



EUROPEAN CLUSTER
COLLABORATION PLATFORM

Country factsheet

Sweden

An initiative of the European Union





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01

Introduction and economic policy context



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1. Introduction and economic policy context



This document presents an overview of the cluster policy in Sweden. 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 Sweden 2023](#).

The European Semester is 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 of this factsheet provides an overview on how Sweden’s cluster policy could help to tackle the economic policy challenges identified in the European Semester country recommendations.

The COVID-19 pandemic 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. In Sweden, research and innovation are crucial to Sweden’s competitiveness and to rebooting the economy after the COVID-19 pandemic. Clusters are not directly mentioned in the National recovery and resilience plan¹. The Swedish Government increased the funding for the autumn budget 2020 of EUR 65.34 million to Vinnova², Research Institutes of Sweden (RISE)³ and Business Sweden⁴ to support measures that help reboot Sweden⁵. 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.

In the [ERDF Partnership Agreement 2021-2027](#) for Sweden the priorities of the funds are based on the previous efforts of Sweden concerning research and innovation. As a part of that, clusters are mentioned as contributing to cooperation and knowledge transfer between research and businesses, active participation of universities, increase of growth and competitiveness of SMEs, and focusing investments on green and digital topics.

¹ More information on the Swedish recovery and resilience plan can be found here:

https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility/recovery-and-resilience-plan-sweden_en#swedens-recovery-and-resilience-plan

² Vinnova is Sweden's innovation agency.

³ RISE is Sweden's research institute and innovation partner. Through collaboration with industry, academia and the public sector, RISE ensures business competitiveness and contribute to a sustainable society. <https://www.ri.se/en/about-rise/about-rise>

⁴ Business Sweden is jointly owned by the Swedish state and the Swedish business sector with a mandate and a mission to help international companies gain access to the Swedish market and help domestic ones utilise it as a platform for expansion.

⁵ <https://www.government.se/press-releases/2020/09/competitiveness-and-reboot-for-research-innovation-and-investments/>



As a result, clusters assume an important role within the framework of the [ERDF Operational Programmes \(OP\) 2021–2027](#) in Sweden. Among the eight ERDF OPs implemented in Swedish regions, cluster support is referenced in seven of them across various specific policy goals. However, in the OP for Stockholm, there is no mention of any support measures related to clusters. In most cases, the intervention encompassing support for innovation clusters within the scope of ERDF 2021–2027 funding in Swedish regions primarily targets two objectives.

- Firstly, the support to clusters and networks is used to advance and enhance research and innovation capabilities, as well as to utilise advanced technologies. This is mainly achieved through initiatives that bolster existing clusters and cultivate new ones, fostering collaboration between academia and the research sector, with clusters being the primary focal point of the support.
- Secondly, cluster support is also extended to foster sustainable development and competitiveness among small and medium-sized enterprises (SMEs), aiming to create job opportunities within these enterprises. In this context, efforts include strengthening and promoting clusters to enable cross-sectoral cooperation. Aside from these two core objectives, cluster-specific interventions play an important role in helping Swedish regions achieve other specific goals. These encompass skill development for smart specialisation, facilitating industrial transformation and entrepreneurship, promoting renewable energy, developing intelligent energy systems, supporting climate adaptation, and advancing the transition to a circular and resource-efficient economy.

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

- 1) an overview of the industrial ecosystems and cluster landscape in Sweden,
- 2) an overview of the Swedish broad policies, which provide policy interventions for the development of clusters in Sweden,
- 3) an assessment of the state of play of the national cluster policy and its role in broader economic policy challenges mentioned in the European Semester Reports.

