Cluster organisation	Website
Council of Slovak Exporters	www.exporteri.sk
Cybersecurity Cluster	https://clusterkb.sk/en/#news
FINTECH & INSURTECH ASSOCIATION OF SLOVAKIA	https://finas.sk/en/domov/
House of events innovation	http://www.heicluster.com
Industry Innovation Cluster Slovakia	www.industryinnovationcluster.sk
Ipel Energy Environmental Cluster	www.ipeek.eco
Kosice IT Valley	http://www.kosiceitvalley.sk/en/
Regional Development Cluster	www.krr.sk
REGIONALNY PRIEMYSELNY INOVACNY KLASTER RIMAVSKA KOTLINA REPRIK	http://www.reprik.sk
SAPI - renewable energy cluster	http://www.sapi.sk/klaster
Slovak Electric Vehicle Association (SEVA)	www.seva.sk
Slovak National Hydrogen Association	www.nvas.sk
Slovak Plastic Cluster	https://portal.spklaster.sk/index.php/en/
Smart Industry Association - Industry4UM	http://industry4um.sk
SME BOOSTER & INNOVATIONS CLUSTER	https://www.sbic.sk/en/
Bioeconomy Cluster	http://www.bioeconomy.sk
BITERAP	https://biterap.com/domov/
Energy Cluster of Presov Region	http://www.ekpk.sk
Envirocentrum Banska Stiavnica	https://envirocentrum.sk/en/envirocluster/
INOVATO CLUSTER	https://inova.to/
Slovak Biogas Association	https://www.sba.sk/
Slovak Smart City Cluster	http://www.smartcluster.sk
Smart Cluster StartUP HUb	https://uphub.sk/

Slovenia

Cluster organisation	Website
ITC - Innovation Technology Cluster Murska Sobota	http://www.itc-cluster.com
SiEnE, Slovenian Energy and Environment Partnership in Defence	SiEnE.teces.si
SRIPToP	http://www.ctop.ijs.si
CONSTRUCTION CLUSTER OF SLOVENIA	http://www.sgg.si
HealthDay	http://www.healthday.si
Slovenian innovation hub,European Economic Interest Grouping, SIH EEIG	https://sis-egiz.eu/
TECES, Green Tech Cluster	http://www.teces.si
Wood Industry Cluster Slovenia	http://www.lesarski-grozd.si/en/

Source: ECCP (2024), own elaboration based on ECCP profile information extracted 25/06/2024. *The Danube Region only includes the Southern German regions of Baden-Württemberg and Bavaria