EUROPEAN CLUSTER COLLABORATION PLATFORM

Country factsheet

Poland

An initiative of the European Union

LEGAL NOTICE

Content

01

Introduction and economic policy context

1. Introduction and economic policy context

This document presents an overview of the cluster policy in Poland. 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 for Poland.

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 Poland's cluster policy can help to tackle the economic policy challenges identified in the European Semester country recommendations.**

The COVID-19 pandemics has caused an unprecedented economic shock to the European and global economy. 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. The measures of Poland's Recovery and Resilience Plan[1] are built on six pillars: green transition, digitalisation, health, competitiveness and innovation, sustainable transport, and the quality of institutions, whereby clusters have been included in the National Recovery and Resilience Plan in relation to the goal of increasing the use of renewable energy sources. In addition to pandemics, the ongoing Russian military aggression on Ukraine has also taken its toll on EU companies and industrial ecosystems, highlighting the significance of policy efforts in supporting SMEs and clusters.

Polish's Operational Programme ERDF 2021-2027 mentions clusters as one of the institutions that help to strengthen the potential of business environment, and thus will be included in supporting projects that are of strategic importance for the Polish economy. In addition, Polish's Internationalisation of the Key National Cluster Programme is focused on the increase of the competitiveness and boosting scale up of SMEs, support the internationalisation activities and on the enhancement of the visibility of clusters. In addition, the Key National Clusters initiative deals with strengthening the cooperation between companies or industry and RTDI actors, supporting internationalisation activities, fostering R&D activities, technology development and innovation, as well as supporting cluster excellence and professionalisation of cluster management.

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

1) an overview of the industrial ecosystems and cluster landscape in Poland,
2) an overview of the national cluster policies and an insight into the regional 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.

[1] Krajowy Plan Odbudowy - Krajowy Plan Odbudowy - Portal Gov.pl (www.gov.pl)

02

Industrial ecosystems and cluster landscape

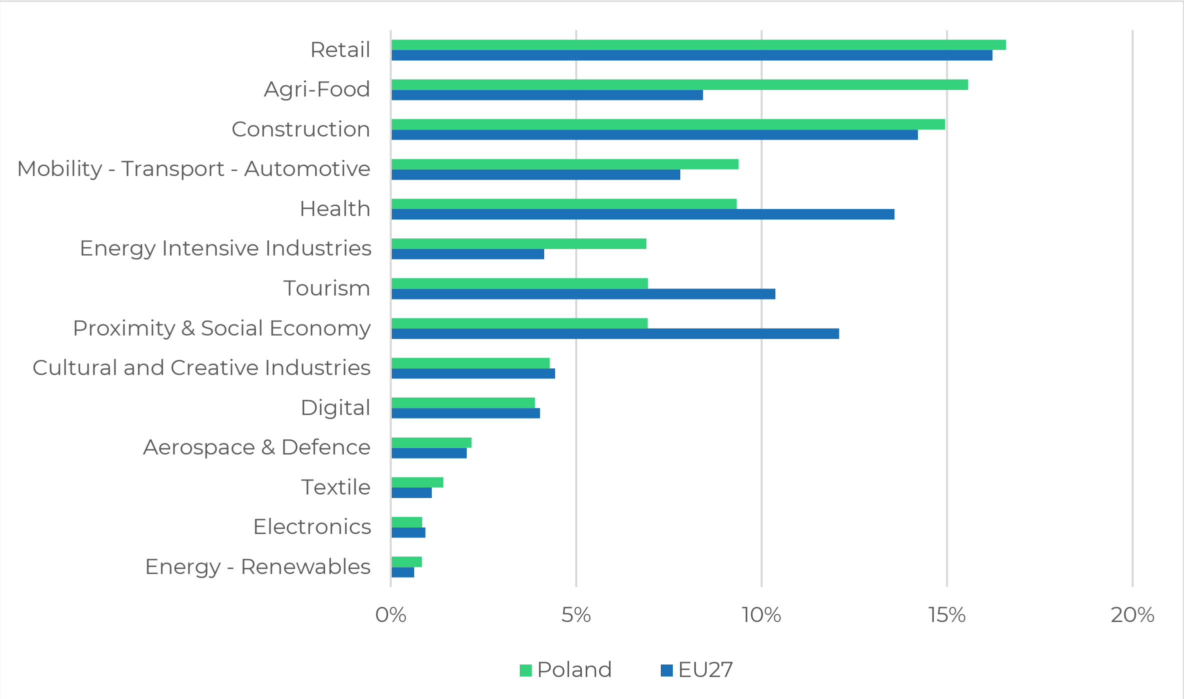
2. Industrial ecosystems and cluster landscape

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.[2] The classification of the 14 industrial ecosystems have been calculated by aggregating NACE 2-digit activities, following the methodology established in the European Commission.[3] 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 the following figure, the employment share of the region and the EU27 on average in each industrial ecosystem is shown relative to the number of employed persons in the 14 industrial ecosystems. 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. When looking at the Polish employment in the ecosystems, a strong focus on Agri-food, Mobility-Transport-Automotive and Energy Intensive Industries becomes visible which are above the EU27. In the employment ecosystems Health, Proximity & Social Economy, and Tourism, the employment share remains significantly under the EU27 average. However, Poland shows slightly above-average employment shares in the Retail, Construction, Aerospace & Defence, Textile, and Energy-Renewables.