02

Industrial ecosystems and cluster landscape



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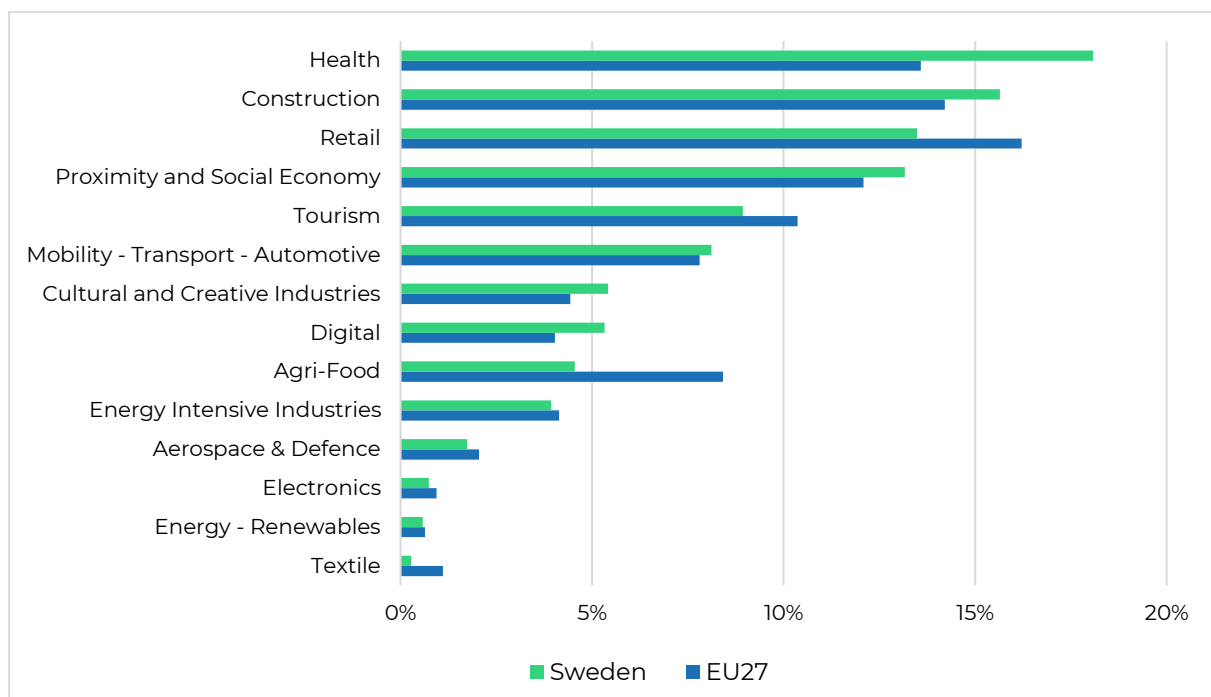
2. Industrial ecosystems and cluster landscape

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.⁶ The classification of the 14 industrial ecosystems have been calculated by aggregating NACE 2 -digit activities, following the methodology established in European Commission.⁷ 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 Sweden and the EU27 in each industrial ecosystem is shown relative to the number of all 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. For Sweden, the three main ecosystems by employment for are “Health”, “Construction” and “Retail”. For the former two as well as for “Proximity and Social Economy”, “Cultural and Creative Industries” and “Digital”, Sweden exhibits employment shares above the EU.

Figure 1: Employment across the industrial ecosystems



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

⁶ see here for more information <https://clustercollaboration.eu/in-focus/industrial-ecosystems> (last access 09.01.2023)

⁷ see European Commission (2021): Annual Single Market Report, SWD(2021)351.



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.

Economic activity, and therefore employment, is not equally distributed in all regions. Specialisation can be measured through Location Quotients (LQ) that reflect the relative specialisation of an activity in a region compared to the EU average. If the LQ for a given activity-region combination is above 1.5, it is considered a specialisation agglomeration and if the activity accounts for at least 1 % of total employment in the region, it is considered regionally relevant.⁸

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 60 in the country, while the second table is based on the 14 ecosystems, which total 6 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
SE11: Stockholm	10	J58 – Publishing activities	J62 – Computer programming, consultancy & related activities	K64 – Financial service activities	K65 – Insurance, reinsurance and pension funding	M70 – Activities of head offices
SE12: East-Central Sweden	7	Q87 – Residential care activities	P85 – Education	C24 – Manuf. of basic metals	L68 – Real estate activities	M71 – Architectural and engineering activities
SE21: Småland and islands	8	C16 – Manuf. of wood products	A02 – Forestry & logging	C28 – Manuf. of machinery & equipment	C31 – Manufacture of furniture	Q87 – Residential care activities
SE22: South Sweden	3	Q87 – Residential care activities	L68 – Real estate activities	P85 – Education	–	–
SE23: West Sweden	5	C29 – Manuf. of motor vehicles & trailers	Q87 – Residential care activities	M71 – Architecture, engineering	L68 – Real estate activities	P85 – Education
SE31: North-Central Sweden	9	C17 – Manuf. of paper products	C24 – Manuf. of basic metals	A02 – Forestry & logging	C16 – Manuf. of wood products	Q87 – Residential care activities
SE32: Central Norrland	7	C17 – Manuf. of paper products	A02 – Forestry & logging	Q87 – Residential care activities	P85 – Education	D35 – Electricity, gas, steam and air conditioning supply
SE33: Upper Norrland	11	B05 – Mining of metal ores	A02 – Forestry & logging	C24 – Manuf. of basic metals	Q87 – Residential care activities	C16 – Manuf. of wood products

