



EU-LAC Foundation

Jonatan Paton, Nestor Bercovich, Belén Barroeta

Clusters and Cluster Policy: Opportunities for collaboration between the European Union (EU), Latin America and the Caribbean (LAC)



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AUTHORS:

Jonatan Paton (INFYDE S.L)
Nestor Bercovich (INFYDE S.L)
Belén Barroeta (INFYDE S.L)

GRAPHIC DESIGN: Juan Barrera

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October 2018 version

Authors:

Jonatan Paton (INFYDE S.L.)
Nestor Bercovich (INFYDE S.L.)
Belén Barroeta (INFYDE S.L.)

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ABBREVIATIONS AND ACRONYMS LIST

AECID	Spanish Agency for International Development Cooperation
AEI	State Research Agency of Spain
BIE	Ibero-American Bank of Evaluators
CBRIS	Cooperation on Cross-Border Regional Innovation Systems
CECMA	Agricultural Machinery Business Cluster from Argentina
CELAC	Community of Latin American and Caribbean States
CI	Cluster Initiatives
COSME	Programme for the Competitiveness of Enterprises and SMEs
CTI	Science, Technology and Innovation
CYTED	Ibero-American Programme for Science and Technology for Development
DNI	National Directorate of Industry of Uruguay
ECCP	European Cluster Collaboration Platform
ECEI	European Cluster Excellence Initiative
ECO	European Cluster Observatory
EFQM	European Foundation for Quality Management
EOCIC	European Observatory for Clusters and Industrial Change
ERDF	European Regional Development Fund
ESCA	European Secretariat for Cluster Analysis
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HEGAN	Aeronautics and Space Cluster Association of the Basque Country
IBEPI	Ibero-American Industrial Property Programme
ICCP	Industrial Complex Cluster Programme of South Korea
ICT	Information and Communications Technology
IDB	Inter-American Development Bank
IPTS	Institute for Prospective Technological Studies
IUC	International Urban Cooperation Programme
JIRI	Joint Initiative on Research and Innovation
JRC	Joint Research Centre
KETs	Key Enabling Technologies
LAC	Latin America and the Caribbean
LPA	Arranjo Produtivo Locais of Brazil
LTC	Lombard Technological Clusters
MC	Mini Clusters

MDIC	Ministry of Development, Industry and Foreign Trade of Brazil
METI	Ministry of Economy, Trade and Industry of Japan
MIUR	Ministry of Education, University and Research of Italy
ORU-FOGAR	United Regions Organization / Forum of Regional Governments and Global Associations of Regions
R&D	Research and Development
R&D&i	Research and Development and Innovation
RICI	Regional Innovation Cluster Initiative
RIS3	Regional Innovation and Smart Specialisation Strategies
RIS3-PE	Smart Specialisation Strategies in Selected Innovative Territories
RVCTI	Basque Science and Technology Network
SBA	Small Business Administration
SEGIB	Ibero-American General Secretariat
SGs	Steering Groups
SMEs	Small and Medium Enterprises
SPRI	Basque Business Development Agency

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EXECUTIVE SUMMARY

This document is the result of the “Competitiveness Poles” Project, promoted by the EU-LAC Foundation and the Ibero-American General Secretariat (SEGIB), whose objective is focused on fostering collaboration between clusters and territories of the European Union (EU) and Latin America and the Caribbean (LAC).

This project had a first phase of implementation by the EU-LAC Foundation during the period 2014-2015, when a Working Group was organised that carried out various activities involving the exchange of experiences and a search for cooperation agreements between clusters on both sides of the Atlantic.

The second phase of the project, initiated in 2017, has facilitated the launching of spaces for reflection and debate on the strengthening of cooperation and competitive development in the EU and LAC regions, using the clusters and their policies and associated initiatives as the central reference for the project.

The first rounds of discussion within the Working Group, initially with a greater number of representatives of LAC, enabled progress to be made in knowledge of the current status of Clusters and Cluster Policies in several of the LAC countries (as well as their capacity for competitive development of these territories), based on the identification of needs, interests and opportunities for cooperation (especially between clusters and regions of LAC and EU) expressed by the participants themselves. This was reflected in a first report entitled *“Clusters and Cluster Policies within the Framework of Strategies for Smart Specialisation and Territorial Development in LAC”*.

A second report entitled *“Cluster policies and their integration into Regional Innovation Strategies”*, analysed the role of **clusters and their policies within the framework of a regional and national development strategy**, whose objectives are complementary and are reinforced to achieve the correct performance in the short term and guarantee their viability, stability and long-term success.

Subsequently, the concerns of the Working Group focused on private leadership and financing as key elements for the sustainability over time of the Clusters Initiatives, beyond initial public support. This topic was included in the third report: *“Sustainability of cluster initiatives within the framework of cluster policy and smart specialisation”*.

A fourth and final report entitled *“The cooperation between regions and between clusters of LAC and the EU”*, addressed the programmes and experiences of interregional and inter-cluster cooperation, both in the EU and in LAC and between both regions, a recurring theme of reflection in the Working Group throughout the entire project.

This document therefore seeks to integrate all these analyses and structure the various contributions of the Working Group.

After introducing the context and background of this initiative, the **third section** presents information that corroborates the recent positive contribution of Clusters and Cluster Policies to economic development, business growth and employment in the LAC countries that have adopted these strategies within the available menu of industrial and innovation policies. Cluster policies are helping to overcome several of the constraints that SMEs face in that region, moving towards higher levels of cooperation, innovation and competitiveness. Similarly, support for the more newly emerging clusters and those in less industrialised regions has contributed to reducing productivity gaps and regional inequalities within those countries.

However, cluster promotion policies have not yet been generalised in LAC and, where they exist, they have not always been sufficiently hierarchical or had continuity over time. On the other hand, there are still various difficulties and needs associated with their development and performance that hinder their progress and effectiveness and place **important challenges** on the agenda.

One of these challenges refers to the **integration of cluster policies with regional development and innovation strategies, a problem that is developed in the fourth section**. Cluster Initiatives have proven their contribution to the economic development of the territories and, reciprocally, they need a sophisticated economy and a critical mass and sufficient social capital around them. To develop more rapidly, clusters need broader positive contexts than cluster-specific policies. At regional level they must be embedded in ecosystems of innovation and competitiveness that will allow them to be competitive.

The **integration of cluster policies into broader territorial innovation strategies** is therefore one of the main current trends in terms of clusters and regional development. Drawing up Regional Innovation Strategies, which include (and are reinforced by) the clusters of each territory, would help to take advantage of the synergies and potential resulting from the convergence of these policies. In particular, the promotion of clusters in LAC has a long way to go **to be articulated with the set of regional and national policies aimed at productive transformation and competitiveness**.

However, while **smart specialisation** has become the dominant focus of regional development and innovation policies in the EU, **integrating cluster policies**, in LAC these issues have just begun to be addressed, largely taking the European model as a reference, and following the programmes of cooperation with the EU.

