EUROPEAN CLUSTER
COLLABORATION PLATFORM

Country factsheet

Croatia

An initiative of the European Union

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Introduction and economic policy context

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Strengthening the European economy through collaboration

1. Introduction and economic policy context

This document presents an overview of the cluster policy in Croatia. Given the importance to contextualise the cluster policies (and related) analysed in the factsheets, a comprehensive outlook of the country in socioeconomic terms can be consulted in the European Semester Country Report 2023 for Croatia.

The European Semester was an instrument introduced to coordinate the EU Member States economic policies and address the economic challenges faced by the EU. Its goals are "to ensure sound public finances, to prevent excessive macroeconomic imbalances in the EU, to support structural reforms to create more jobs and growth, and to boost investment". Thus, it focuses on the following areas: business environment; financial and fiscal stability; green economy; public administration; labour market and skills; and social protection and cohesion. **Chapter 4.2 provides an overview on how Croatia's cluster policy can help to tackle the economic policy challenges identified in the European Semester country recommendations.**

As a consequence of the COVID-19 pandemic, European as well as global economies have been subject to severe output losses. In response, policymakers at EU and national level have acted decisively and at short notice to make available very significant financial resources, notably through the Recovery and Resilience Facility, to tackle the threat of a prolonged downturn. National recovery and resilience plans have been drafted in each Member State to ensure a recovery that addresses the challenges identified in the European Semester. Clusters are directly mentioned and eligible for grants in the Croatian National recovery and resilience plan. In addition to the COVID-19 pandemic, the ongoing Russian military aggression against Ukraine has also taken its toll on EU companies and industrial ecosystems, highlighting the significance of policy efforts in supporting SMEs and clusters.

Croatia will receive a total of €9 billion from Cohesion Policy in 2021-2027 in the framework of its Partnership Agreement with the Commission to promote the economic, social and territorial cohesion of its regions and its green and digital transitions. These investments will help reduce regional economic disparities and enhance skills, training, and employment opportunities. The EU funds will also support the development of a competitive, innovative, and export-oriented Croatian economy. Clusters are mentioned once with regard to tourism clusters. In Croatia's Operational Program 2021 – 2027 cluster are mentioned multiple times to promote innovation and the growth of SMEs in the tourism sector.

In the following, a succinct overview of the cluster policy in Croatia will be provided. The structure of this factsheet generally encompasses:

1) an overview of the industrial ecosystems and cluster landscape in Croatia
2) an overview of the national cluster policy,
3) an assessment of the state of play of the national cluster policy and its capacity to tackle wider economic policy challenges mentioned in the European Semester Reports.

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Industrial ecosystems and cluster landscape

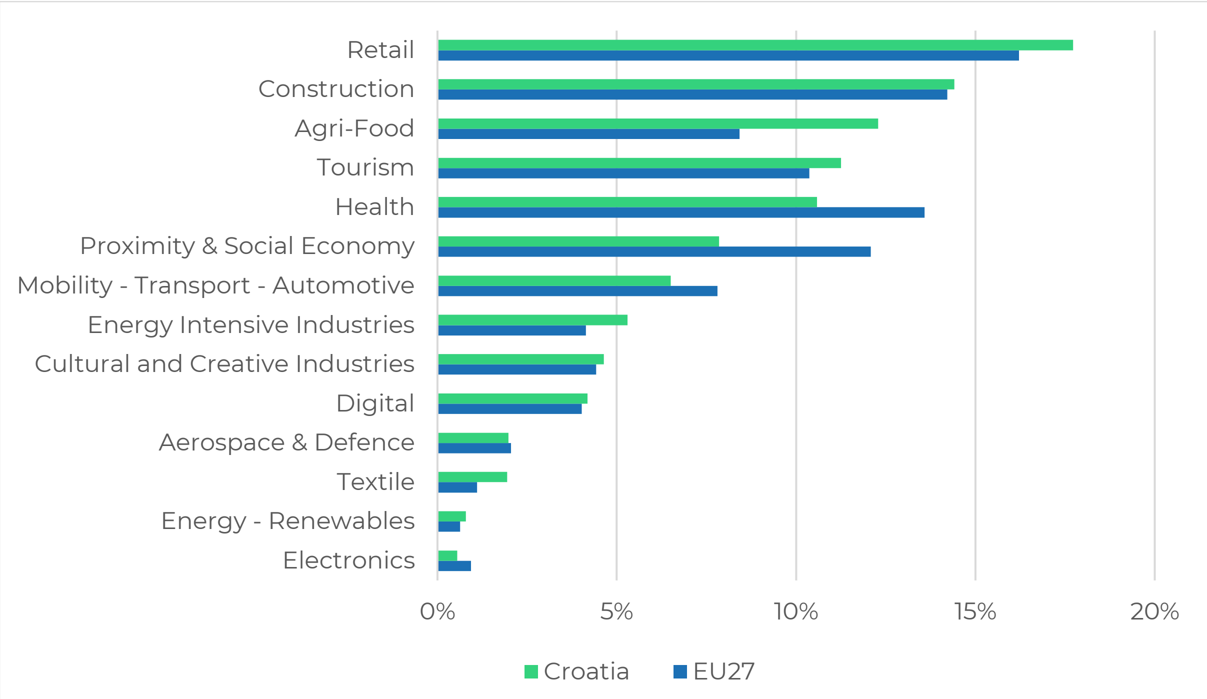
2. Industrial ecosystems and cluster landscape