Figure 1: Employment across the ecosystems



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

[2] see here for more information https://clustercollaboration.eu/in-focus/industrial-ecosystems (last access 09.01.2024).
[3] see European Commission (2022): Annual Single Market Report, SWD(2022).

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.[4] The following tables shows 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 149 in the country, while the second table is based on the 14 ecosystems, which total 36 in the country.

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

Region	# of aggl.	Agglomeration 1	Agglomeration 2	Agglomeration 3	Agglomeration 4	Agglomeration 5
PL21: Małopolskie	7	C16 - Manuf. of wood products	A01 - Crop & animal production	F41 - Construction	F42 - Civil engineering	J62 - Computer programming, consultancy
PL22: Śląskie	11	B05 - Mining of coal & lignite	C24 - Manuf. of basic metals	C29 - Manuf. of motor vehicles & trailers	C22 - Manuf. of rubber & plastic products	C33 - Repair, installation of machinery
PL41: Wielkopolskie	9	C31 - Manuf. of furniture	C16 - Manuf. of wood products	A01 - Crop & animal production	C22 - Manuf. of rubber & plastic products	C10 - Manuf. of food products
PL42: Zachodniopomorskie	12	C16 - Manuf. of wood products	C33 - Repair, installation of machinery	C31 - Manuf. of furniture	H52 - Warehousing and support activities for transportation	C22 - Manuf. of rubber & plastic products
PL43: Lubuskie	8	C31 - Manuf. of furniture	C16 - Manuf. of wood products	C17 – Manuf. of paper and paper products	C23 - Manuf. of other non-metal mineral products	H49 – Land transport and pipelines
PL51: Dolnośląskie	9	B07 - Mining of metal ores	C29 - Manuf. of motor vehicles & trailers	C27 - Manuf. of electrical equipment	C22 - Manuf. of rubber & plastic products	C31 - Manuf. of furniture
PL52: Opolskie	14	C31 - Manuf. of furniture	C16 - Manuf. of wood products	C23 - Manuf. of other non-metal mineral products	C27 - Manuf. of electrical equipment	C25 - Manuf. of fabricated metal products
PL61: Kujawsko-pomorskie	9	C17 - Manuf. of paper products	C31 - Manuf. of furniture	A01 - Crop & animal production	C22 - Manuf. of rubber & plastic products	C25 - Manuf. of fabricated metal products
PL62: Warmińsko-mazurskie	7	C31 - Manuf. of furniture	C16 - Manuf. of wood products	A01 - Crop & animal production	C22 - Manuf. of rubber & plastic products	C23 - Manuf. of other non-metal mineral products
PL63: Pomorskie	9	C26 - Manuf. of computer, electronic & optical products	C33 - Repair, installation of machinery	C16 - Manuf. of wood products	C31 - Manuf. of furniture	F42 - Civil engineering
PL71: Łódzkie	9	C14 - Manuf. of wearing apparel	C13 - Manuf. of textiles	A01 - Crop & animal production	C31 - Manuf. of furniture	C23 - Manuf. of other non-metal mineral products
PL72: Świętokrzyskie	7	A01 - Crop & animal production	C23 - Manuf. of other non-metal mineral products	D35 – Electricity, gas & steam	F42 - Civil engineering	C25 - Manuf. of fabricated metal products

[4] 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 09.01.2023).

PL81: Lubelskie	5	A01 - Crop & animal production	C31 - Manuf. of furniture	F42 - Civil engineering	C10 - Manuf. of food products	H49 – Land transport and pipelines
PL82: Podkarpackie	11	C30 - Manuf. of other transport equipment	C31 - Manuf. of furniture	C16 - Manuf. of wood products	C22 - Manuf. of rubber & plastic products	C23 - Manuf. of other non-metal mineral products
PL84: Podlaskie	8	A01 - Crop & animal production	C16 - Manuf. of wood products	C31 - Manuf. of furniture	C10 - Manuf. of food products	C22 - Manuf. of rubber & plastic products
PL91: Warsaw-Capital	8	J61 - Telecommunications	M73 - Advertising & market research	K64 - Financial services	K65 - Insurance, pension funding	N80 - Security and investigation activities
PL92: Mazowieckie-Regional	6	A01 - Crop & animal production	C10 - Manuf. of food products	D35 – Electricity, gas & steam	H49 - Land transport and transport via pipelines	C25 - Manuf. of fabricated metal products

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

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. Poland's ecosystem agglomerations are heavily focused on energy-intensive industries and agri-food, which can be found – often even combined – in the majority of Polish regions. This is reflected in the prevalence of NACE agglomerations in sectors like wood and furniture industries (C16, C31) and agricultural and food production (A01, C10) or mining (B05, B07), and diverse manufacturing sectors, e.g., the manufacturing of non-metal mineral products (C23), of fabricated metal products (C25) and of rubber and plastic products (C22) as it can be seen in Table 1. This explains the high concentration in the employment ecosystems agri-food and energy-intensive industries found in Figure 1.

In Table 2, some specific agglomerations exist in several regions. Łódzkie (PL71), for example, hosts a distinct textile ecosystem agglomeration which is also clearly reflected in the NACE agglomerations as the manufacture of wearing apparel and textiles (C13-14). Śląskie (PL22) and Dolnośląskie (PL51) exhibit agglomerations in the mobility-transport-automotive ecosystem, whereby this is supported by NACE agglomerations in the manufacture of motor vehicles (C29) in both regions. The capital region of Warsaw (PL91) is an outlier with a focus on digital, cultural/creative and aerospace/defence ecosystems. These are echoed in the NACE agglomerations in telecommunications (J61) for the first, advertising and market research (M73) for the second, and security and investigation activities (N80) for the third ecosystem. It can be seen that most of the other regionally relevant ecosystems agglomerations in Table 2 are focused on agri-food and energy-intensive industries which is in line with the regionally relevant sectoral agglomerations from Table 1 and the employment ecosystems in Figure 1. This highlights the strength of these sectors and its importance for the polish economy.

