



CAFEIN

CLUSTER ACTION FOR ECOSYSTEM INNOVATION NETWORK

Policy brief: Innovation ecosystems and policies in comparison in Europe

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INNOVATION ECOSYSTEMS AND POLICIES IN COMPARISON IN EUROPE

Strengths and weaknesses of different innovation ecosystems to find and propose solutions for improvement and better coordination in Europe

Section 1 - State of Play

France has a clear strategy regarding innovation, encompassed under the two major national programs the **PIA - Investment for the Future Plan** and the **France 2030 Investment Plan**. France also has a rich innovation ecosystem with structures and programs covering all dimensions (research, innovation technology transfer, financing, etc.) and the life cycle of the innovation. The diversity of the French ecosystem can also have its downside, leading to **complexity** and a **lack of clarity** for companies. France has adopted a dual-level organization between national and regional level, allowing both for an alignment of strategies regarding key national and sovereignty issues, and an adaptation to regional specificities and realities of regional sectors/SMEs. However, to be efficient, this system requires permanent strong cooperation between the two levels, to avoid duplication or conflicting strategies. In particular, national and regional authorities co-fund a lot of structures of the innovation ecosystem, which must meet national and regional expectations.

To sum up, three major categories of players seem to be central in France, as they act on all the dimensions of the green industrial transition (innovation, economy, environment): the regional authorities, the pole of competitiveness, and the national agencies BPI and ADEME. They could play a key role in coordinating these strategies and provide examples of content for the future Joint Action Plan of CAFEIN.

The **Italian strategy** for innovation and green industrial transition is made of several and significant facets.

The Italian innovation ecosystem is a complex network comprising a diverse range of stakeholders. This network includes companies, startups, universities, research centres, accelerators, incubators, investors, and government institutions. The common objective of these entities is the promotion of an environment conducive to innovation and economic growth.

Despite the collaborative nature of this ecosystem, Italy confronts **substantial regional disparities**. Notably, a pronounced North-South divide persists, wherein certain regions in Northern and Central Italy have achieved prominence as innovation hubs. These include Lombardy, Lazio, Piedmont, and Emilia-Romagna.

At the national level, Italy has crafted strategic initiatives to address the challenges inherent in research and innovation, such as **Mission 4 "Education and Research" of the PNRR** (National Recovery and Resilience Plan) and the **National Industry 4.0 Plan**. These strategies target increased investment in research and development, the growth of talents, the promotion of innovation in traditional sectors, and the facilitation of technology transfer.

The cornerstone of regional innovation strategy in Italy is the Regional Research and Innovation Strategies for Smart Specialisation (S3). Within this framework, targeted activities include the strengthening of the national research and development system, promotion of technology transfer, enhancement of human capital, maximization of knowledge spillovers, implementation of innovation risk-sharing policies, and the transition to new production paradigms.

There are several important aspects of **Poland's strategy** for innovation and green industrial transformation.

Polish innovation ecosystem is a complex network involving diverse stakeholders. This network includes companies, startups, universities, research centers, gas pedals, incubators, investors, and government institutions.

In Poland, the smart specialization strategy is implemented at two levels. At the national level, the smart specializations were supported primarily under the **Smart Growth Operational Program** and the **Seal of Excellence** competition of the Horizon 2020 program, while at the regional level, the smart specializations were supported through regional operational programs and the Eastern Poland Operational Program.

It is worth noting that there are **regional inequalities** in the maturity of cluster policy. For example, regions such as Mazovia and Pomerania have a conscious and exemplary regional cluster policy on which to build.

The aim of the activities carried out at the central level is to strengthen the concentration of efforts and resources on a specific group of **National Key Clusters** (KKK) identified through an open competition, understood as clusters of significant importance for the country's economy and high international competitiveness.

The Spanish ecosystem and policies highlight several strengths and weaknesses regarding innovation and the green industrial transition.

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Key strengths include a holistic collaboration developed by the national programme of AElS and many of the Spanish regions, with notable **inter-cluster projects** fostering innovation. Spain also benefits from flexible funding mechanisms, such as **CDTI's diverse programs**, and a pronounced internationalization focus, as evidenced by the successful results on clusters in the European calls, and ICEX's initiative supporting the global reach of sustainable businesses. There's a considerable push towards digital transformation, with entities like Red.es emphasizing the role of digital solutions in achieving a green transition.

However, challenges persist. Notably, there's **regional inequality** in the maturity of cluster policies, with regions like the Basque Country and Catalonia ahead.

The Ministry of Science's **limited recognition of clusters** restricts their participation in funding calls and training policies definition, and the **focus tends to be on lower TRLs**, potentially sidelining mature projects.

Finally, **Swedish ecosystem and policies** show a strong ecosystem for green and industrial transformation supported by government agencies and regions where **clusters often are a key enabler** in the local and regional environment. It is a result of long-term and conscious work orchestrated by actors such as **Vinnova** and **Tillväxtverket**, also including universities, research institutes, incubators and others that together have shaped the strong innovation environment for which Sweden is recognized.

Right now, work is being conducted to produce new national strategic innovation programs for the 2030s. These will be based on the concept of Impact Innovation and a strategic and long-term gathering of forces to jointly solve global societal challenges and increase the pace of the transition to a sustainable society. If measures are taken to meet the challenges that the analysis shows, there is good potential for Sweden to further develop its already strong position in green and industrial transformation.