2.1 Employment in the 14 industrial ecosystems

As part of its Industrial Strategy (March 2020), the European Commission has identified 14 industrial ecosystems that encompass all players operating in a value chain.[1] The classification of the 14 industrial ecosystems have been calculated by aggregating NACE 2 -digit activities, following the methodology established in the European Commission.[2] This means that the data provided below can differ from other publications by the European Commission that do not consider the industrial ecosystem classification.

In Figure 1, the employment share of Croatia and the EU27 on average in each industrial ecosystem is shown relative to the number of employed persons in the 14 industrial ecosystems. It shows the proportion of the country's employment accounted for by each ecosystem, as well as the equivalent figure for the EU27 on average. The ecosystems are ordered, from top to bottom, according to the amount of employment in the country. When the bar for the country is higher than that of the EU27, it indicates that the country is more specialised in that ecosystem.

Figure 1: Employment across the ecosystems



Source: ECCP (2023), own elaboration based on data from Eurostat.

"Retail" is the leading industrial ecosystem in Croatia, employing around 18% of the workforce across all ecosystems. It is closely followed by "Construction" at 14% and "Agri-Food" at 12%, which shows a relatively high share compared to the EU27 level, indicating Croatia's proficiency in this sector. Moreover, the "Tourism" ecosystem is also significant, accounting for 11% of employment and

1 see here for more information https://clustercollaboration.eu/in-focus/industrial-ecosystems (last access 09.01.2024).

2 see European Commission (2022): Annual Single Market Report, SWD(2022).

surpassing the EU27 level. Croatia also has other ecosystems that exhibit a comparative strength over the EU27, which are "Energy Intensive Industries," and "Cultural and Creative Industries. The regional relevance of some of these industries is evident in the sectoral and ecosystem agglomerations that prevail across the two Croatian NUTS 2 regions, as discussed in the section below.

2.2 Regional agglomerations

Economic activity is not equally distributed across regions in the EU but tends to agglomerate in certain places. In this context, an Agglomeration is defined as the concentration of a certain industry, sector or ecosystem in a certain geographical area. The following section provides an analysis of, first, the sectoral agglomerations and, second, the ecosystem agglomerations in the regions. Agglomerations are operationalised through the employment-based Location Quotients (LQ), measuring the relative specialisation of one region compared to the EU level, as well as the employment size.

If the LQ for a given activity-region combination is above 1.5, it is considered an agglomeration, and if the activity accounts for at least 1 % of total employment in the region, it is considered a regionally relevant agglomeration.[3] The following tables show the total number of regionally relevant specialisation agglomerations in each region in the country and identifies the top five most specialised of these agglomerations. The first table focuses on the 88 NACE 2-digit activities or sectors, totalling 44 in the country, while the second table is based on the 14 ecosystems, which total 9 in the country.