Table 2: Regionally relevant ecosystem agglomerations

Region	Number of ecosystem aggl.	Agglomeration 1	Agglomeration 2	Agglomeration 3	Agglomeration 4
PL21: Małopolskie	2	Agri-Food	Energy-intensive industries	-	-
PL22: Śląskie	3	Energy-intensive industries	Energy-renewables	Mobility-Transport-Automotive	-
PL41: Wielkopolskie	2	Agri-Food	Energy-intensive industries	-	-
PL42: Zachodniopomorskie	1	Energy-intensive industries	-	-	-
PL43: Lubuskie	2	Energy-intensive industries	Mobility-Transport-Automotive	-	-
PL51: Dolnośląskie	3	Energy-renewables	Energy-intensive industries	Mobility-Transport-Automotive	-
PL52: Opolskie	4	Energy-intensive industries	Energy-renewables	Agri-Food	Mobility-Transport-Automotive
PL61: Kujawsko-pomorskie	2	Agri-Food	Energy-intensive industries	-	-
PL62: Warmińsko-mazurskie	2	Agri-Food	Energy-intensive industries	-	-
PL63: Pomorskie	2	Electronics	Aerospace & Defence	-	-
PL71: Łódzkie	3	Textile	Agri-Food	Energy-intensive industries	-
PL72: Świętokrzyskie	2	Agri-Food	Energy-intensive industries	-	-
PL81: Lubelskie	1	Agri-Food	-	-	-
PL82: Podkarpackie	2	Energy-intensive industries	Agri-Food	-	-
PL84: Podlaskie	1	Agri-Food	-	-	-
PL91: Warsaw-Capital	3	Digital	Cultural and creative industries	Aerospace & Defence	-
PL92: Mazowieckie-Regional	1	Agri-Food	-	-	-

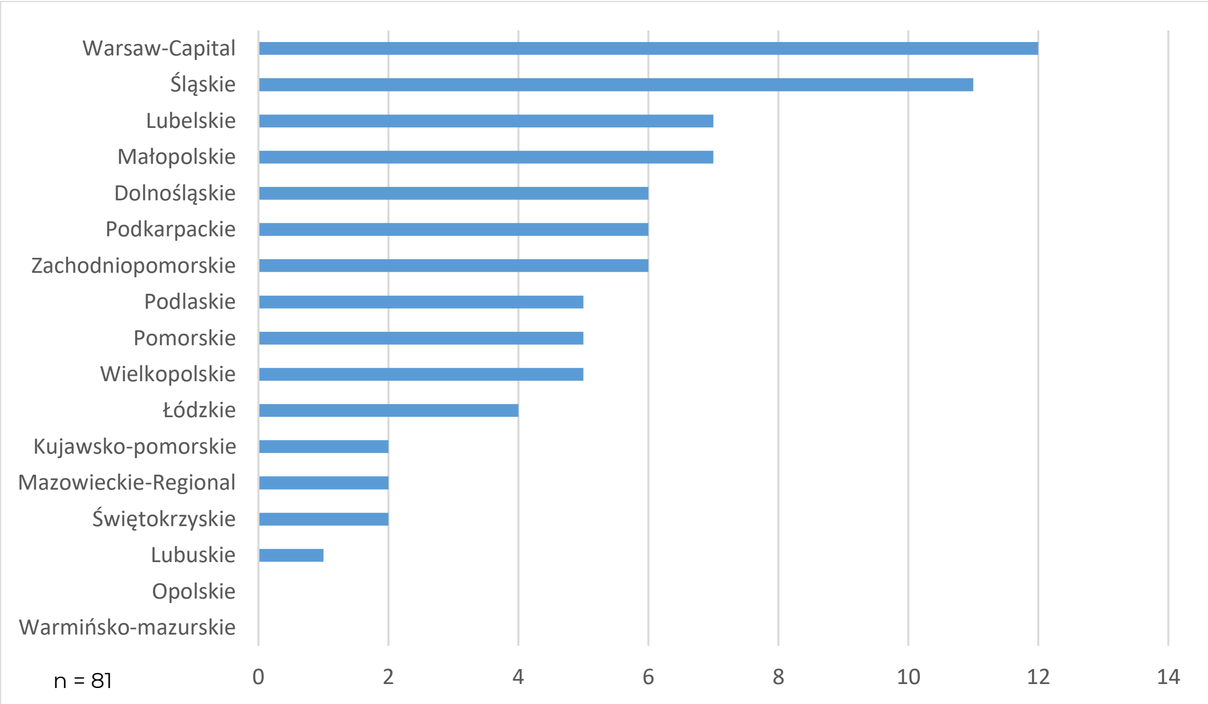
Source: ECCP (2023), own elaboration based on data from Eurostat.

2.3 Cluster organisations & interregional cooperation

Cluster organisations in the regions

There are 81 cluster organisations registered on the ECCP from Poland. The region with the most registered cluster organisations is the Warsaw capital region (12 cluster organisations) followed by Śląskie (11 cluster organisations) and Lubelskie and Małopolskie (7 cluster organisations each). Notably, Opolskie, the region with the most NACE sectorial agglomerations, has no registered cluster organisations on the ECCP at all, while its neighbouring region of Śląskie leads the ranking. 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.