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

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 capital region of Stockholm (SE11), sectors like publishing activities (J58) and computer programming, consultancy, and related activities (J62) stand out as significant sectoral concentrations (NACE), a

⁸ 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)



characteristic mirrored in the region's regionally relevant ecosystem agglomerations, “Digital” and “Cultural and Creative Industries”. Similarly, in several Swedish regions (e.g., SE12: East-Central Sweden), health-related sectors like residential care activities (Q87) constitute noteworthy sectoral agglomerations (NACE), reflecting the country's overall strength in the 'Health' industrial ecosystems (see Figure 1), as well as making up the only ecosystem agglomeration in the regions of Central Norrland (SE32) and Upper Norrland (SE33). Furthermore, the regions of Småland and islands (SE22) and North-Central Sweden (SE31) exhibit agglomerations in the industrial ecosystem “Energy-intensive industries”. This is shown by a more manufacturing-based industry and reflected in sectoral agglomerations, such as the manufacture of wood products, the manufacture of machinery and equipment as well as the manufacture of basic metals.

Table 2: Regionally relevant ecosystem agglomerations by region

Region	Number of ecosystem agglomerations	Agglomeration 1	Agglomeration 2
SE11: Stockholm	2	Digital	Cultural and creative industries
SE12: East-Central Sweden	0	-	-
SE21: Småland and islands	1	Energy-intensive industries	-
SE22: South Sweden	0	-	-
SE23: West Sweden	0	-	-
SE31: North-Central Sweden	1	Energy-intensive industries	-
SE32: Central Norrland	1	Health	-
SE33: Upper Norrland	1	Health	-