Table 1: Number of regionally relevant sectoral agglomerations and Top 5 agglomerations by region (NACE)

Region	Number of agglomerations	Agglomeration 1	Agglomeration 2	Agglomeration 3	Agglomeration 4	Agglomeration 5
HR02: Panonska Hrvatska	10	C16 - Manufacture of wood and of products of wood and cork, except furniture	A02 - Forestry and logging	A01 - Crop and animal production, hunting and related service activities	E38 - Waste collection, treatment and disposal activities	C31 - Manufacture of furniture
HR03: Jadranska Hrvatska	9	I55 - Accommodation	E38 - Waste collection, treatment and disposal activities	C23 - Manufacture of other non-metallic mineral products	C33 - Repair and installation of machinery and equipment	F41 - Construction of buildings
HR05: Grad Zagreb	10	J61 - Telecommunications	K65 - Insurance, reinsurance and pension funding, except compulsory social security	E38 - Waste collection, treatment and disposal activities	J62 - Computer programming, consultancy and related activities	F42 - Civil engineering
HR06: Sjeverna Hrvatska	13	C15 - Manufacture of leather and related products	C14 - Manufacture of wearing apparel	C16 – Manufacture of wood and of products of wood and cork, except furniture	E38 – Waste collection, treatment and disposal activities	C25 – Manufacture of fabricated metal products, except machinery and equipment

Source: ECCP (2023), own elaboration based on data from Eurostat.

[3] for more information on the methodology please see the methodology note: https://clustercollaboration.eu/in-focus/policy-acceleration/country-factsheets-on-cluster-policies-and-programmes (last access 09.01.2024).

As mentioned at the beginning of this Chapter, the NACE 2-digit activities have been aggregated to the 14 EU industrial ecosystems following the methodology established by the European Commission. Table 2 provides an overview of the regional distribution of industrial ecosystem agglomerations. Overall, there are fewer numbers of ecosystem agglomerations compared to the regionally relevant sectoral agglomerations by NACE sectors. This more concentrated agglomeration can at least partially be linked to the methodology of measurement of the 14 industrial ecosystems.

For the region "Sieverna Hrvatska" (HR06), the specialisation agglomerations are mainly characterised by the manufacturing sectors, such as manufacturing of leather and related products (C15), Manufacturing of wearing apparel (C14) and the manufacturing of wood products (C16). In the "Grad Zagreb" region (HR05) on the other hand, the specialisation agglomerations are mainly characterised by the service sector, with an ecosystem agglomeration in telecommunications (C61) and insurance reinsurance and pension funding (K65). In the Jadranska Hrvatska (HR03) region the strongest specialisation agglomeration is accommodation (I55) which indicates a strong tourism section while it is manufacturing of wood products (C16) in the Panonska Hrvatska region (HR02). Nonetheless, the agglomerations further underline the relative strength of the Croatian manufacturing, textile and tourism ecosystem as outlined before in Figure 1. Likewise, the strength of Croatian in the industrial ecosystem "Agri-Food", "Tourism" "Digital" and "Textile" is further underlined by the nodes presented in Table 2.

Table 2: Regionally relevant ecosystem agglomerations

Region	Number of ecosystems Agglomerations	Agglomeration 1	Agglomeration 2	Agglomeration 3
HR02: Panonska Hrvatska	3	Agri-Food	Textile	Energy Intensive Industries
HR03: Jadranska Hrvatska	1	Tourism	-	-
HR05: Grad Zagreb	2	Digital	Cultural and Creative Industries	-
HR06: Sjeverna Hrvatska	3	Textile	Agri-Food	Energy Intensive Industries

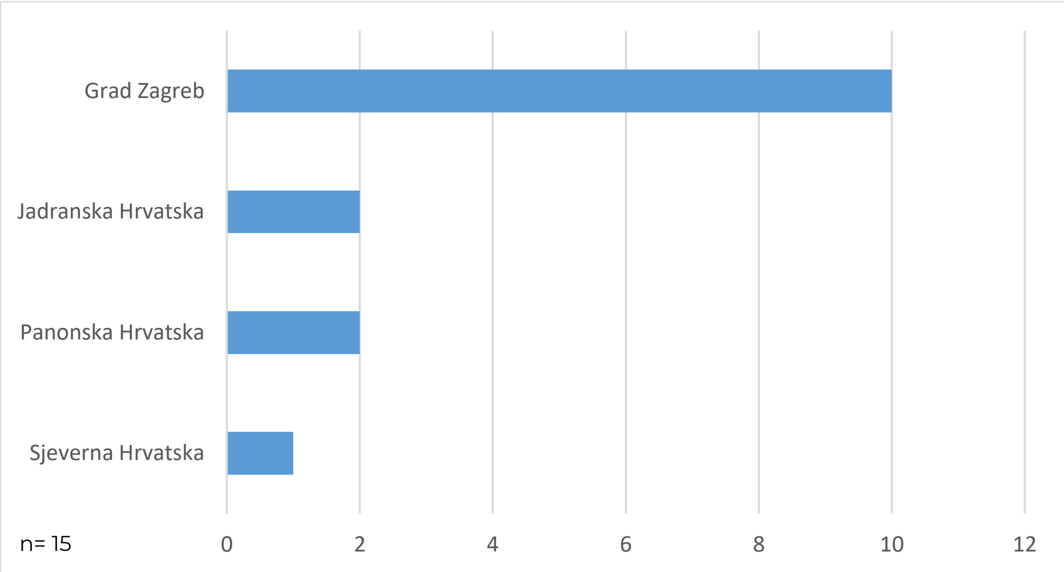
Source: ECCP (2023), own elaboration based on data from Eurostat.