SMEs (80%, EU: 83%) followed by large enterprises (11%, EU: 9%) and research organisations (9%, EU:8%) constitute the majority of member organisations of Polish cluster organisations with profiles on the ECCP. From a thematic perspective, these Polish 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. The list of cluster organisations highlights that agri-food and energy-intensive industries are less represented in the cluster landscape compared to digital or renewable energy even though they represent higher concentrations in employment and are responsible for the most relevant ecosystem agglomerations.

- Digital (9 cluster organisations)
- Renewable Energy (9 cluster organisations)
- Construction (6 cluster organisations)
- Agri-food (5 cluster organisations)
- Aerospace & Defence (4 cluster organisations)

- Mobility-Transport-Automotive (4 cluster organisations)
- Health (3 cluster organisations)
- Energy Intensive Industries (2 cluster organisations)
- Creative & Cultural Industries (2 cluster organisations)
- Textile (1 cluster organisation)

When comparing common agglomerations of cluster organisations registered on the ECCP and regionally relevant specialisation agglomerations, a certain difference becomes visible. While Polish regions are mainly focusing on the fields of Agri-food (8 regions) and Energy Intensive Industries (5 regions), Polish cluster organisations registered on the ECCP are mainly active in the ecosystems Digital, Renewables-Energy, and Construction.

Interregional cooperation

Polish cluster organisations have been involved in 29 consortia of the European Strategic Cluster Partnerships out of which 13 partnerships were focused on internationalisation (ESCP-4i), 12 partnerships were on cluster management excellence (ESCP-4x) and 4 partnerships were focused on smart specialisation (ESCP-S3). Consortia partners came from 21 different states (DK, FR, ES, RO, PT, IT, EL, RS, DE, BE, BG, CZ, FI, IE, HU, LV, LT, UK, EE, SI, NL). 16 Polish cluster organisations participated in the INNOSUP-1 initiative with partner organisations coming from 27 countries (IL, ES, FR, DE, DK, NL, CZ, IE, BE, PT, IT, SI, NO, HU, EE, LV, RO, AT, SE, UK, EL, IS, RS, LT, FI, BG, GR).[5]

In the 2021-2027 funding period, the Single Market Programme supports clusters as part of the Joint Cluster Initiatives (Euroclusters) for Europe's recovery. From Poland, 8 clusters are part of 8 Euroclusters with partners from 19 countries (AT, BE, CZ, DE, DK, EE, ES, FI, FR, GR, HU, IT, LT, LV, NL, NO, PT, RO, SE). These Euroclusters are AIBC Eurocluster, BioMan4R2, DESIRE, ELBE Eurocluster, GEMSTONE, INGENIOUS, METASTARS and SUAVE. Collectively, they cover seven industrial ecosystems, with "Health", "Renewables", "Aerospace and defence", "Agri-food", "Energy-intensive industries", "Mobility, transport and automotive" and "digital industries".

[5] 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

03

National cluster policy, programmes and initiatives

3. National cluster policy, programmes and initiatives

In this section, we provide an overview of the existing cluster policies in Poland on a national as well as an example of the regional level cluster policy. 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 and third column represents the case of Polish national cluster policies, whilst the fourth represents an exemplary regional cluster policy in Poland. This factsheet showcases an example of a regional broad policy in Poland for one of 16 Polish regions: Mazovia Region.

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 Poland.

Table 3: Overview of Polish cluster policy

Policy type:	National cluster policy	National cluster policy	Regional broad policy
Policy name:	Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
POLICY OBJECTIVES	**Increasing competitiveness and boosting scale up of SMEs** **Supporting internationalisation activities** **Enhancing the visibility of clusters** **Fostering R&D activities, technology development and implementation** **Supporting cluster excellence and professionalisation of cluster management** **Promoting entrepreneurship, start-ups and spin-offs** **Strengthening the network of cluster organisations/cross-clustering**	**Strengthening cooperation between companies or industry and RTDI actors** **Increasing competitiveness and boosting scale up of SMEs** **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** **Promoting entrepreneurship, start-ups and spin-offs**	**Strengthening cooperation between companies or industry and RTDI actors** **Increasing competitiveness and boosting scale up of SMEs** **Supporting internationalisation activities** **Fostering R&D activities, technology development and implementation** **Fostering innovation and strengthening innovation ecosystems** **Promoting entrepreneurship, start-ups and spin-offs**

Policy type:	National cluster policy	National cluster policy	Regional broad policy
Policy name:	Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
		Promoting employment and upgrading skills and competences **Strengthening the network of cluster organisations/cross-clustering**	**Strengthening the network of cluster organisations/cross-clustering**
	The aim of the Internationalisation of National Key Clusters competition is to finance comprehensive services supporting the adaptation and introduction or strengthening of the cluster's offer or products on foreign markets, with particular emphasis on technologically advanced products and support of SMEs.	The main purpose is to increase the competitiveness and innovation of SMEs and enhance their cooperation with the R&D sector across various industries. This will help with creating new technologies via establishing cooperation between enterprises, research institutions, business environment institutions, non-governmental organisations and local authorities.	The support for regional cluster development is in line with the strategic and development goals of the Development Strategy for the Mazowieckie Voivodeship until 2030. The development of clusters is mainly focused on the development of enterprises within the cluster and enhancing innovation, including the creation of new companies and their internationalisation (e.g. in the form of foreign investments). The regional cluster strategy of Mazowsze is in line with goals of the national intelligent specialisation programme: research and development (R&D) activity, support for the international expansion of enterprises, improving the quality of human capital in enterprises, stimulating industry cooperation, creation of new enterprises. The support will cover key clusters/cluster initiatives that are in line with the selected smart specialisation areas of the region.
	No specific focus	**Cross-sectoral**	**Cross-sectoral**