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

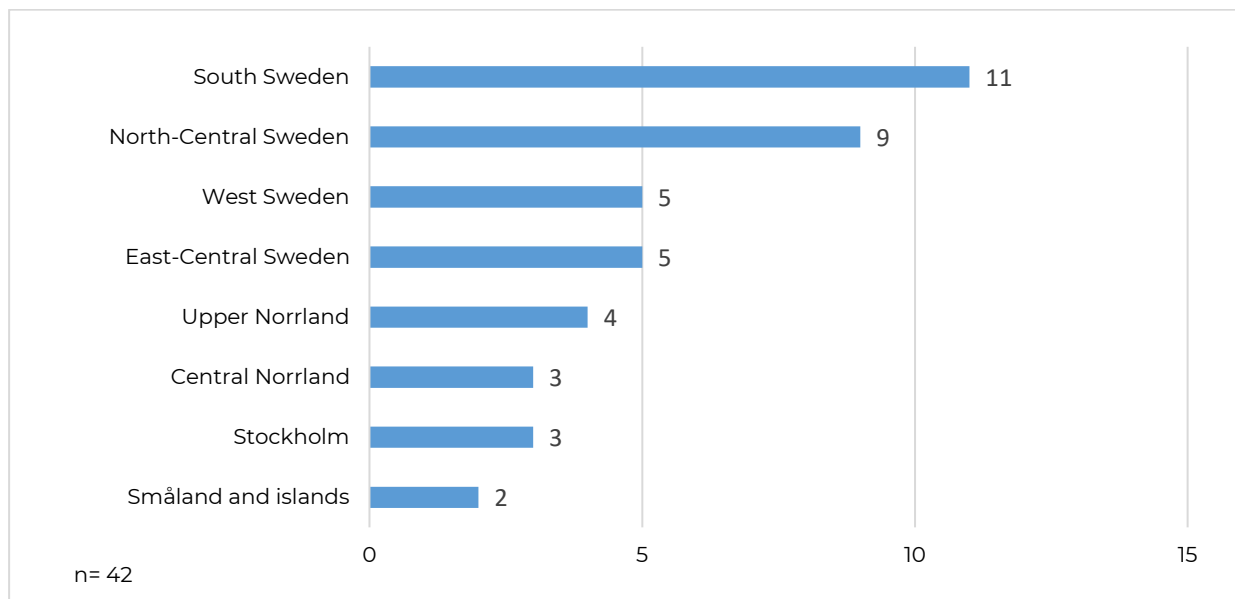


2.3 Cluster organisations & interregional cooperation

Cluster organisations in the regions

There are 42 cluster organisations registered on the ECCP from Sweden. Predominantly, these cluster organisations are located in South Sweden (11 cluster organisations), followed by North-Central Sweden with 9, and 5 registered cluster organisations in West Sweden and East-Central Sweden, respectively. 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 (83%, EU: 83%) followed by large enterprises (12%, EU: 9%) and research organisations (4%, EU: 8%) constitute the majority of member organisations of Swedish cluster organisations with profiles on the ECCP. From a thematic perspective, these Swedish cluster organisations are operating in the industrial ecosystems as below. 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 following list also underlines that the Swedish strengths in terms of employment, such as in Digital, Creative & Cultural Industries and Health, is also partially reflected in the Swedish cluster organisations registered cluster organisations.

- Digital (5 cluster organisations)
- Agri-food (4 cluster organisations)
- Energy Intensive Industries (4 cluster organisations)
- Renewable Energy (4 cluster organisations)
- Creative & Cultural Industries (3 cluster organisations)
- Health (3 cluster organisations)
- Aerospace & Defence (2 cluster organisations)
- Construction (2 cluster organisations)
- Electronics (2 cluster organisations)
- Tourism (2 cluster organisations)



- Mobility-Transport-Automotive (1 cluster organisation)
- Textile (1 cluster organisation)

Interregional cooperation

In the 2014–2020 funding period⁹, 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. Swedish cluster organisations have been involved in 18 consortia of the European Strategic Cluster Partnerships out of which 13 partnerships were focusing on internationalisation (ESCP-4i), four partnerships were on cluster management excellence (ESCP-4x) and one partnership focused on smart specialisation (ESCP-S3). Consortia partners came from 18 different EU member states (AT, BE, CZ, DE, DK, EE, ES, FI, FR, HU, IT, LV, NL, PL, PT, UK, RO, SI). Six Swedish cluster organisations participated in the INNOSUP-1 initiative with partner organisations coming from 19 countries (AT, BE, DE, DK, EE, ES, FI, FR, HU, IE, IT, LT, NL, NO, PL, PT, UK, RO, SI).

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 Sweden, four clusters are part of four Euroclusters with partners from 15 countries (ES, FR, DK, NO, BE, PL, PT, CZ, IT, FI, NL, AT, DE, BG, RO). These Euroclusters are ELBE Eurocluster, PIMAP4SUSTAINABILITY, Silicon Eurocluster and SocialTech4EU. Collectively, they cover five industrial ecosystems, with "Renewables" (ELBE Eurocluster), "Electronics" (Silicon Eurocluster), "Proximity and social economy" (SocialTech4EU) and "Energy intensive industries" and "Aerospace and defence" (PIMAP4SUSTAINABILITY).¹⁰

⁹ The programmes of the 2014-2020 funding period have ended in December 2023. The funded collaboration projects can continue on alternative funding.

¹⁰ <https://clustercollaboration.eu/euroclusters> (last access 06.03.2024).



03

National cluster policy, programmes and initiatives



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3. National cluster policy, programmes and initiatives




In this section we provide an overview of the existing Swedish cluster policies on a national level.

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

Table 3: Overview of the Swedish cluster policy

Policy type:	Broad Policy
Policy name:	National strategy for Sustainable Regional Development throughout the Country 2021-2030
POLICY OBJECTIVES 	<p>Strengthening cooperation between companies or industry and RTDI actors</p> <p>Increasing competitiveness and boosting scale up of SMEs</p> <p>Fostering R&D activities, technology development and implementation</p> <p>Fostering innovation and strengthening innovation ecosystems</p> <p>Promoting entrepreneurship, start-ups and spin-offs</p> <p>Promoting resilience and sustainable economy and other solidarity-based initiatives</p> <p>Promoting employment and upgrading skills and competences</p> <p>Enhancing territorial cohesion</p> <p>Strengthening innovation capacity is among the cross-sectoral strategic areas and priorities for sustainable regional development for 2021– 2030, especially SMEs and between the private sector and R&I actors in general. The national strategy has four strategic areas (including priorities): Innovation, renewal, entrepreneurship and businesses; equal opportunities for housing, work and well-being; accessibility through digital communication and transport system; and skills, supply and development. Priorities within the strategic area innovation, renewal, entrepreneurship and businesses are the following: Transitioning through strong regional innovation system</p>