2.3 Cluster organisations & interregional cooperation

Cluster organisations in the regions

There are 15 cluster organisations registered on the ECCP in the country. With 10 cluster organisations the majority of these registered cluster organisations is located in Zagreb. The following figure shows the presence of cluster organisations in the different regions.

Figure 2: Cluster organisations profiled on the ECCP



Source: ECCP (2023). Note: the data for the analysis was extracted on 21/12/2023.

The majority of member organisations of Croatian cluster organisations with profiles on the ECCP are composed of SMEs (70%, EU: 83%), followed by research organisations (17%, EU: 7%), and large enterprises (13%, EU: 9%). From a thematic perspective, these Croatian cluster organisations are operating in the following industrial ecosystems. Since not all cluster organisations on the ECCP provided this information, the number of cluster organisations with an allocated industrial ecosystem is lower than the overall number of cluster organisations in the country. In the case of Croatia, only two of the 15 cluster organisations provided the information on the ECCP website.

- Health (1 cluster organisation)
- Proximity & Social Economy (1 cluster organisation)

Cross-regional / international cooperation

In the 2014-2020 funding period[4], the European Cluster Partnerships and the INNOSUP-1 initiative have been launched by the European Commission to encourage clusters from Europe to intensify collaboration across regions and sectors. Croatian cluster organisations have not been involved in any consortia of the European Strategic Cluster Partnerships or the INNOSUP-1 initiative. In the 2021-2027 funding period, the Single Market Programme supports clusters as part of the Joint Clusters Initiatives (Euroclusters) for Europe's recovery. From Croatia, one cluster organisation is part of the Eurocluster LEVIATAD, specialising in the ecosystem "Aerospace & Defence", with partners from three countries (IT, FR, BE).

[4] Many of the programmes of the 2014-2020 funding period have been terminated by December 2023. However, the collaborative projects that were funded may continue to operate.

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National cluster policy, programmes and initiatives

3. National cluster policy, programmes and initiatives

In this section we provide an overview of the existing Croatian cluster policies on a national level, namely the first national strategy for cluster development, adopted in 2011 as well as the Croatian Competitiveness Clusters (CCCs) as part of the country's Smart Specialisation Strategy.

The breakdown is presented in the form of a table, with the first column showcasing information on the aspects which constitute the policy (beginning with 'Policy Objectives', following with 'Policy Focus', etc.). The second column represents the case of the Plans for Industrial Transition.

Within the table the text presented in bold (black) depicts standardised categories across country factsheets (56 in total for 2023), which are applied for comparative purposes. This is followed by a complementary descriptive text to provide more insights about the cluster policy in Croatia.

Table 3: Overview of Croatian cluster policy

Policy type:	Broad policy
Policy name:	Plans for Industrial Transition
POLICY OBJECTIVES	**Strengthening cooperation between companies or industry and RTDI actors** **Supporting internationalisation activities** **Fostering R&D activities, technology development and implementation** **Fostering innovation and strengthening innovation ecosystems** **Supporting cluster excellence and professionalisation of cluster management** **Supporting the consolidation of existing cluster organisations** **Supporting the creation of new cluster organisations** **Promoting entrepreneurship, start-ups and spin-offs** **Promoting employment and upgrading skills and competences** **Enhancing territorial cohesion (through RIS3)** **Strengthening the network of cluster organisations/cross-clustering**