Policy type:	National cluster policy	National cluster policy	Regional broad policy
Policy name:	Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
POLICY FOCUS	The policy does not focus on one specific sector but promotes internationalisation of various sectors.	The policy does not focus on one specific sector but rather focuses on the cross-sectoral cooperation between various actors of KKKs.	An important element of the Regional Innovation Strategy of Mazowsze is to increase competitiveness of the region through cooperation between clusters operating within the same industrial areas across various geographical locations. The result of such cooperation are often the so-called meta-clusters internationally across key industries, leading to increase the competitiveness of Central Europe. The following clusters are key for the region: ICT, medical sector, construction sector, renewable energy and energy efficiency.
RESPONSIBLE AUTHORITIES	**Drafting as well as implementation** **The provision of funding** **The oversight of implementation**	**Drafting as well as implementation** **The provision of funding** **The oversight of implementation**	**Drafting as well as implementation** **The provision of funding** **The oversight of implementation**
	Ministry of Development and Technology, through the Smart Growth Operational Programme is the main responsible authority and funding source. Polish Agency for Enterprise Development (PARP) is involved in the evaluation of proposals and selection of the candidates of the competitions.	Ministry of Development and Technology as the main responsible authority and funding source, as well as the selection of Key National Clusters.	Local authorities of the Mazowieckie Voivodeship, Mazovian Innovation Council
	Cluster organisations (National Key Clusters and their members)	**SMEs**	**SMEs**

Policy type:	National cluster policy	National cluster policy	Regional broad policy
Policy name:	Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
BENEFICIARIES	**SMEs**	**Cluster organisations** **Research organisations** **Start-ups** **Business associations** **Technology centres** **Policy makers**	**Cluster organisations** **Start-ups**
	The programme is dedicated to organisations that have the status of Key National Clusters. Organisations can participate through their cluster coordinator or as an individual cluster member implementing a project.	The competition is dedicated to clusters that are applying for renewal of the KKK status and clusters applying for obtaining a status of the KKK. The cluster is a source of benefits and creates a new value for all types of entities participating in the cluster, such as enterprises, universities and other scientific units, business environment institutions, public administration, and other supporting organisations.	Support for the cluster initiative takes place on two levels: Level 1: support aimed at cluster coordinators in order to increase the internationalisation and innovation of clusters and to strengthen their competitiveness in the process of applying for international support instruments. At this level, the aid will focus on soft projects, with no possibility of co-financing the purchase of fixed assets (or only in the minimum amount). Level 2: support for entrepreneurs included in the cluster for the implementation of projects aimed at achieving a specific market effect; the support will not include activities in the field of strengthening the cluster organisation, appropriate for Level 1.

Policy type:		National cluster policy	National cluster policy	Regional broad policy
Policy name:		Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
INSTRUMENT	**Financial**	**Subsidies to hire personnel** **Subsidies for cluster infrastructure (e.g. offices, equipment)** **Financing networking events** **Supporting market entry (e.g. testing, proof-of concept, prototyping, demonstration projects)**	**Funding collaboration initiatives** **Support to R&D projects, SMEs becoming cluster members, etc.** **Application to labelling schemes and similar initiatives** **Subsidies for cluster infrastructure (e.g. offices, equipment)** **Financing networking events** **Supporting market entry (e.g. testing, proof-of concept, prototyping, demonstration projects)** **Financing start-ups** **Innovation: voucher, support to hire PhDs, cooperation with R&I actors**	**Funding collaboration initiatives** **Support to R&D projects, SMEs becoming cluster members, etc.** **Subsidies for cluster infrastructure (e.g. offices, equipment)** **Financing networking events** **Innovation: voucher, support to hire PhDs, cooperation with R&I actors**
	Technical assistance	**Support for hard skill development: knowledge transfer, intellectual property, entrepreneurship, export advice, market intelligence** **Support for soft skills development: coaching, management training, upskilling/reskilling** **Support for networking and partnership building (at national and/or international level)**	**Support for hard skill development: knowledge transfer, intellectual property, entrepreneurship, export advice, market intelligence** **Support for soft skills development: coaching, management training, upskilling/reskilling** **Support for networking and partnership building (at national and/or international level)**	**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**