In the **fifth section** the **experience of the Basque Country** is presented in detail, as an example of the maturation and evolution of cluster policies in the European context. The Basque case shows the great weight of the clusters and their high participation in the regional GDP. **The application of Smart Specialisation Strategies has been**

one of the main challenges for the cluster policy in the recent period. The Cluster Associations have played **a leading role during all phases of the Regional Strategy**, which illustrates the type of interaction between these two policy levels.

In contrast, and although the situation is very heterogeneous, in LAC there is a **general weakness in policies, institutions and regional infrastructures dedicated to productive development and above all to innovation**. Only in the recent period is there greater concern and a favourable evolution in this sense. Although the degree of clustering of the productive structure seems to be weaker in LAC than in the EU, the contribution that clusters can make when implementing regional innovation strategies should not be disregarded.

Another major challenge is related to the **sustainability of Cluster Initiatives**, a topic that is addressed in the **sixth section**. Although many of the Cluster Initiatives have been initially sponsored by the Public Sector (as promoters and financiers), it is essential to promote the autonomy and self-sustainability of the initiatives, in order to overcome political changes or unilateral decisions by public managers. In relation to this point, it has been highlighted that **favouring leadership by private initiative and consensus among the related agents** in terms of priorities, objectives and strategies / actions to be followed, is a key aspect for the survival and effectiveness of the clusters. It is therefore necessary to establish **mechanisms and incentives to favour the participation**, in decision-making processes and actions, of other networks and interested parties, in addition to those incorporated in management and management bodies.

The **establishment of governance models** (both in the area of the Cluster Policy and in each of the Initiatives) **that allow a decisive participation of the agents involved during all phases of the process** (formulation, implementation and evaluation) is vital to promote the empowerment and capacity-building of public and private managers in order to implement these policies and initiatives. It also seems necessary to further develop the **methodological aspects that facilitate the empowerment and autonomy of the directors and / or managers of Clusters**.

Finally, the **seventh section** analyses the current status of cooperation agreements between clusters and regions of the EU and LAC. The interest shown in Latin America and the Caribbean in the regional policy of the EU laid the foundation for **a growing share of the bi-regional collaboration and the exchange of experiences currently focusing on the management of territorial policies based on the smart specialisation and the “value chain / cluster” approach**.

Inter-cluster collaboration is one of the key points of the cluster policy approach in the EU. For this reason, the European Commission, through *The European Observatory for Clusters and Industrial Change* (EOCIC) works to facilitate this collaboration and has developed a virtual platform called the *“European Cluster Collaboration Platform”* (ECCP).

Although LAC countries have not implemented significant institutional initiatives to promote inter-cluster cooperation, it is possible to observe over the last few years that a number of diverse agreements of this type have been achieved. Many of these experiences have been promoted on the initiative of the same clusters and, in some cases, these initiatives emerged under the direct auspices of more or less structured public policies.

In short, EU-LAC cooperation has been incorporating territorial development and cooperation between regions as a central theme, and there are several support programmes at that level. For its part, inter-cluster cooperation is growing within the EU and has important incentives for internationalisation. **There is undoubtedly scope to think and design more effective mechanisms to promote inter-cluster cooperation between the EU and LAC.**

1. INTRODUCTION

This document is part of the “Competitive Clusters” project, promoted by the EU-LAC Foundation and the Ibero-American General Secretariat (SEGIB), whose objective is to focus on fostering collaboration between clusters and territories in the European Union and Latin America and the Caribbean.

The EU-LAC Foundation was created by the 61 governments of all European Union member states and of the countries of Latin America and the Caribbean (LAC) as well as the EU itself in the framework of the Bi-Regional Strategic Association. Its mandate is to contribute to the strengthening of the bi-regional partnership by involving the participation and input of civil society, to encourage mutual knowledge and visibility. Within this framework one of its functions is to provide recommendations for policies to support competitiveness in its Member States and the exchange of experiences and good practice.

The Project objective is to promote collaboration between clusters and territories in Europe and Latin America and the Caribbean.

SEGIB is the international support organisation for the 22 countries which make up the Ibero-American community: the 19 Spanish- and Portuguese-speaking Latin American countries and those of the Iberian Peninsula: Spain, Portugal and Andorra. SEGIB supports the organisation of the Ibero-American Summits of Heads of State and Government, implements their mandates and promotes Ibero-American Cooperation in areas of knowledge, social cohesion and culture including, among other aspects, improving productivity and competitiveness within the framework of the Ibero-American Knowledge Space.

This project had an initial phase of implementation by the EU-LAC Foundation during the period 2014-2015. In that phase it organised a Working Group, which carried out a variety of activities to exchange experiences and seek cooperation agreements between clusters on both sides of the Atlantic¹.

The launch of the Second Phase of the “Competitive Clusters” Project, by the EU-LAC Foundation and the Ibero-American General Secretariat, initiated in 2017, facilitated the implementation of analysis activities and spaces for reflection and debate on strengthening cooperation and competitive development in the territories of the regions of the European

¹ https://eulacfoundation.org/sites/eulacfoundation.org/files/files/ES_Competitividad%20Territorios_Internacionales.pdf

Union, Latin America and the Caribbean, using clusters and associated policies and initiatives as the backbone of the project.

The first rounds of discussion, along with questionnaires duly completed by project participants, have enabled the conclusions to be collected and structured in a **1st report entitled: “Clusters and Cluster Policies within the Framework of Smart Specialisation Strategies and Territorial Development in LAC”²**, and were subsequently debated in a virtual meeting of the members of the Working Group.

Accordingly, progress was made in understanding the current state of clusters/cluster policies in several LAC countries and their capacity to contribute to the competitive development of these territories, based on identifying the needs, interests and opportunities for cooperation (especially between LAC and EU clusters and regions) expressed by the participants themselves in this field.

One of the main conclusions obtained within this framework has been to corroborate the contribution of clusters and cluster policies to economic development, business growth and employment. These policies are helping to overcome various restrictions faced by SMEs in LAC, progressing to higher levels of cooperation, innovation and competitiveness. Similarly, support for the more newly emerging clusters and those in less industrialised regions has contributed to reducing productivity gaps and regional inequalities.

In the discussions of the first Virtual Meeting, interest in strengthening the links between Clusters Policies and the Smart Specialisation Strategies became clear, particularly due to the relative slowness of LAC countries and regions in implementing regional innovation strategies. This interest motivated the development of a **2nd report entitled “Cluster policies and corresponding integration into Regional Innovation Strategies”³**, which served as the basis for discussion during the second Virtual Meeting.

In this area, concerns were expressed regarding evidence of continuing difficulties and needs associated with the development and performance of clusters and value chains, which hinder progress, particularly in LAC. One of the concerns is the difficulty faced by SMEs in accessing financing and the mechanisms that can be generated within the Clusters and the Regional Innovation and Smart Specialisation Strategies (RIS3) framework that can help overcome this barrier.

During the first two meetings, emphasis was also placed on issues such as private leadership and financing as key elements for driving Cluster Initiatives over time beyond initial public support, a topic included in a **3rd report entitled “Sustainability of cluster initiatives in the cluster policy and smart specialisation framework”**.