Policy type:	Broad policy
Policy name:	Plans for Industrial Transition
	The Plans for Industrial Transition (PIT) and are regional development plans targeting Croatia's Pannonian, Northern and Adriatic regions which are lagging the EU average in terms of economic development. They are part of the Integrated Territorial Programme 2021-2027 which, in turn, is referring to the Croatian National Development Strategy 2030 (Strategic Goal 13: "Strengthening regional competitiveness"). One of the programmed interventions aims at innovation clusters, supporting their specialisation towards priority niches specified within Plans for industrial transition for each region with supporting action plans for 14 regional value chains (RVC). The main objective is to create effective regional innovation systems and to boost private sector R&I investment. To support this objective, the ITP envisages 17 'innovation clusters' until 2024 and 50 until 2029. It includes the creation of new as well as the upgrading of existing cluster organisations. Another objective is to support research and development including the research and technological infrastructure to enable entrepreneurs to diversify their business into the priority RVCs. There is also a skill development component to develop the workforce towards the RVC areas. Furthermore, internationalisation and integration of cluster-related activities into macro-regional strategies like the Strategy for the Danube Region is taken into account.
POLICY FOCUS	**Sectoral**
	The Plans for Industrial Transition define priority Regional Value Chains (RVC) for each of the three regions.

Pannonian RVCs	Northern RVCs	Adriatic RVCs
Agri-food	Smart industries	Blue growth
Smart and creative industries	Vehicle manufacturing	Smart industries
Green growth	Healthcare industry	Health
Continental tourism	Green growth	Green growth
	High value-added services	High value-added services

Policy type:	Broad policy
Policy name:	Plans for Industrial Transition
RESPONSIBLE AUTHORITIES	**Both drafting and implementation** **Oversees the implementation**
	The ITP 2021-2027 was drafted by the Ministry of Regional Development and EU Funds which is also overseeing its implementation. The PITs were drafted by regional bodies established for this purpose consisting of officials from regional and national governments as well as stakeholders from businesses, research and business associations.
BENEFICIARIES	**SMEs** **Cluster organisations** **Research organisations** **Academic institutions** **Start-ups** **Large firms**
	Through the Industrial transition of Croatian NUTS2 regions, support is also given to SMEs and innovative start-ups to transition towards the new niches defined within Plans for Industrial Transition. The ITP specifies the following main target groups: - Entrepreneurs (start-up companies, micro, small, medium and large enterprises) - Innovation clusters (cluster organisations) - Organisations for research and dissemination of knowledge - Public sector (regional and local self-government, departmental bodies of state administration, public enterprises) - Institutions engaged in R&D activities

Policy type:		Broad policy
Policy name:		Plans for Industrial Transition
INSTRUMENTS	**Financial**	**Funding collaboration initiatives** **Support to R&D projects, SMEs becoming cluster members, etc.** **Application to labelling schemes and similar initiatives** **Financing networking events** **Supporting market entry (e.g. testing, proof-of concept, prototyping, demonstration projects)** **Financing start-ups**
	Technical assistance	**Infrastructure: coworking spaces, offices, incubation and accelerator spaces, research centres, technology parks etc.** **Support for soft skills development: coaching, management training, upskilling/reskilling** **Support for networking and partnership building (at national and/or international level)** **Marketing activities: advertising, communication, events, fairs, and so on**
	Explanation	Under Specific objective 1.1, support instruments focus on strategic partnerships for innovation, consisting of consortia of at least three partners of which at least two are SMEs and, if necessary, partners from the research or the public sector. They receive grants for research and development (industrial research, prototyping, feasibility studies) and support for the development of research and technological infrastructure enabling businesses to diversify their business and to develop new products. Furthermore, calls for innovation clusters shall foster the networking of stakeholders within regional value chains through investment grants for the construction or upgrading of innovation clusters and through operational grants aimed at training and internationalisation of cluster members. Under Specific objective 1.3 there is support through financial instruments for the commercialisation of innovation and the transition to the production of new products of higher added value. De minimis grants support innovative start-up companies and SMEs in the diversification and modernisation of production, introduction of new quality standards and internationalisation. Additionally, there is support for the branding and internationalisation of regional ecosystems.