Policy type:		National cluster policy	National cluster policy	Regional broad policy
Policy name:		Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
		Marketing activities: advertising, communication, events, fairs, and so on	**Marketing activities: advertising, communication, events, fairs, and so on.**	
	Explanation	The purpose of financing is the development and introduction to foreign markets of products and services offered by National Key Clusters and their members. Clusters can receive co-financing for certain activities (see listed above) that enhance such international cooperation. The total project cost must amount to EUR 2,27 million (PLN 10 million). Participants can receive a maximum of EUR 1.8 million (PLN 8 million), which means that at least 20% of self-financing the total cost of the project is required. The type of financing that can be obtained differs depending if you apply as a cluster coordinator or cluster member. The cluster manager receive subsidies for: administrative costs and remuneration for the personnel participating in the project; expert services, including market research, audits, evaluation research; services for the design, creation, maintenance and development of ICT tools; marketing; management of the cluster facilities, organisation of training programs, workshops and conferences for support, knowledge sharing, networking and international cooperation. Cluster members	The coordinator of the National Key Cluster is entitled to apply for public support under the instruments of the Smart Growth Operational Programme 2014-2020. Applications of consortia consisting of a group of members of the KKK will benefit from preferences under the assessment system when applying to various programs and assistance activities. The instruments listed here have been deducted from more general programme description (e.g. the overall objectives of the policy). Obtaining the status of a Key National Cluster does not automatically grant access to financing. There are competitions in the framework of the Smart Growth Operational Programme that are available exclusively for KKK.	The information about financial instruments and technical assistance is limited. The instruments listed here have been deducted from more general programme description (e.g. the overall objectives of the policy). One of the evaluation criteria for project selection is representation of different levels of the common value chain (i.e. infrastructure provision, human resource management, technology, research and development, procurement, logistics, production and service provision, marketing and sales, service and utilisation), created by cluster members to achieve the goals cluster.

Policy type:		National cluster policy	National cluster policy	Regional broad policy
Policy name:		Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
		receive subsidies for: advisory services and training in the field of operations on foreign markets; participation in economic missions; participation in the fair as an exhibitor; access to foreign research and development infrastructure; promotion of brands and products.		
HISTORY	**Period**	**Limited period**	**Unlimited period**	**Limited period**
	Ending year *(for policies with limited period)*	2023		2030
	Starting year	2014	2015	2021
	Explanation	The archive of PARP provides results of the competition from previous calls (e.g. from 2018).	The programme was created based on the recommendations of the Working Group on Cluster Policy in 2012 that established the basis of the cluster policy in Poland until 2020. The first round of competitions started in 2015 and was initially planned until 2018. After that, the programme was prolonged with no specific time limit.	The conditions for the implementation of RIS Mazovia until 2030 are also outlined by the Agenda for sustainable development 2030 (Agenda 2030) and European strategies - European Green Deal and European Industrial Strategy.
	Overall	Around EUR 33.25 million	N/A	N/A
	Annual	N/A	N/A	N/A

Policy type:		National cluster policy	National cluster policy	Regional broad policy
Policy name:		Internationalisation of the Key National Cluster Policy Programme	Key National Clusters (KKK)	Regional Innovation Strategy for Mazovia until 2030
BUDGET	Source of funding	National and EU funds within Smart Growth Operational Programme (measure 2.3 Pro-innovative services for enterprises / 2.3.3 Internationalisation of National Key Clusters)	National and EU funds within Smart Growth Operational Programme (measure 2.3 Pro-innovative services for enterprises)	National funds and funds of the local authorities of Mazowsze as well as EU funds.
POLICY EVALUATION	Availability	**No policy evaluation**	**Ex-post**	**Ex-post**
	Results	No publicly available evaluation has been identified for this policy. A mid-term evaluation of the Smart Growth Operational Programme covered measure 2.3. The report is available in Polish (www.poir.gov.pl) - *Ewaluacja mid-term postępu rzeczowego Programu Operacyjnego Inteligentny Rozwój 2014-2020*	Based on the 2018 evaluation of the three rounds of the competitions organised between 2015-2018, a new fourth competition was prepared for 2020. The evaluation is not publicly available but based on the decision to prolong the programme one can assume that it was positive. Within the evaluation strategic development areas were designated within cluster policy in Poland. A new monitoring and evaluation tool is implemented.	Mazovian Innovation Council is responsible for the evaluation and assessment of the innovation policy of the region.
POLICY ALIGNMENT WITH THE EU PRIORITIES			**Green economy** **Digitalisation** **Resilience**	**Green economy** **Digitalisation**

04

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

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 Polish 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 Polish cluster policy** for 2023.

Table 4: State of play

Poland	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 Poland.

Policy scope

In Poland, there are both the national and regional cluster policies that focus on the support of activities of cluster organisations in the country. The Key National Clusters initiative deals with strengthening the cooperation between companies or industry and RTDI actors, supporting internationalisation activities, fostering R&D activities, technology development and innovation, as well as supporting cluster excellence and professionalisation of cluster management. In total, as a result of five competition proceedings for the funding period 2014-2020, 35 agreements were signed for the financing of projects implemented by 10 National Key Clusters which are to be implemented until the end of 2023. In addition, one competition dedicated to the national key clusters and supra-regional growth clusters has been launched in 2023 within the programming period 2021-2027.

The objective of the Internationalisation of the Key National Cluster Programme is to increase the competitiveness and boosting scale up of SMEs, to support the internationalisation activities and to enhance the visibility of clusters.

Continuity

The cluster policy in Poland at the national level was not defined as an independent policy initially and was rather an element of the long-term formulated innovation policy included within several national programmes starting in 2007. Within the previous financing period 2007-2013 cluster development was supported from public funding within the Operational Programme Innovative Economy. The support was then intended for the development of inter-regional cooperation, in particular joint investment and advisory services contributing to easier transfer and diffusion of knowledge and innovation between cooperating entities. In 2012, a working group for cluster policy developed a comprehensive strategy and recommendations for the dedicated cluster policy in Poland. This policy has been further developed over the 2014-2020 and into the 2021-2027 funding periods. The Working Group on Cluster Policy developed a new strategy "Directions and assumptions of cluster policy in Poland after 2020". A new measure "Development of the potential of the coordinators of the National Key Clusters" has been launched in September 2020. In the current 2021-2027 funding period increasing emphasis is put on the green and digital transition as well as resilience and specific calls linked to Smart Specialisation priorities.