2 <https://www.linkedin.com/groups/8649039>

3 <https://www.linkedin.com/groups/8649039>

Another recurring topic during the virtual meetings was inter-cluster collaboration and the experience of regional collaboration. For this reason, **a 4th report summarises the experience and programmes of inter-regional and inter-cluster cooperation in the EU, in LAC and between both regions.**

This document aims to integrate the various thematic analyses, contributions and conclusions carried out during the lifetime of the project in the various Working Group sessions. The following pages therefore include a review of these contents

2. STARTING POINT IN LAC: SUMMARY OF PHASE 1 CONTRIBUTIONS (2014-2015)

To make use of the discussions and conclusions of Phase 1 of the project in the current stage, the points from the structuring document written at the end of that Phase are summarised below⁴.

Firstly, one of the conclusions from Phase 1 was the recognition that policies promoting clusters in LAC have encouraged greater interaction between public and private agents and the strengthening of business institutions, resulting in greater business and technological development in the companies in the clusters.

However, the social capital deficit, i.e. a lack of confidence, and the history of cooperation between public and private institutions, as well as between companies, has limited cluster development in some countries/regions and limited the impact of policies.

Excessive political centralisation and the limited competences and resources of sub-national authorities in many countries can restrict their financial autonomy and technical capability to define and manage their cluster and innovation initiatives.

Beyond the endogenous problems, clusters face problems which are largely exogenous, such as logistical and infrastructure deficits and lack of adequate access to funding, all of which calls for greater coordination between the various national, regional and local institutional spheres.

The majority of LAC clusters, in line with the **pattern of production specification of these economies, focus on activities linked to processing natural resources**. Additionally, they are in the early stages of consolidation. Their competitive capacity is limited by various obstacles, such as deficits in quality and standardisation, small scales, little culture of internationalisation, logistical problems, etc.

Endogenous problems of clusters:

- Social capital deficit
- Excessive political centralisation
- Standardisation quality
- Low economies of scale

Exogenous problems of clusters:

- Infrastructure deficits
- Logistical deficits and problems
- Difficulty of access to funding

4 "Shared experiences on competitiveness and internationalization of competitive territories in the EU and LAC countries", Project Report, EU LAC Foundation
<http://polos.eulacfoundation.org/system/files/Competitive%20and%20international%20territories.pdf>

The construction and strengthening of cluster **governance** institutions is a **complex but key process** for the development and sustainability of production groupings. **If governance is not consolidated, there is a risk of disintegration after public support ends.**

The role of cluster manager or coordinator is very important, but their function must not be independent of institutions representing cluster governance and policies must not confuse clusters with cluster managers.

Policies should enable **technical support** for clusters to incorporate a comprehensive strategic vision of their businesses and better understanding of international trends and opportunities (technological, productive and commercial) in their sectors of activity.

Attracting foreign investment or large companies to the cluster can, under certain conditions, be a factor that revitalizes it and upgrades it technologically.

Policies should actively promote the **internationalisation** of clusters and, in the long term, their dynamic insertion into global value chains. Specific strategies may be required to support the internationalisation of clusters to do this, which are not generally included in the typical menu of policies available in the region.

Finally, in relation to opportunities for collaboration in clusters between the EU and LAC, the Latin American participants in the Project during Phase 1 highlighted the role that could be played by a **common working platform** (the Working Group) **to facilitate interactions and exchange of information**. Some participants even proposed moving towards the creation of a permanent collaborative workspace, incorporating technological and trade “antenna”, training and coordination functions, and even seeking opportunities to support clusters in matters of design, implementation and execution of international projects.

The main recommendation from Phase 1 was the organisation of a permanent Working Group to exchange information between Europe and LAC, as well as for stable cooperative work to seek opportunities for collaboration on bi-regional projects.

3. ELEMENTS OF INTEREST FROM LAC: THEMES TO BE DEVELOPED IN THE PROJECT

In the context of the TCI Network’s 20th Global Conference in Bogotá in 2017, a meeting with representatives of the Competitiveness Poles Working Group from the EU-LAC Foundation and INFYDE was organised.

An initial list of issues to be addressed arose from that meeting (based on a questionnaire disseminated among LAC participants). **The subjects identified in the analysis of the questionnaires** concerned the following areas:

- a. **Improved models and methodologies** for defining, implementing and monitoring Clusters and Cluster Policies based on international experience.
- b. The role of **clusters and their policies within the framework of a development strategy at regional and national levels**, the objectives of which are complementary and mutually reinforcing, in order to achieve correct performance in the short term and ensure long-term viability, stability and success.

3.1 Policies for Innovation, Competitiveness and Smart Specialisation Strategies (RIS3)

Policies for innovation, competitiveness and RIS3

- The key lies in strong interaction between the public and private sectors and academia
- Institutions must not limit themselves to defining a favorable regulatory framework, but also need greater proactivity in their actions

The policies and programmes for innovation and competitiveness highlighted as **successes** by the participants have the common feature of appropriate interaction between the public and private sectors in their formulation and implementation.

The role of institutions should not be solely limited to defining a favourable regulatory framework, but rather they need to have a proactive, determined attitude to achieve the participation of all the agents involved, including the scientific and technological system, to promote the generation of Research and Development (R&D), knowledge transfer and the adoption of more sophisticated technologies that drive technological innovation in the production chains.

Obstacles

- Lack of comprehensive strategic planning
- Lack of adequate ongoing financing (access to same)
- Lack of private initiative and commitment to the collaboration

The main **obstacles** or limitations highlighted by the parties surveyed focused on the lack of comprehensive strategic planning for regional development, meaning coordinated action between national and regional authorities, and being capable of engaging all the agents involved to form public/private partnerships, reflecting the special characteristics of each country.

They also highlight problems in obtaining sufficient ongoing financing to put actions with a transforming mission into effect. Added to limitations to public funds for executing programmes, in many cases there is a lack of private investment in R&D and obstacles to accessing credit, which make corporate innovation processes more difficult.

3.2 Clusters and Cluster Policies

The responses received mainly emphasise the importance of promoting the creation of appropriate governance mechanisms, to favour the interaction of the agents involved and the successful performance of the clusters, as well as to ensure their sustainability when public sector financing starts to shrink.

Clusters and cluster policies (I)

- Promoting appropriate governance mechanisms to ensure sustainability over time is key
- Experiences in LAC do not reflect a comprehensive proposal for governance

The actions carried out in relation to this question by participating LAC entities show from experience that, in general, these do not constitute a comprehensive proposal for cluster and cluster policy governance.

The existence of a theoretical framework and good methodological design is a priority, and technical support and regular follow-up from the public sector can be fundamental (Argentina, Colombia).

Clusters and cluster policies (II)

- The existence of a theoretical framework and good methodological design
- Priorities, objectives and actions of the clusters and their policies need to be arranged hierarchically in regional and national strategies
- Boosting the capacities of public and private managers is key

The priorities, objectives and actions of the clusters and of cluster policies should be arranged hierarchically in regional/national development strategies and commitment to collaboration between the public and private sectors is required. This formulation of strategies would go hand in hand with strengthening capacities for formulating strategies and managing actions.

The importance of the “cluster manager” for revitalizing and coordinating activities, and of introducing criteria for “performance assessment”, was highlighted in several cases. But capacity building should not only be aimed at managers, but also at the public officials responsible for defining and supervising models for monitoring and evaluating cluster intervention initiatives.