Policy type:		Broad policy
Policy name:		Plans for Industrial Transition
		Another area of support is the provision of business infrastructure. In rural areas it shall be specialised on SMEs and the local economy. In urban areas it focuses on business support centres, business incubators/accelerators, coworking spaces, centres of creative industries, etc., in order to establish urban areas as regional centres and strengthening their role in regional ecosystems.
HISTORY	**Period**	**Limited period**
	Ending year *(for policies with limited period)*	2029
	Starting year	2021
	Explanation	The Plans for Industrial Transition are settled within the ITP 2021-2027. Programmes will run until 2029.
BUDGET	**Overall**	EUR 330 million under Specific objective 1.1 and EUR 191 million under Specific objective 1.3 of which EUR 10 million (under 1.1) are reserved for the support of innovation clusters.
	Annual	-
	Source of funding	ITP 2021-2027, cluster organisations are supported under Objective 1.1, measure 26 “Support for innovation clusters, including between business entities, research organisations and public bodies and business networks primarily for the benefit of SMEs“ (see page 30).

Policy type:		Broad policy
Policy name:		Plans for Industrial Transition
POLICY EVALUATION	Availability	**No policy evaluation.**
	Results	The ITP 2021-2027 is building on evaluations of past policy evaluations including the mid-term evaluation of the Smart Specialisation Strategy (2016-2020) and policy notes prepared by the World Bank in the process of drafting the National Development Strategy 2030. The ITP 2021-2027 draws on the monitoring and evaluation system established in 2018 for the Smart Specialisation Strategy. An evaluation plan for the Partnership Agreement in general and the ITP in particular will be prepared.
POLICY ALIGNMENT WITH THE EU PRIORITIES		**Green economy** **Digitalisation**

04

State of cluster policy and its role in broader economic policy challenges

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4. State of cluster policy and its role in broader economic policy challenges

4.1 The state of cluster policy

This section presents an overview on the state of play of Croatian cluster policy in the form of a qualitative assessment across four categories of analysis – policy scope, continuity of cluster policies, evidence of performance, and the range of cluster support instruments. Please refer to the Annex for the detailed overview of the categories and the scoring system.

The table below presents an overview of **the state of play of Croatian cluster policy** for 2023.

Table 4: State of play

Croatia	State of play
POLICY SCOPE	Absence of cluster policy
	Broad policy
	Sectoral policy
	National and/or regional cluster policy
CONTINUITY	No cluster-specific policy available
	Cluster policy established recently
	Cluster policy established between over 2 and 10 years
	Cluster policy established over 10 years ago
EVIDENCE OF PERFORMANCE	No evaluation and / or monitoring available
	Existence of evaluations of past policies
	Existence of monitoring or an ongoing / interim evaluation
	Existence of monitoring and ex-ante or ongoing / interim evaluation
CLUSTER SUPPORT INSTRUMENTS	No instruments for cluster development
	Financial support for cluster development in the broader and / or sectoral policy
	Financial or technical support for cluster development in dedicated cluster policy
	Financial and technical support for cluster development in dedicated cluster policy

Source: ECCP (2023).

The text below provides a **qualitative description** of the state of play of the cluster policy in Croatia.

Policy scope

The Plans for Industrial Transition (PIT) and are regional development plans targeting Croatia's Pannonian, Northern and Adriatic regions which are lagging the EU average in terms of economic development. They are part of the Integrated Territorial Programme 2021-2027 which, in turn, is referring to the Croatian National Development Strategy 2030 (Strategic Goal 13: "Strengthening regional competitiveness"). One of the programmed interventions aims at innovation clusters, supporting their specialisation towards priority niches specified within Plans for Industrial Transition for each region with supporting action plans for 14 regional value chains (RVC).

The main objective is to create effective regional innovation systems and to boost private sector R&I investment. To support this objective, the ITP envisages 17 'innovation clusters' until 2024 and 50 until 2029. It includes the creation of new as well as the upgrading of existing cluster organisations. Another objective is to support research and development including the research and technological infrastructure to enable entrepreneurs to diversify their business into the priority RVCs. There is also a skill development component to develop the workforce towards the RVC areas. Furthermore, internationalisation and integration of cluster-related activities into macro-regional strategies like the Strategy for the Danube Region is taken into account.