There is clear continuity in the national cluster policy in Poland. The initial indirect support for cluster development within the funding period 2007-2013 was transformed into developing a dedicated national cluster policy, which continued during the funding periods 2014-2020 and 2021-2027. The continuity is ensured also by the Polish Clusters Association[6] that represents the interests of the Polish cluster environment everywhere where actions carried out on a national as well as international scale are needed, as well as by the Key National Clusters initiative that deals with strengthening the cooperation between companies or industry and RTDI actors, supporting internationalisation activities, fostering R&D activities, technology development and innovation, as well as supporting cluster excellence and professionalisation of cluster management.

Evidence of performance

Based on a document from Ministry of Economic Development, Labour and Technology (previously Ministry of Entrepreneurship and Technology) from 2019, in 2018 there was evaluation of the system of National Key Clusters. As part of this evaluation, strategic development areas of cluster policy in Poland were designed.[7]

As a regular monitoring activity, a cluster benchmarking is conducted in each funding period.[8]

Cluster support instruments

Within Poland's national/regional cluster policies' support instruments are both financial and technical instruments for creation and further development of clusters, e.g. subsidies to hire

[6] Związek Pracodawców Klastry Polskie

[7] Ewaluacja efektów wsparcia Krajowych Klastrów Kluczowych w ramach PO IR oraz nowo projektowanych instrumentów klastrowych w II osi FENG 2021-2027 - PARP - Centrum Rozwoju MŚP

[8] For the 2022 edition, see https://www.parp.gov.pl/storage/publications/pdf/2023.04.26.-Raport-oglny---EN_do-publikacji.pdf (last access 22.05.2024).

personnel, subsidies for cluster infrastructure, support of collaboration initiatives, R&D projects and networking events.

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 Polish cluster policy 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 Poland[9] has been analysed across policy areas relevant to cluster policy. The results point to a series of issues where cluster policy can play an important role in tackling the country's economic challenges.

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

Policy area	Challenges	Cluster policy
INNOVATION	• Strengthen collaboration between researchers and businesses • Strengthen innovation in SMEs • Increase technology diffusion	Poland's Key National Clusters Programme supports the different stakeholders of the innovation systems with a special focus on SMEs. In addition, the Cluster Policy Working Group aims to support the innovation potentials of SMEs and to strenghen the cooperation between enterprises and other players in the national innovation system. The Bydgoszcz Tool Cluster, for example, is organising the INNOFORM trade fair to connect the actors of the innovation ecosystem in Poland and internationally facilitating both the creation of new R&I projects as well as the diffusion of existing technology.[10] In general, research has shown that clusters can serve as networks of knowledge and technology transfer and that cluster policy can bring an additional positive impact on R&D activity.[11]
SKILLS	• Fostering quality education and demand-driven skill • Amending skill mismatches • Strengthen green and digital skills	The Polish Key National Clusters programme supports clusters in the upskilling of their workforce. The National Key Cluster Silesia Automotive & Advanced Manufacturing, for instance, is running a Labour Market and Education programme to support businesses to build and maintain their competitive advantage in skilled employees.[12] Research underlines the role of clusters in developing the skills of the workforce and attracting skilled workers to a region.[13] Clusters organise different sorts of trainings

[9] European Commission (2023): Country report Poland. European Semester country reports 2023. Available at: https://economy-finance.ec.europa.eu/system/files/2023-05/PL_SWD_2023_621_1_en.pdf (last access 29.01.2024).
[10] https://klaster.bydgoszcz.pl/targi-innoform/ (last access 23.05.2024).
[11] Ben Hassine and Mathieu (2020); Fioravanti et al. (2023).
[12] https://www.silesia-automotive.pl/rynek-pracy-1156 (last access 23.05.2024).
[13] Hsu et al. (2014).

Policy area	Challenges	Cluster policy
		and workshops to adapt the workforce to current challenges like the green transition.[15]
GREEN TRANSITION	• Enhance investment into energy transition technologies • Improving energy-efficiency	Clusters can play an important role in coordinating economic actors in mastering the green transition across sectors.[14] Research has shown that Poland's Key National Clusters engage in a variety of practices to advance the green economy – from education and awareness building to strategy development and access to finance. Clusters act as drivers of change of the green transition by helping to build new green business models around emerging technologies and disseminating them across their respective sectors.[15] A good example for a dedicated green transition cluster is the Polish Sustainable Building Cluster, which focusses on passive house technologies for energy efficiency and circular building materials.[16]

Source: ECCP (2023)

[14] ECCP (2021); Morrisson and Pattinson (2021).
[15] Lis and Mackiewicz (2023).
[16] https://pkbz.pl/ (last access 23.05.2024).

References

EUROPEAN CLUSTER COLLABORATION PLATFORM

Strengthening the European economy through collaboration

References

Ben Hassine, H.; Mathieu, C. (2020): R&D crowding out or R&D leverage effects. An evaluation of the French cluster-oriented technology policy. Available online: https://www.sciencedirect.com/science/article/abs/pii/S004016251831727X (last access 18.01.2024).

ECCP (2021): Cluster driving the Green and Digital transition. Available at: https://clustercollaboration.eu/sites/default/files/document-store/Clusters%20driving%20the%20green%20and%20digital%20transitions%20event%20-%20Input%20paper.pdf (last access 29.01.2024).