Policy type:	Broad Policy
Policy name:	National strategy for Sustainable Regional Development throughout the Country 2021-2030
	and smart specialisation; competitive, circular and bio-based and climate and environmentally sustainable economy; utilisation of opportunities provided by digitalisation; good business climate with good framework conditions and well-functioning capital supply; internationalisation, promotion of investments and increased exports. The strategy is focused on giving the regions the opportunity to develop based on their own specific regional conditions. This requires efforts and collaboration in a variety of sectors and at all levels of society.
POLICY FOCUS 	Broad <p>The strategy has a broad focus on sustainable regional development. The strategy presents the national priorities for regional policy 2021-2030 and puts the main focus on four strategic areas, including its priorities (as seen above).</p>
RESPONSIBLE AUTHORITIES 	In charge of drafting Provides funding Oversees the implementation <p>The strategy was issued by the Swedish Ministry for Enterprise and Innovation and reported to the Swedish parliament. The strategy is central to the regional development policies. National as well as regional authorities play an important role for the implementation of the strategy.</p>
BENEFICIARIES 	SMEs Cluster organisations Research organisations Academic institutions Large firms General population




Policy type:		Broad Policy
Policy name:		National strategy for Sustainable Regional Development throughout the Country 2021-2030
		The main beneficiaries within the strategic area “Innovation, renewal and entrepreneurship and businesses” consist of companies (of all kinds), research and academic institutions. Clusters are mentioned concerning cooperation possibilities between different types of actors. The general population is also meant to benefit from the strategy as competence development or habitation are also addressed by the strategy.
INSTRUMENTS 	Financial	N/A
	Technical assistance	N/A
	Explanation	The strategy as such does not outline specific financial or non-financial instruments (of course, the strategy is related to other important programs and initiatives such as the ERDF programs, and other national or regional funding). It is up to the Swedish regions and the municipality of Gotland to establish specific efforts for the specific counties based on the priority areas developed by the main strategy. The regions in Sweden are responsible for regional development of their counties.
HISTORY 	Period	Limited period
	Ending year <i>(for policies with limited period)</i>	2030



Policy type:		Broad Policy
Policy name:		National strategy for Sustainable Regional Development throughout the Country 2021-2030
	Starting year	2021
	Explanation	The strategy presents the National priorities for regional policy 2021-2030. The strategy is in line with the 2030 Agenda.
BUDGET 	Overall	There is no budget directly assigned to the strategy. The regions will decide on how to implement the strategy and can finance it with funds from the state budget or own tax funds. State funds from different state agencies can also finance different regional programs if they make that decision.
	Annual	N/A
	Source of funding	The regions can use the grant "Regional development measures" and financial means by the ERDF/JTF. The financial means of the JTF 2021-2027 are managed by the Swedish Agency for Economic and Regional Growth (Tillväxtverket). In addition, efforts can be co-financed by government authorities and other actors at local, regional, national and international level.
POLICY EVALUATION 	Availability	Ex-post
	Results	For the ongoing strategy, the regions are obliged to analyse, follow up and evaluate the progress of their regional development based on economic, social and environmental sustainability.



Policy type:	Broad Policy
Policy name:	National strategy for Sustainable Regional Development throughout the Country 2021-2030
POLICY ALIGNMENT WITH THE EU PRIORITIES 	Green economy Digitalisation Resilience

Source: ECCP (2023)

04

State of play of cluster policy



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Strengthening the European economy through collaboration



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

Table 4: State of play

Sweden	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 Sweden.

Policy scope

Sweden has a longstanding history in business development. However, at the moment, there is no cluster-specific national policy present in the country. Instead, cluster support is part of the broad policy National Strategy for Sustainable Regional Development throughout the Country 2021–2030, which considers clusters as one central input towards strong regional innovation systems and smart specialisation but also in the area of sustainable development.