Clusters and cluster policies (III): Difficulties

- Limited financial capacity for medium- and long-term sustainability
- Difficulty in reaching a consensus among companies and between them and the other agents
- Lack of participation and cooperation between value chain agents
- Difficulties in linking the cluster policy and territorial strategies

One of the main **concerns** indicated is the financial capacity for putting cluster initiatives into effect and supporting actions over the long term.

Several of the cases evaluated had benefited from international support, especially financial and technical support from the IDB. However, the success of the actions and their long-term sustainability should not depend on external financial contributions, but rather it should deepen public/private cooperation, which entails effective public support instruments and determined, committed private sector participation.

The difficulty in reaching a consensus among the companies to work together and, above all, to share information, is another of the main impediments to the development of clusters that was highlighted in the questionnaires. These restrictions appear especially on issues such as starting up joint innovation projects or for joint production and/or marketing.

3.3 Areas of Interest between Clusters and Regions

LAC participants highlighted, as the principal fields of interest for collaboration and in-depth debate, governance models for clusters and models or experiences for the design, implementation and assessment of Cluster Policies. Specifically, themes identified for training and exchanging experiences are:

- Successful cluster **governance** models
- **Design, implementation and assessment** of cluster policies (measurement of results, monitoring and resolution of conflicts)
- Policies and **support instruments** for clusters
- **Best practice** in the field of innovation in clusters
- Cluster **quality** seals (for quality, standardisation and international certification)

Other activities of interest within the framework of the Project are:

- The creation of spaces for training, cooperative construction of projects and the coordination of Cluster networks.
- Providing and coordinating these spaces for starting up specific projects between two or more countries.
- Coordination and generation of synergies with European support instruments with high entry barriers for Latin America and the Caribbean (e.g. Horizon 2020).
- Identification and coordination of instruments for support to clusters, promoting: development of companies' competitive capabilities, promotion of business internationalisation, generation of support infrastructures, generation of R&D&i projects, dissemination and adaptation of new technologies.

4. THEME 1: INTERNATIONAL TRENDS IN CLUSTER POLICIES AND THEIR RELATIONSHIP WITH SMART SPECIALISATION

SUMMARY OF THEME 1

As already mentioned, from the first exchanges within the Working Group by the “Competitiveness Poles” Project there emerged an initial proposal of issues to be discussed, which are addressed in this chapter.

A first focus addresses the **best models and methodologies** for the definition, implementation and monitoring of Clusters and Cluster Policies based on international experience. The analysis presented here allows for corroborating the diversity of the experiences set in motion in this field. Likewise, this exercise addresses some of the limitations and future challenges faced by clusters and cluster policies in LAC.

A second focus refers to the **role of clusters and their policies within the framework of a regional and national development strategy**, whose objectives are complementary and are reinforced to achieve correct short-term performance and ensure viability, stability and long-term success.

Cluster Initiatives have proven their contribution to the economic development of the territories and, reciprocally, they need a sophisticated economy and a critical mass and sufficient social capital around them. To develop more rapidly, clusters need broader positive contexts than cluster-specific policies: at the regional level, they must be embedded in ecosystems of innovation and competitiveness that allow them to be competitive.

Hence, **the integration of cluster policies into broader territorial innovation strategies** is one of the main current trends in terms of clusters and regional development. Formulating Regional Innovation Strategies, which include (and are reinforced by) the clusters of each territory would help to take advantage of the synergies and potential resulting from the convergence of these policies. In particular, the promotion of clusters in LAC has a long way to go **to interact with the set of regional and national policies aimed at productive transformation and competitiveness**.

However, while in the EU **smart specialisation** has become the dominant focus of regional development and innovation policies, **integrating cluster policies**, in LAC these issues have just begun to be addressed, largely taking the European model as a reference and following the programmes of cooperation with the EU.

4.1 Cluster policies at international level

4.1.1 European Union

The European Union has drawn up a cluster policy aimed at industrial promotion and modernisation, support for SME growth and support for extending and implementing smart specialisation.

The “*Smart Guide to Cluster Policy*”, published by the European Commission⁵, underlines the importance of **combining cluster policy with Smart Specialisation Strategies (RIS3)** to promote the economic and industrial development of regions.

According to the “*European Cluster Collaboration Platform*” (ECCP), the three pillars of European cluster policy are aimed at **industrial strengthening and inter-regional cooperation, internationalisation and cluster excellence**.

The European Commission has launched a number of initiatives in this area: The European Cluster Observatory (ECO), the European Cluster Excellence Initiative (ECEI), the European Secretariat for Cluster Analysis (ESCA) and the Quality Label for Cluster Organisations (created by the ECEI, enabling the classification of cluster organisations in terms of excellence in management).

European cluster initiatives have strong links with (and, up to a point, dependence on) **the cluster policy of the territory in which they are located** (both regionally and nationally in many cases). These initiatives are constituted as legal entities, created with the specific purpose of promoting activities in the value chain and linked to a policy defined in their territorial setting (basically regionally).

The general strategic lines at European level are defined by specific entities (supported by the European Commission) which are responsible for facilitating operational activities to develop cluster initiatives (e.g. ESCA, ECEI, ECO), although it is at territorial level (state and region) where more specific lines are defined in dependent coordination between private initiative and public support.

In the majority of European cases, at the level of Commission support, **financial resources are not linked *per se* to a specific cluster policy, but rather they have access to programmes for specific areas related to cluster activities** (e.g. COSME, HORIZON 2020, Interreg). Regionally and nationally, however, a cluster policy

5 European Commission (2016). Smart Guide to Cluster Policy.

with specific funding does exist in the majority of countries, although it is focused primarily on projects and not so much on the operating structure of the clusters and their associations/initiatives.

The complementary nature between national and regional cluster policy is a priority in Europe, where national actions (*Competitive Clusters* in France, *Innovative Business Groupings* in Spain, etc.) combine with other support initiatives at regional level (e.g. Catalonia or the Basque Country in Spain, Lombardy Region⁶ in Italy, etc.).

In addition, in many cases there is direct integration of national and regional initiatives. For example, in 2012, the Italian Ministry of Education, University and Research (MIUR), in line with the priorities set by the EU Framework Programme for Research and Innovation Horizon 2020, promoted the creation and development of National Technology Clusters. This process involved regional administrations, called to support complementary and/or functional activities to the development and enhancement of Clusters, in the context of specific Programme Agreements with MIUR. In developing its own regional RIS3, Lombardy Region recognised clusters as tools supporting the creation of enabling environments for the birth and growth of emerging industries. They are also considered as tools of “soft governance” between the territory and the local government in order to have trustworthy actors to engage systematically in the planning of regional strategies.