Continuity

The cluster development policy started in Croatia in 2011, when the Cluster development strategy in the Republic of Croatia 2011-2020 was adopted. In 2016, as part of the Croatian Smart Specialisation Strategy, Croatia introduced the concept of competitiveness clusters as important policy tools for smart specialisation of the country. Croatian Competitiveness clusters' (CCCs) main goal is to strengthen national industries/ sectors. 13 CCCs have been created in the automotive, wood-processing, food-processing industry, defence, chemical, electro and production machinery and technologies, ICT, maritime, construction, textile, health, personalised medicine, creative and cultural industries.

The Croatian Competitiveness Clusters programme was not prolonged after 2020. Instead, the Integrated Territorial Partnership 2021-2027 has taken up cluster development as part of its mission.

Evidence of performance

There is no official evaluation of the Croatian cluster development policy available.

In a survey study Anić et al. (2019) followed up on the top-down Croatian Competitiveness Clusters (CCC) policy that was created to support cluster development and smart specialisation from 2016 onwards. Although only capturing its early-stage outcomes, it confirms the problems analysed by previous studies. Evaluating the feedback of 250 cluster members from 13 CCCs, the authors finds that the "perceived performance of CCC is very low" and "the members of CCC have not been able [...] to see any value of their participation in CCC" (p. 2242). Reasons are both the structural problems of low innovation activity and productivity as described by Bečić and Švarc (2015) and the crucial institutional problem of low level of trust between key actors as argued by Dragičević and Obadić (2014). On top of that, business support and programme management were weak and there was only limited commitment and involvement by the participants. Finally, the programme lacked sufficient funding to build sufficient capacities.

Cluster support instruments

Under Specific objective 1.1, support instruments focus on strategic partnerships for innovation, consisting of consortia of at least three partners of which at least two are SMEs and, if necessary, partners from the research or the public sector. They receive grants for research and development (industrial research, prototyping, feasibility studies) and support for the development of research and technological infrastructure enabling businesses to diversify their business and to develop new products.

Furthermore, calls for innovation clusters shall foster the networking of stakeholders within regional value chains through investment grants for the construction or upgrading of innovation clusters and through operational grants aimed at training and internationalisation of cluster members.

Under Specific objective 1.3 there is support through financial instruments for the commercialisation of innovation and the transition to the production of new products of higher added value. De minimis grants support innovative start-up companies and SMEs in the diversification and modernisation of production, introduction of new quality standards and internationalisation. Additionally, there is support for the branding and internationalisation of regional ecosystems.

Another area of support is the provision of business infrastructure. In rural areas it shall be specialised on SMEs and the local economy. In urban areas it focuses on business support centres, business incubators/accelerators, coworking spaces, centres of creative industries, etc., in order to establish urban areas as regional centres and strengthening their role in regional ecosystems.

4.2 Cluster policy's potential impact on challenges identified in the European Semester Report

Cluster policy can provide important support to broader economic policy efforts. This section shows how Croatian clusters (can) play a role in addressing the challenges identified in the European Semester Report for the country. To this end, the European Semester 2023 country report for Croatia[5] has been analysed across policy areas relevant to cluster policy. The results point to a series of issues where cluster policy could play an important role in tackling the country's economic challenges.

The table below also outlines how Croatian cluster organisations are already addressing the challenges outlined in the European Semester Reports in the absence of a dedicated cluster policy. Developing a dedicated cluster policy could further strengthen and focus the activities of Croatian cluster organisations towards broader economic policy challenges.

Table 5: Contribution of Croatian cluster policy to the challenges identified in the European Semester Reports

Policy area	Challenges	Cluster policy
INNOVATION	• Meeting spending targets on R&D&I • Addressing the fragmentation of the research sector	The programme for the European Union funds investment emphasises the importance of a strong **innovation ecosystem**. The programme also encourages cooperation between companies, research organisations and public authorities to strengthen the innovation ecosystem. To this end, the programme provides support to innovation clusters. Clusters can indeed play an important role in facilitating the transfer of technology.[6] In that regard, the various

[5] https://economy-finance.ec.europa.eu/document/download/ca39aba8-9b5d-4c6c-b3d0-6bf365a6ec47_en?filename=HR_SWD_2023_611_en.pdf (last access 02.05.2024)
[6] Fioravanti, V.; Stocker, F.; Macau, F. (2023).