Continuity

The development of clusters has been a tool in business sector development in Sweden since the late 1990s. A study of Swedish cluster policies conducted by Harvard Business School and Stockholm School of Economics found that despite the private sector and academia encouraging cluster development, Swedish economic policy had for a long time taken a sceptical stance. Sweden has a long academic tradition of collaboration in specific geographic contexts. Furthermore, enterprises, academia, and the public sector have shared an interest in developing innovation systems and engaging in triple helix collaboration. The 2004 national strategy for innovation introduced the cluster terminology in the context of a major economic policy strategy. Six sector-specific industrial strategies for the leading sectors of the Swedish economy were established on the background of the strategy.

Since the second half of the 1990s, a focus has been on policies that could increase economic growth by exploiting growth potential in all regions of the country. The regional level was thus given increased responsibility for stimulating the country's growth, something that was previously primarily seen as one state national matter. Since January 1st, 2019, the regions are responsible for regional development in all counties. Focus on innovation based on local and regional conditions has become a central part of the regional development policy. The cluster policy of the Skåne Region 2017–2021 is a good illustration of this. In the 1990s, the regional authorities established a development structure to encourage and support innovative entrepreneurship. At the beginning of the 2000s, the region introduced sectoral triple helix collaboration for increased competitiveness and thereby turned the policy focus from traditional clusters and corporate networks to regional innovation systems and international collaborations. From the 2010s and onwards, the region has a policy emphasis on challenge-driven innovation for global competitiveness.

The Vinnväxt programme for clusters offered by the state agency Vinnova is an important source of funding for regional clusters. The programme, which is run by the Swedish Innovation Agency Vinnova since 2001 is the flagship project of Swedish cluster policies. In 2003, the first three regional clusters were selected through national calls for proposals for a ten-year programme with up to approximately EUR 600,000 – 800,000 annual funding per innovation cluster, along with advisory and process support. Another five clusters were selected in 2004 and four more in 2008 were admitted to the programme. New clusters have been selected in 2013, 2016 and 2019; three clusters at each time. The programme generally enjoys high marks internationally. The Vinnväxt programme aims to promote sustainable innovation-driven regional growth by developing internationally competitive research and innovation environments in specific growth fields. The 10-year-funding-cycles are indeed long-term funding which cluster organisations praise as huge benefit for proper establishment of projects.

Evidence of performance

Smart specialisation strategies: There was an ongoing programme evaluation of thematic objective 1 in ERDF 2014–2020 and the evaluation was published in 2023. Furthermore, as regions develop their smart specialised strategies, they may use the national network (S3 Network) for peer review and discussions. The network is administrated by the Swedish Agency for Economic and Regional Growth (Tillväxtverket).

Cluster support instruments

Clusters are mainly supported in Sweden by regional/national development agencies. Especially relevant are Vinnova and the Swedish Agency for Economic and Regional Growth (Tillväxtverket).

Several government-initiated opportunities for financial and technical support for cluster organisations exist in Sweden. The government designed the Innovation Programmes through which cluster organisations can apply for funding. Collaboration has also started to grow between some of them and innovation clusters. The Swedish Innovation Agency Vinnova, the Swedish Energy Agency, and the Swedish Research Council, Formas, jointly finance a total of 17 strategic innovation programmes. The Swedish Innovation Agency Vinnova supports the implementation of the




innovation programmes, among other things through process and method support and evaluation/monitoring.

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

Cluster policy can give important support to broader economic policy efforts. This section shows how Swedish cluster policy (can) play a role in tackling the challenges identified in the European Semester Report for the country. To this end, the European Semester 2023 country report for Sweden¹¹ 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.

As shown previously, Sweden does not have cluster-specific policy available, albeit exhibiting a vibrant cluster landscape. In 2021, Clusters of Sweden was established, which acts as the National Association of Cluster Organisations in Sweden. It aims to highlight and channel interests, needs and opportunities of Swedish cluster organisations and focuses on cluster development, collaboration, policy, and internationalisation.¹² There are 24 members from diverse industries and different parts of Sweden, which represent the interests of 15,000 member organisations in the private sector, public sector, and academia.¹³ The table below outlines how Swedish cluster organisations can contribute to 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 Swedish cluster organisations towards broader economic policy challenges.