As part of this strategy, Lombardy Region Government launched 2 specific calls for cluster initiatives, with the technical support of Finlombarda (the in-house agency specialised for the implementation of regional economic, social and territorial development programs):

1. In **2014** it launched a first call (€ 1,000,000 of regional funds) for the two year period 2014-2015 for the **start up phase** of each cluster financing activities aimed at developing the competitiveness of cluster organization (especially their business plan and related staff/activities such as communication and internationalization actions) and **formally recognising 9 Lombard Technological Clusters (LTC)** with a personalized logo;
2. In **2016** it launched a second call for the **consolidation** of the Clusters Organization with legal entity (€ 1,000,000 of ERDF funds, according to the Regional Operational Programmes for the 2014-2020 period) financing consolidation projects and activities to improve cluster competitiveness on specific “dimensions” that need to be strengthen (according to the cluster dashboard) plus Inter-clusters projects (optional); the 6 dimensions are: Cluster Development; Financial Sustainability; Research & Innovation; Internationalization; Governance; Communication. The projects are co-financed (50%) and can last at least 15 months since they are formally approved by an evaluation unit.

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6 European Commission (2016). Smart Guide to Cluster Policy.

Furthermore it has defined a **performance dashboard** to monitor clusters' growth on the basis of 6 dimensions, linked to the ongoing regional call, taking into account the process and the recommendations for cluster management excellence provided by the European Secretariat for Cluster Analysis.

Since July 2015, monthly **Cluster Steering Committee** are taking place to monitor activities, facilitate networking and development of synergies, exchange knowledge among clusters about specific topics, continuous update of the regional RIS3 and related Work Programmes, share inputs, prospects and projects, such as the results of regional R&D activities.

The main **lessons** drawn from **European cluster policy** are:

- **Policies with a strategic framework** should be defined for the territory (Smart Specialisation Strategies), beyond the support activities of traditional policies.
- The policies need to be considered **with a medium- and long-term horizon** (high rate for obtaining results).
- **Communication and cooperation** between all the stakeholders must be promoted (generating social capital and excellence in management).
- **Industrial modernisation, inter-sector collaboration, the development of new industries, the growth of SMEs and the promotion of smart specialisation** need to be promoted through the development of clusters.

4.1.2 United States

In the United States, the formalisation of cluster policies is a relatively new phenomenon. The **existence of associations** (intermediate infrastructures) is common **for collaboration between their members**, organised around their participation in a **specific value chain**. These experiences usually take on the role of cluster initiatives and play an important role in strengthening public/private collaboration and articulating networks. Sometimes, however, the specific policy responsible for its support from the Public Authority is not as well defined as in the European case.

As such, cluster policy in the United States, at Federal level, was driven in 2010 with the *“Regional Innovation Cluster Initiative”* (RICI). This initiative is implemented in a cross-cutting manner by multiple federal programmes and agencies, such as the Small Business Administration (SBA), which previously also carried out actions for collaboration between SMEs in value chains. The SBA's cluster policy has focused on **solving the problems SMEs face with access to innovation and to international markets** (generated by economies of scale problems).

In 2013, federal government support to clusters was also extended through the promotion of the so-called *“Manufacturing Hubs”*, aimed at **the development of high-level technological services** (based on joint action by industry, academia and

government). These centres of excellence carry out activities (not covered by private initiative) for innovation in advanced manufacturing systems, new energies, advanced materials, etc. As a result of combining these policies, 16 “*Manufacturing Hubs*” and 58 cluster initiatives had been created by 2014⁷.

Cluster policy in the United States is on a **smaller scale than in Europe or the cases to be analysed in Asia**, both in relation to the resources allocated and in the extent or scope of the policies. However, US cluster policy is more selective in its actions: the policy is not intended to create *ex novo* clusters where they do not exist.

In a country that has not traditionally favoured industrial policies, **the general objective of federal cluster policy is to demonstrate a path to clustering** (similar to pilot programmes) which results in improved competitiveness.

The strategy is aimed at **cross-cutting actions between different federal/state programmes and departments and at optimising the cooperation and integration of the main agents** involved. As such, coordination for strategic planning and consensus-building is essential for execution of the actions.

The main lessons drawn from US experience in cluster policy are:

- Federal cluster policy is not a large-scale policy: it seeks a highly demonstrative effect in the country as a whole, and therefore needs to be very selective in its actions.
- It seeks to experience and demonstrate how cluster initiatives can improve competitiveness, ensuring widespread use of clustering and cluster-type methodologies.
- It seeks to promote competitiveness through innovation.
- It does not attempt to create clusters *ex novo*.
- It attends to coordination and information and access limitations by means of cooperation and integrating all the interested parties.
- There is no single governance model, but this rather adapts to the reality of each State and each cluster, creating highly heterogeneous executive management teams.
- Great importance is given to the capacity for continuous evaluation to ensure continuous improvement in cluster operation.

4.1.3 Asia

Experiences in Asia are characterised by a high level of **centralism exercised by national governments**, with little participation from regional authorities (if any), both in defining and implementing cluster policies. In any case, it is clear that the government plays an active role both in terms of strategy and of operational management.

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7 U.S. Small Business Administration (2017). SBA Supports 58 Federally Funded Cluster Initiatives.

In general terms, the political priorities have focused on **strengthening the level of association in strategic export sectors**, with the aim of achieving a critical mass to develop projects on an international scale.

Japan has a clear cluster strategy linked, to a large extent, to the knowledge economy. The Ministry of Economy, Trade and Industry (METI) launched the Industrial Policy for Clusters (oriented towards innovation, research and business hubs) in 2001.

Another of the region's experiences linked to innovation is **South Korea's** Industrial Complex Cluster Programme (ICCP). The ICCP initiative (approved in 2005) led to the creation of *Pan Regional Clusters*, helping to spread cluster programmes to other industrial complexes throughout the country and creating the so-called "Mini Clusters" (MCs).

In the case of **Thailand**, cluster strategy is aimed at concentrating industries in strategic locations and at integration with local economies. The government implemented the Special Economic Zones and promoted the creation of clusters (Super Clusters and other target clusters) around them.

The main lessons drawn from Asian countries' experience in cluster policy are:

- Economic development through **driving innovation** (Japan).
- Clusters for **rural development** (cases of Vietnam and India).
- Case of **spatial approximation** "One Town-One Production" (China case).
- Cluster policy aimed at **regional economic stimulation**.
- Clusters linked to **local resources and capacities**.
- Government support for the creation of **industrial zones**.
- The **government is the main structure** that creates special agencies to attract FDI and foreign aid for business development.
- **Top-down approach** as the basis of cluster policy.

4.1.4 Latin America and the Caribbean

Several Latin American and Caribbean countries have implemented national policies to support clusters (directly or indirectly), with particular emphasis since the early 2000's.

To give an account of the current state of the set of experiences, we have considered the contributions of the participants in the Competitive Clusters Project during the first phase (2014-2015), as well as the studies and assessments carried out in Brazil⁸

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8 See:

- Lastres H., C. Pietrobelli C., Caporali R., Soares M., Matos M. (org.) (2012). A nova geração de políticas de desenvolvimento produtivo: sustentabilidade social e ambiental, CNI, Brasília.
- Matos M.P., Borin E., Cassiolato J.E. (org) (2015). Uma década de evolução dos arranjos produtivos locais, E-Papers, Rio de Janeiro.
- Matos M.P. et al. (org) (2017): APLs: referencial, experiências e políticas em 20 anos da RedeSist. E-Papers, Rio de Janeiro.

and the assessments and analyses performed by the Inter-American Development Bank (IDB)⁹.