Policy area	Challenges	Cluster policy
		Croatian cluster organisations are strongly focusing on facilitating R&D projects. For instance, the Croatian Maritime Innovation Cluster MARINN acts as a business platform for the preparation of collaborative R&D projects.[7] One of these project examples is the Hydrogen powertrain project, that develops ships and propulsion systems based on green hydrogen.[8] Moreover, the literature points out that the presence of clusters is positively linked to higher investments for research and development both in the public and especially the private sector.[9]
SKILLS	• Lack of up- and reskilling measures • Skill mismatches	Regarding skill development, the programme for the European Union funds investment aims to improve **skills** and **competences**, in which clusters have the potential to offer a significant contribution. Research underlines the role of clusters in developing the skills of the workforce and attracting skilled workers to a region.[10] In this context, the Crotian cluster Cedra can be pointed out, as they aim to meet the needs of organisations from the Western Balkans region working with young people through their BC4ESE project that builds capacities for the promotion of eco-social entrepreneurship and the development of non-formal education tools and methodologies.[11] More generally, as cluster organisations act as intermediaries between companies and research and educational institutions, they can also be seen as part of the training and educational infrastructure in the innovation ecosystem.[12]
GREEN TRANSITION	• Decarbonising the energy and transport sectors • Developing of renewable energy sources and stepping up the performance in energy efficiency of buildings • Reinforcing investment in the railway sector and incentivising the use	In order to support the **green transition** of the country, the programme for the European Union funds investment 2021-2027 aims to support the technology transfer between companies, research centres and universities with a focus on low-carbon resilience of the economy and climate change and adaptation. As facilitators of technology transfer, clusters are assigned an important role in supporting the green transition. As facilitators of technology transfer, clusters are assigned an important role in supporting the green transition. Clusters in Croatia are addressing the recommendations mentioned by the European Semester Report. For instance, the Intermodal Transport Cluster aims to promote innovative green intermodal freight transport corridors through

[7] see https://marinn.co/about.html (last access 30.04.2024)
[8] see https://marinn.co/projects.html (last access 30.04.2024).
[9] ECCP (2022).
[10] Hsu, M.-S et al. (2014).
[11] see https://www.cedra.hr/projekti/ (last access 30.04.2024).
[12] European Expert Group on Clusters (2020).

Policy area	Challenges	Cluster policy
	of clean vehicles	proposing new policies and strategies as part of its GIFT project.[13] Studies also show that clusters can play a vital role in the green transition of the economy[14] and it can be underlined that cluster organisations have a positive influence on the green transition, not least because they facilitate exchange between different actors, disseminate relevant knowledge and practices and deepen environmental awareness among stakeholders.[15]

Source: ECCP (2023).

[13] see https://shortsea.hr/en/-- (last access 30.04.2024)
[14] Lis, A. & Mackiewicz, M. (2023); ECCP (2021).
[15] Hatch et al. (2017).

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Annex

Table 5: Analytical framework for the state of cluster policy

Criterion	Description	Categorial variables
Policy scope	assessment whether the country has a dedicated cluster policy, or cluster creation and/or development is targeted through broader policies, e.g. foreign trade policies, labour and social policies or specific sectoral policies, e.g. industrial policy tourism policies, agriculture policies	**absence of cluster policy** **existence of broader policies** **existence of specific sectoral policies** **existence of targeted cluster policies**
Continuity of cluster policies	assessment of the duration and experience of the country in carrying out cluster policies. This criterion assesses only existence of targeted cluster policies and not broader policies or sectoral policies	**absence of policies supporting cluster development** **cluster policy established recently (within the last 2 years)** **cluster policy established between over 2 and 10 years** **cluster policy established over 10 years ago**
Evidence of performance	assessment whether there are evaluations of past and ongoing policies and a monitoring system in place. The existence of monitoring and evaluation mechanisms determines the degree of policy development in the country	**no evaluation and / or monitoring available** **existence of evaluations of past policies, e.g. ex-ante** **existence of monitoring or an ongoing / interim evaluation** **existence of monitoring and ex-ante or ongoing / interim evaluation**
Cluster Support Instruments	assessment whether the policies provide any instruments to support the policy implementation, being these financial and/or technical support	**no instruments for cluster development** **financial support for cluster development in the broader and / or sectoral policy** **financial or technical support for cluster development in dedicated cluster policy** **financial and technical support for cluster development in dedicated cluster policy**

Source: ECCP (2023).