European Commission: Serwis Programu Inteligentny Rozwój,
2.3 Proinnowacyjne usługi dla przedsiębiorstw /
2.3.3 Umiędzynarodowienie Krajowych Klastrów Kluczowych, Inteligentny Rozwój. Available at: www.poir.gov.pl/nabory/1-83/ (last access 12.10.2022).

European Commission (2019): European Observatory for Clusters and Industrial Change, Cluster programmes in Europe and beyond. Available at: www.clustercollaboration.eu/sites/default/files/news_attachment/cluster_programmes_in_europe_and_beyond_0.pdf (last access 12.10.2022).

European Commission (2023): Country report Poland. European Semester country reports 2023. Available at: https://economy-finance.ec.europa.eu/system/files/2023-05/PL_SWD_2023_621_1_en.pdf (last access 29.01.2024).

Fioravanti, V.; Stocker, F.; Macau, F. (2023): Knowledge transfer in technological innovation clusters. Innovation & Management Review 20:1. Available at: https://www.emerald.com/insight/content/doi/10.1108/INMR-12-2020-0176/full/html (last access 10.01.2024).

Hsu, M.-S.; Lai, Y.-L.; Lin, F.-J. (2014): The impact of industrial clusters on human resource and firms' performance. Journal of Modelling in Management 9:2. Available online: https://www.emerald.com/insight/content/doi/10.1108/JM2-11-2012-0038/full/html (last access 21.12.2023).

Internationalisation of Key National Clusters. Available at: https://stip.oecd.org/stip/interactive-dashboards/policy-initiatives/2021%2Fdata%2FpolicyInitiatives%2F5361 (last access 12.10.2022).

Klastry Polskie: Sytuacja, rola i potrzeby klastrów działających w Polsce. Available at: www.gov.pl/attachment/9581da33-ccc4-42ab-8921-4328cfc5fc72 (last access 12.10.2022).

Lis, A. & Mackiewicz, M. (2023): The implementation of green transformation through clusters. Ecological Economics 209. Available online: https://www.sciencedirect.com/science/article/abs/pii/S0921800923001052 (last access 18.01.2024).

Mazowieckie Voivodship (2021): Regional Innovation Strategy for Mazovia until 2030. Available at: https://innowacyjni.mazovia.pl/upload/pages/2321/2321-1.pdf (last access 12.10.2022).

Mazowsze Serce Polski: Polityka Klastrowa. Available at: https://innowacyjni.mazovia.pl/dzialania/mazowiecki-klaster-kluczowy.html (last access 12.10.2022).

Ministerstwo Przedsiębiorczości i Technologii: Krajowe Klastry Kluczowe. Available at: https://archiwum.mpit.gov.pl/strony/zadania/wsparcie-przedsiebiorczosci/innowacyjnosc/krajowe-klastry-kluczowe/

Ministerstwo Przedsiębiorczości i Technologii (2019): System Krajowych Klastrów Kluczowych (KKK) i instrumenty wsparcia KKK. Available at: www.kpk.gov.pl/wp-content/uploads/2019/02/4.-Konferencja_21.02.2019_JCJ.pdf (last access 12.10.2022).

Ministerstwo Infrastruktury i Rozwoju: Program Operacyjny Inteligentny Rozwój 2014-2020. Available at: www.poir.gov.pl/media/1867/ost_POIR_19_01_dokument_21012015_okladka.pdf (last access 12.10.2022).

Ministerstwo Rozwoju: Krajowe Klastry Kluczowe. Available at: www.gov.pl/web/rozwoj/krajowe-klastry-kluczowe (last access 12.10.2022).

Morisson, A.; Pattinson, M. (2021): Clusters Driving the Green and Digital Twin Transitions. Lille: Interreg Europe Policy Learning Platform. Available at: https://www.interregeurope.eu/sites/default/files/2022-03/2021-10-05%20Policy%20Brief%20-%20Clusters%20driving%20the%20green%20and%20digital%20twin%20transition.pdf (last access 29.01.2024).

Praca.pl: Krajowe Klastry Kluczowe – najważniejsze informacje. Available at: www.praca.pl/poradniki/rynek-pracy/krajowe-klastry-kluczowe-najwazniejsze-informacje_pr-4606.html (last access 12.10.2022).

PARP: Umiędzynarodowienie Krajowych Klastrów Kluczowych. Available at: www.parp.gov.pl/component/grants/grants/Umi%C4%99dzynarodowienie%20Krajowych%20Klastr%C3%B3w%20Kluczowych (last access 12.10.2022).

PARP (2012): Kierunki i założenia polityki klastrowej w Polsce do 2020 roku. Available at: https://poig.parp.gov.pl/files/74/81/545/14669.pdf (last access 12.10.2022).

PARP (2020): Kierunki rozwoju polityki klastrowej w Polsce po 2020 roku Available at: https://www.gov.pl/attachment/da138d48-f679-408b-b0d0-a627e2f1b593 (last access 12.10.2022).

PARP (2022): Cluster benchmarking in Poland – edition 2022. Available at: https://www.parp.gov.pl/storage/publications/pdf/2023.04.26.-Raport-ogolny---EN_do-publikacji.pdf (last access 22.05.2024).

Umiędzynarodowienie Krajowych Klastrów Kluczowych. Available at: https://www.parp.gov.pl/component/grants/grants/Umi%C4%99dzynarodowienie%20Krajowych%20Klastr%C3%B3w%20Kluczowych (last access 12.10.2022).

Annex

Table 6: Analytical framework for the state of cluster policy

Criterion of maturity assessment	Description	Categorical 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).