A stylised summary is presented below of LAC experiences with cluster policies based on the above:

- Cluster policies have indeed **promoted greater business cooperation, innovation and competitiveness** in these productive ecosystems and, in particular, have contributed to overcoming the restrictions which SMEs located in LAC face in growing and internationalising.
- These policies have also, through support to more emergent clusters and those in less industrialised regions, **contributed to reducing productivity gaps and regional inequalities** and to achieving greater social inclusion by creating jobs.
- However, until now, **cluster strategies have been structured in a hierarchical manner in few LAC countries**: in many cases their implementation has been piecemeal and transitory and in others they have not even been considered within the menu of industrial policies.
- In most cases, **cluster policies were developed in isolation, i.e. without coordination or consistency with other national and regional policies** that are also relevant for the success of the clusters, such as industrial and sector, infrastructure, professional training and science, technology and innovation policies.

The following can be mentioned among the main lessons to be learned from LAC cluster policies:

- **“Encapsulation” of cluster strategy needs to be avoided**, as it needs to be strongly linked to the broader context of national and regional development policies.
- Cluster strategies **need to be provided with institutional structures** (national, regional and local) and instruments in accordance with the systemic nature of the intervention.
- **It is not relevant or effective to apply traditional instruments and incentives exclusively** (for access to credit, innovation, internationalisation, etc.) aimed at individual firms.
- Due to the great heterogeneity of regional productive structures and clusters, and to the diversity of stages of institutional/technological/ productive maturity, **cluster policies need to be flexible** and cannot refer to a single model.
- **Training of the public and private actors involved**, organisation of appropriate governance, but also achieving tangible results with short-term collective projects

9 See:

- Casaburi, G., Maffioli, A. Y Pietrobelli, C. (2014). More than the Sum of its Parts: Cluster-Based Policies, in G. Crespi, E. Fernandez-Arias, and E. H. Stein, eds., Rethinking Productive Development: Sound Policies and Institutions for Economic Transformation. Washington, DC: Palgrave Macmillan and Inter-American Development Bank.
- Maffioli A., Pietrobelli C., Stucchi R. (ed) (2016). The Impact Evaluation of Cluster Development Programs. IBD, Washington D.C.
- Pietrobelli C. (2015). ¿Qué lecciones ha aprendido América Latina y el Caribe en materia de políticas de clúster?

are key factors in ensuring the success of the cluster, as well as the sustainability of cluster promotion and management activities once public support has ended.

- Formulation of **effective internationalisation strategies** for more mature, competitive clusters.
- **Promotion of productive links** and technology transfers **between related clusters** (at regional, national and international levels), so as to unlock future **related potential for diversification**, according to needs for diversification from the current archetype based on raw materials to niches with the greatest intensity of knowledge and added value.
- Support for the development of **strategic intelligence** of clusters in the market segments in which they act.
- Active promotion of **alliances and possible attraction of foreign companies** or large firms, which have a favourable impact on the process of maturing and internationalising clusters, etc.
- Avoid confusing support “for the cluster manager” with support “for the cluster”.

4.2 Clusters and smart specialisation

International experiences point to a need to coordinate and integrate cluster policies and territorial innovation and competitiveness strategies, shaping a new territorial paradigm/governance model.

The analysis of cluster policies at international level seems to point to a trend to convergence between these policies and those for regional development, towards one of the challenges identified by all international experiences: **the need to coordinate cluster policies with broader strategies for territorial innovation and competitiveness.**

In the last two decades, **clusters have become elements which help to explain territorial development** (nationally and, above all, regionally) **as well as instruments of policy** for this purpose. Their relevance as instruments is justified by a need which is not covered traditionally, to reduce the gaps and differences of interest of the various agents in a territory: their very description carries the definition of the desirable condition of promoting “constructive” cooperation (not lobbying), without undermining the competition that the market needs to ensure the efficiency of the system.

The **cluster** is understood as an **agglomeration phenomenon** of the economic structure itself, a **cluster initiative** is the formalised entity, which is sometimes put into effect to **represent and revitalise the collaborative work** between the various members of the cluster.

On the other hand, the prominent positioning of cluster policy has been accompanied lately by a resurgence of territorial development: in recent years, especially in Europe, but also in the LAC region¹⁰, **Smart Specialisation has become the main theoretical**

¹⁰ This approach has explicitly inspired the recent “Estrategias estatales y regionales de innovación” [State and regional innovation strategies] initiative in Mexico and the “Programas estratégicos de especialización inteligente” [Strategic smart specialisation programmes] initiative in Chile.

trend for promoting economic development at the micro level and for reducing differences between territories.

Smart specialisation can be defined as “*priority -setting which at a regional level is carried out in a series of activities and/or technological domains which are potentially competitive and capable of generating new activities, in a global context facing competition from other places*” (Foray et al. 2009¹¹ and McCann and Ortega Argilés 2011¹²).

Smart specialisation as a development model can be broken down into three main elements, focused on maximising the comparative and competitive advantages of a territory in a global context. Specifically:

- a. **Prioritisation** of a limited number of value chains capable of generating competitive advantages in the territory,
- b. The search for **related diversification** based on prioritised specialisation niches, and
- c. The interconnection of the previous two elements in a context of **global value chains**.

The conceptual similarity and, above all, the potential synergies, have led the two concepts (clusters and smart specialisation) to converge, reinforcing each other to promote the economic development of a territory (smart specialisation at the strategic level, clusters at a more instrumental, operational level).

Convergence has occurred between the cluster concept and smart specialisation policies: the former at an instrumental level and the latter at a more strategic level.

By analogy, the existing literature on clusters and smart specialisation has suggested similarities and synergies between clusters and elements of territorial smart specialisation, noting for each element:

- **Prioritisation of specific patterns of specialisation:** clusters are an indicative reflection of the current and potential pattern of specialisation of territories. Additionally, their initiatives are a simple channel for reaching (accessing) the critical mass they represent.
- **Specialised diversification, through exploitation of regional related variety** (relationship of different activities and technologies): cluster initiatives facilitate quadruple helix relationships, not only within the sector, but also between different sectors. They also contribute to technological hybridisation through inter-cluster processes or by identifying and seeking support for entrepreneurial discovery initiatives.
- **Integration of the search for specialisation and diversification into global value chain logic within territories:** clusters are good channels both for the

11 Foray, D., David, P. A. Y Hall, B. (2009). “Smart Specialisation: the concept” in Potocnik’s “Expert Group Knowledge for Growth Report”.

12 McCan, P. and Ortega-Argilés, R. (2011). “Smart Specialisation, regional growth and applications to EU Cohesion policy”. Economic Geography working paper 2011.

internationalisation of companies (especially SMEs) and for the identification of global trends, favouring international positioning of territories in those niches where they can develop and defend competitive advantages that enable them to maintain territorial development that can be sustained over time.