Section 2 – Main findings

In **France**, green (ecological and energy) transition is a central pillar of the two major innovation strategies **PIA4** and **France 2030**. As a result, France has seen a proliferation of public policies, with a plurality of entities aiming to help remove barriers or address issues by creating their own mechanism. Cross-roads of issues, the Green industrial transition can be achieved via multiple channels of intervention (aid for direct transformation, aid for innovation, aid for environmental transformation, etc.) and at **different levels of intervention** (State, regional, local). This multitude of support

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players and mechanisms is a strength (multiplying the number of entry points and schemes enables us to reach a wider range of companies, massify support, respond to more issues, and create synergies or leverage effects between schemes) but also a **weakness** (risk of competition or redundancy between structures and schemes, lack of clarity in the offering, overall coherence issue).

Currently, the **Italian innovation ecosystems and policies** clearly have a strong focus on **digitalization**, development of **digital skills** and **decarbonization**. In this regard, a successful implementation of the investments promoted by the National Recovery and Resilience Plan (PNRR) will play a pivotal role. At the same time, **a lack of a national plan** for comprehensive green and digital transition, **latent disparities** in framing cluster policies across different regions, **fewer resources** for clusters compared to other EU countries and overlapping competencies still represent major obstacles for the Italian innovation ecosystem.

Poland's strengths include a **clear strategy regarding green industrial transition** (Productivity Strategy 2030, the Circular Economy Road Map) and the cooperation of many stakeholders developed at the national level.

Various Polish institutions (Polish Agency for Enterprise Development, Industrial Development Agency, Polish Investment and Trade Agency, and National Centre for Research and Development) offer different financing mechanisms tailored to different needs or stages of the company's life cycle. The Polish innovative ecosystem has a strong emphasis on the internationalization of enterprises as well.

However, some regions, such as the Masovian Voivodeship or the Pomeranian Voivodeship, have a more mature and stronger cluster policy compared to others, i.e. **disparities among regional innovation ecosystems** exist.

The National Key Clusters (KKK) could be considered as best practices and inspiring actions when it comes to clusters for the common action plan.

In the realm of green industrial transition, **Spain** demonstrates a **strong political stance** favoring a sustainable Europe and has laid out plans for strategic investments in green innovation. Institutions like **IDAE** offer a comprehensive approach, combining promotion, technical guidance, and financial support for green energy. However, more focus could be given to circular economy principles to further embed them in green transition strategies, as well as efforts should be put to face **regional inequality among clusters**.

Thanks to its overarching innovation ecosystem and policies, **Sweden** has good conditions for realizing its high ambitions to take a **leading global position in green and industrial transition**.

At the same time, the analysis shows clear areas for development. This includes **fragmentation** in the form of many regional but no national strategies for smart specialization as well as **unsynchronised regulations and calls** for funding of projects that prevent international and cross-border cooperation. The lack of a national cluster strategy and large inequalities between regions in the view of clusters are also clearly visible.

Section 3 - Conclusions

Following the green and digital transition plans of the European Commission, the five CAFEIN countries, namely France, Italy, Poland, Spain and Sweden, have focused on similar priority areas regarding digitalisation and green industry.

In this regard, the adoption of new technologies (AI, big data, HPC, cyber, Quantum, hydrogen, bio-based products, greening digital technologies and energy system) and the development of specific sectors (energy, mobility/transport, agro, circular economy) have been included in the transition strategies of all the five countries.

Overall, the five CAFEIN countries demonstrate **a rich and multi-stakeholder ecosystem**, with multilevel initiatives and programmes at regional, national and European levels. However, **duplication/complexity/confusion** between ecosystems and **a lack of support/funding programs available** persist.

Moreover, if innovation is a priority for each of the 5 CAFEIN countries, disparities exist in the performance between countries, but also **at the regional level** inside the same country.

Some countries suffer from a **lack of clarity on the strategic vision** (see Italy) regarding innovation and/or greening industry, others from uncoordinated strategies between regions inside the same country (see Sweden).

The role and recognition of clusters to support innovation and green industrial transition varies greatly from country to country as well. As a result, the services offered by clusters on these subjects also vary significantly.

In terms of support for innovation, some countries have an ecosystem covering the entire value chain, while others have focused their support on higher TRL levels (like Spain).

Internationalization efforts also differ greatly from country to country.



Therefore, in such a background, **the outcomes of the cooperation between actors and competence levels** (EU/national/regional) are different in each of the five countries.

In order to face the challenges described above, CAFEIN Joint Action Plan (JAP) will propose actions based on different pillars. For instance, the first pillar will aim to mitigate the risks related to a fragmentation of the multi-stakeholder ecosystems, a criticality that has been found in all 5 countries members of CAFEIN, by proposing the creation of a **European Green Cluster Forum**.

In line with CAFEIN mission to propose systemic solutions across interconnected European Innovation ecosystems, the Green Cluster Forum will serve as a **common platform** to bring together actors from the quadruple helix. Namely, the Green Cluster Forum will aim to strengthen the dialogue between cluster organizations at regional, national and European levels regarding the green transition, with a strong focus on SMEs.

Next progress and contributions can be followed on the CAFEIN website: <https://cafein-project.eu/>.