Table 5: Contribution of Swedish clusters to the challenges identified in the European Semester Report

Policy area	Challenges	Cluster activity
SKILLS 	<ul style="list-style-type: none"> Enhancing its educational outcomes and employment prospects for those in need of additional upskilling and reskilling Need for skilled labour necessary for the green transition 	<p>The Sustainable Regional Development throughout the Country 2021-2030 promotes employment and upgrading skills and competences, as recommended by the European Semester Report 2023. The strategy identifies skills, supply and development as one of four strategic areas.</p> <p>With regard to upskilling and reskilling, the report underscores the importance for the country to enhance its educational outcomes and employment prospects for vulnerable groups, notably migrants and individuals in need of additional upskilling and reskilling. This requires the implementation of targeted policy measures aimed at facilitating labour market integration.</p> <p>Furthermore, research underlines the role of clusters in developing the skills of the workforce and attracting skilled workers to a region.¹⁴ One example is Smart Textiles, a cluster organisation focusing on advancing the textile industry in Sweden through innovation and</p>

¹¹ https://economy-finance.ec.europa.eu/document/download/0afee90f-a7ff-4a2c-ba45-dd8450f1e123_en?filename=SE_SWD_2023_627_en.pdf (last access 02.05.2024)

¹² <https://clustersofsweden.com/> (last access 10.05.2024).

¹³ <https://clustersofsweden.com/membership/> (last access 10.05.2024).

¹⁴ Hsu, M.-S et al. (2014): The impact of industrial clusters on human resource and firms' performance. Journal of Modelling in Management 9:2.



Policy area	Challenges	Cluster activity
		<p>collaboration. Through its Textile & Fashion 2030 project, the organisation is steering Sweden towards becoming a leader in sustainable fashion and textiles. This platform not only fosters collaboration across the textile value chain but also emphasises education and the dissemination of innovative practices, thus contributing to skill enhancement in the industry.¹⁵</p> <p>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.¹⁶ For instance, STUNS Life Science, an initiative located in Uppsala, fosters public-private collaboration to advance innovation in the life sciences, supporting both research and business development within the sector. The ERDF-funded project Life Science Stories, which involves their participation, is pivotal for skill development in this field. It links students with companies to tackle real-world problems, offering hands-on experience and applying theoretical knowledge. By fostering collaboration between universities and the life science industry, the project creates a vibrant educational setting that supports the goals of Agenda 2030. This approach not only enhances students' skills but also deepens their understanding of the local life science ecosystem, preparing them for future professional roles.¹⁷</p>
<p>GREEN</p>  <p>TRANSITION</p>	<ul style="list-style-type: none"> • Removing capacity constraints in the electricity grid through additional investments to support the increasing deployment of renewable energy • Streamlining and accelerating permitting procedures for renewables • Improving energy efficiency across various sectors • Enhancing green skills levels to support the green 	<p>Regarding the green transition, the European Semester Reports highlights the imperative of further decarbonising the economy. The national strategy has the purpose of fostering a competitive, circular, bio-based and climate and environmentally sustainable economy. In the strategy, clusters are considered one central input in achieving sustainable development, as they allow cooperation possibilities between different types of actors.</p> <p>As facilitators of technology transfer, clusters are assigned an important role in supporting the green transition. Clusters in Sweden are addressing the challenges mentioned by the European Semester Report. Such a cluster organisation is Sustainable Business Hub located in Southern Sweden with a focus on smart sustainable cities. Within the scope of their activities, they participate in a mix of projects, such as knowledge-enhancing projects, acceleration and matchmaking projects, testbeds and export projects with the aim of creating benefits for our members and working towards the global sustainability goals. These projects focus on, among other things,</p>

¹⁵ <https://smarttextiles.se/en/textile-fashion-2030/> (last access 10.05.2024).

¹⁶ European Expert Group on Clusters (2020).

¹⁷ <https://lifescience.stuns.se/our-projects/life-science-stories/> (last access 10.05.2024).



Policy area	Challenges	Cluster activity
	transition	<p>improving energy efficiency, accelerating the deployment of renewable energy, and streamlining regulatory processes.¹⁸</p> <p>Studies also show that clusters can play a vital role in the green transition of the economy¹⁹ 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.²⁰</p>

Source: ECCP (2023).

¹⁸ see <https://www.sbhub.se/vara-projekt> (last access 10.05.2024)

¹⁹ Lis, A. & Mackiewicz, M. (2023); ECCP (2021).

²⁰ Hatch et al. (2017).

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Annex

Table 6. Analytical framework for the state of cluster policy

Criterion	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).