This new policy trend which suggests progressive convergence between the two approaches (strategic for smart specialisation and instrumental for clusters) **can provide a direct response to the main differences and obstacles highlighted by LAC participants:**

- On the one hand, from the general perspective of territorial development policies: how to make the objectives filter through to the day-to-day implementation of policies, how to involve the various agents, how to bring the various levels – strategic/operational, national/regional/local – closer together, etc.
- On the other hand, from the specific perspective of cluster policies: how to ensure viability of cluster initiatives over the medium- and long-term, how to achieve more strategic and territorial dimensions, how to successfully and proactively involve the agents, etc.

4.3 Clusters as tools for RIS3 Strategies

These synergies and complementary aspects between clusters and smart specialisation have opened the way (especially in Europe) to moving towards new **governance and strategy-building models** (contributing to driving economic transformations in territories with a systemic scope) **through the coordination and integration of Cluster Initiatives and Policies into Smart Specialisation Strategies (RIS3).**

The RIS3 Guide published by the IPTS sets out the steps¹³ for preparing Smart Specialisation Strategies (RIS3):

1. Set the basis on a participatory governance process that integrates and involves the main regional agents with impacts on the elements of smart specialisation. Participatory construction is a cross-cutting element or stage that accompanies all strategy development phases, prioritising a “bottom-up” approach.
2. Use as a foundation a prior strategic reflection on the strengths and weaknesses of the region, as well as on the opportunities and threats of the context in which it is inserted. The objective of this stage (definition) is to lay the foundations of the strategy, based on a diagnosis that makes it possible to identify the pattern of economic and technological specialisation, its comparison in the global context and the possibilities for specialised diversification through entrepreneurial discovery processes/initiatives.

¹³ The six steps set out by the RIS3 guide published by the IPTS are: 1) analysis of regional context and potential for innovation, 2) governance for participation and commitment, 3) developing an overall vision of the region's future, 4) identification of priorities, 5) identification of a coherent mix of policies and measures, and 6) integration of monitoring and evaluation mechanisms.

3. Clearly prioritise the actions and measures to be carried out to meet the objectives set in the strategy (implementation).
4. Identify the regional resources to be committed within the framework of the RIS3 priorities and actions, as well as those that are potentially complementary at a national/international level.
5. Establish necessary and sufficient mechanisms to maintain follow-up and updating in each case of the RIS3 priorities and measures (evaluation/monitoring).

Cluster Initiatives play a leading role in building RIS3 Strategies due to their participation and contribution during all phases of the process, the results of which, ultimately, are passed on to them.

Table 1: How can you organise clusters into a regional/national development strategy? The RIS3 case

RIS3 Phases	Contribution of clusters To RIS3s
DEFINITION	Cluster initiatives can be used to identify the most outstanding specialisation patterns (economic) in a region, as well as the key enabling technologies applicable to them liable to be prioritised within the framework of the strategy.
IMPLEMENTATION	Cluster initiatives can be used as effective platforms aimed at contributing to technological hybridisation and the application of thematic policies and initiatives, as well as for identifying and channelling support for entrepreneurial discovery initiatives.
MONITORING	Cluster initiatives can be used as effective platforms that provide transparency for the evaluation, monitoring and follow-up process, as well as to collect information in real time to improve and redefine RIS3 when necessary.

Source: Del Castillo, J.; Barroeta, B.; and Paton J. (2013). "RIS3 policy instruments: cluster".

As indicated above, the **definition** of Smart Specialisation Strategies needs to be based on a clear identification of the region's assets and its comparative and/or competitive advantages in relation to other territories. In this regard, Cluster Initiatives (CI) can play an important role in identifying the regional patterns of specialisation and can help to better understand the relative position of a region in an activity in relation to other regions (such as cluster mapping and benchmarking actions), as well as identifying enabling technologies liable to being prioritised within the framework of the strategy.

Table 2: Contribution of Cluster Initiatives (CI) in the DEFINITION of RIS3s

IDENTIFICATION OF KETs (considering specialisation)	CIs can help to identify cross-cutting (and emerging) technologies applicable to cluster strategic activities and, therefore, potentially strategic for the region. CIs are a source of up-to-date information on competitive and technological trends as a result of direct contact with their R&D companies and agents, and of the international networks in which they participate.
IDENTIFICATION OF RELATED VARIETY (considering connectivity)	CIs can help to identify the boundary of joint development possibilities existing between differing but related technological domains for technological hybridisation projects. CIs are suitable mechanisms for identifying, driving and facilitating (through inter-cluster dynamics) entrepreneurial discovery processes and initiatives, as complex value chains are developed in them, which increasingly extend beyond regional boundaries and form global value chains.
BENCHMARKING (considering the global context)	CIs can help to gather information on other strategies (and their priorities) to evaluate the region's relative position and potential for comparative advantage in the cluster's activities. CIs participate in other networks of a regional, national and international dimension which provide information from other CIs and other regions and their respective patterns of specialisation.

Source: Del Castillo, J.; Barroeata, B.; and Paton J. (2013). "RIS3 policy instruments: cluster".

Implementing RIS3s requires intermediation instruments capable of putting into effect and mobilising the strategies in practice. The closeness and extensive reach of Cluster Initiatives throughout the whole business fabric (which they represent) makes them valuable instruments for implementing actions within the framework of the strategy.

They can also have a multiplier effect on its results, thanks to their ability to foster processes for participation among their members, opportunities for cooperation with other clusters (inter-cluster collaboration) and access to other international networks. In this regard, Cluster Initiatives can be used as effective platforms aimed at contributing to technological hybridisation and the application of thematic policies and initiatives, as well as identifying and channelling support for entrepreneurial discovery initiatives.

Table 3: Contribution of Cluster Initiatives in the IMPLEMENTATION of RIS3s

SYSTEMIC R&D&i POLICIES (considering specialisation)	CIs can help to define instruments based on a combination of supply and demand, support entrepreneurial discovery initiatives and networks for reaching critical mass around the selected priorities. CIs are valuable instruments for identifying entrepreneurial discovery initiatives between their members or between new entrepreneurs/spin-offs, as well as increasing opportunities for financing.
INTER-CLUSTER COLLABORATION (considering connectivity)	CIs can help to identify specific projects in the field of technological hybridisation between clusters which are different but related, through entrepreneurial discovery initiatives. CIs are also capable of generating, in an induced manner, entrepreneurial discovery processes and consolidating them in initiatives not only at the regional level, but also internationally, through inter-cluster collaboration dynamics and mechanisms.
INTERNATIONAL NETWORKS (considering the global context)	CIs that participate in international networks (institutional, technological and business) can help to identify worldwide trends and benefit from the "spill-over" they generate. CIs are good access channels for companies (especially SMEs) and other regional agents of networks of international scope.

Source: Del Castillo, J.; Barroeta, B.; and Paton J. (2013). "RIS3 policy instruments: cluster".

RIS3s need to be understood as a dynamic process, which needs to remain aware of the changing needs of the environment, continuously updating their objectives and priorities. The specific actions, instruments and entrepreneurial discovery initiatives to be promoted also need to be continuously re-examined to ensure that they progressively adapt to changing reality.

The fact that Cluster Initiatives are in continuous contact with economic reality (and their ability to understand and transmit the companies' needs and opinions) makes them effective platforms for providing transparency for the process of **evaluation, monitoring and follow-up**, as well for collecting information in real time to improve and redefine the RIS3 strategies when necessary.

Table 4: Contribution of Cluster Initiatives to the MONITORING of RIS3s

VIGILANCE (considering specialisation)	CIs can help to follow-up (in a participatory manner) on the actions, enabling ad hoc corrections to the content of the Strategy. Due to the extensive reach and closeness of the CIs to the companies and other regional agents which participate in the clusters, their participation in the strategy monitoring committee can facilitate the updating of needs, trends and changes in the regional innovation system.
METRICS AND RELATIONAL DYNAMICS (considering connectivity)	CIs can help to incorporate indicators and methodologies for measuring the consistency of the priorities and actions as a whole over the medium and long term. Identifying the related variety and entrepreneurial discovery processes/initiatives requires complex metrics. CIs can help to define and collect input, process and result indicators on these, both at a regional and an international level within the scope of their networks. They can also help to interpret those results according to the logic of business activity on the ground.
COMPARABLE INDICATORS (considering the global context)	CIs can help to define indicators that can be adapted to the regional reality (and priorities), but which are available or similar in other regions to allow relative comparison. The comparability and availability of data at international level are elements where CIs can play an important role thanks to their own future-oriented observatories (or other initiatives, such as TCI, the European Cluster Observatory, etc.).

Source: Del Castillo, J.; Barroeta, B.; and Paton J. (2013). "RIS3 policy instruments: cluster".

4.4 Some reflections about cluster and smart specialisation convergence in LAC

The analysis carried out in this document on cluster experiences internationally and in LAC in particular¹⁴ made it possible to corroborate the diversity of the experiences implemented in this area. Similarly, this exercise has shown some of the limitations or problems they commonly share:

- First, cluster policies in LAC would need to **have continuity and a higher hierarchical level in public innovation and competitiveness agendas** (nationally and regionally).
- Secondly, due to the heterogeneity and specificity of each region/ sector/ cluster, it appears to be inappropriate to follow single development models. It is useful, on the other hand, to **differentiate interventions based on the taxonomy of existing**

¹⁴ Relating to information provided by Competitive Clusters Project Working Group participants.

clusters. It is also important to consider existing resources and capacities when defining cluster policies and not to attempt to create clusters “from scratch”.

- Thirdly, **cluster policies will need to be carefully structured within the set of regional and national policies** aimed at productive transformation and competitiveness, given that the performance of clusters also depends on exogenous factors (sector, infrastructure and logistics, etc.) and above all on their level of integration into the institutional and productive logic of the territory.
- Fourthly, it is important for **cluster policies to form an active part of broader strategies for territorial innovation**, to take advantage of synergies and the potentials this convergence of policies can bring.
- Fifthly, **the success of actions depends on the active participation of the agents involved**, making it necessary to devote effort to contributing to **raise the awareness** of agents in the public and private sectors (government, industry, academia, communities of users) and to structuring **appropriate governance**. This participation must accompany **all phases** of policy development: **formulation, implementation and monitoring/evaluation**.
- Finally, it is important to **promote greater internationalisation of the most innovative and competitive clusters and their insertion into international alliances and/or value chains**, for which *ad hoc* strategies are needed.

5. THEME 2: CLUSTER POLICY AND INNOVATION STRATEGIES IN THE BASQUE COUNTRY CASE

SUMMARY OF THEME 2

In this chapter the **experience of the Basque Country** is presented in detail, as an example of the maturation and evolution of cluster policies in the European context. The Basque case shows the great weight of the clusters and the high level of their contribution to the regional GDP. The application of Smart Specialisation Strategies has been one of the main challenges for the cluster policy in the recent period. The Cluster Associations have played a leading role during all phases of the Regional Strategy, which illustrates the type of interaction between these two policy levels.

In contrast, and although the situation is very heterogeneous, in LAC there is a general weakness in policies, institutions and regional infrastructures dedicated to productive development and above all to innovation. Only in the recent period has there been greater concern and a favourable evolution in this sense. Although the degree of clustering of the productive structure seems to be less strong in LAC than in the EU, the contribution that clusters can make when implementing regional innovation strategies should not be disregarded.

5.1 Context of the Basque Country case

Basque Country cluster policy emerged in the early 1990s in the context of economic recession, when the region started to lose its competitive advantage (with a model largely focused on price competition, in sectors such as steel, shipbuilding and heavy industry) within the international context, where greater intensity in innovation and knowledge began to displace competition models based merely on cost reduction.

Under those difficult circumstances, a change took place in the public sector intervention approach to more systemic, proactive policy approaches to productive development. The Basque institutions, led by the Basque Government, designed and implemented a Competitiveness Programme, containing the first mention of clusters, as elements which could play a key role in the competitive performance of the Basque

economy, and it was decided to design and implement a cluster policy, through various Cluster Initiatives.

The guiding principles of the cluster policy were as follows: the proactive role of Government, innovation as the basis of the new model (technological sophistication), diversification, competition and cooperation of companies as a source of competitiveness compared to the outside, avoiding recourse to protectionist policies.

It is very important to emphasise that, since cluster policy development was decided, the **commitment of Basque Country public institutions (regardless of political allegiance) to the cluster policy** has remained constant over time, **adapting** to the different needs and challenges which have emerged, but retaining the conviction of the importance of **favouring continuity and strengthening Cluster Initiatives as policy instruments and catalysts for the cooperation and competitiveness of companies** and, hence, as **levers** for boosting development and growth in the region.

Cluster policy in the Basque Country is the result of a long constructive process. In general terms, three main stages can be identified in its development.

5.2 Formation stage: 1990-2000

In 1990 an initial selection of 9 clusters was made, and a participatory process was carried out to assess the proposal, through the creation of several Working Groups (one for each selected cluster) in which representatives of companies, training centres, technology centres and representatives of Government participated.

This process complemented the initial proposal with the incorporation of other visions (from other agents and interested parties), enabling the configuration of the new associative model to be adapted to the particular features of the territory and its economic reality, from a bottom-up dynamic which left leadership of the process in the hands of each cluster. The latter aspect was essential to ensure the commitment of the private sector. In fact, as can be seen later, in those clusters where private initiative did not take responsibility, the partnership was not formalised or took much longer.

Carrying out the process described above led to the construction of various Basque Country Cluster Associations throughout the 1990s. The Eiken Basque Audio-visual Cluster joined the original 10 Associations in 2004, forming the first block of 11 Basque priority clusters¹⁵, which have formed the core of the policy for three decades due to their importance in the Basque industrial fabric. The Associations (i.e. the formalised Cluster Initiatives) seek to further the synergies generated spontaneously in the

¹⁵ The first 11 priority Cluster Associations were (year of creation of the Cluster Association between brackets): AFM. Machine tools (1992); ACEDE. Household appliances (1992); ACICAE. Automotive (1993); UNIPORT. Port of Bilbao (1995); ACLIMA. Environmental industry (1995); GAIA. Electronic, information and communications technologies (1996) ENERGY CLUSTER. Energy (1996); FMV. Naval construction (1997); HEGAN. Aeronautics and Space (1997); CLUSPAP. Paper (1998); EIKEN. Audiovisual (2004).

natural clusters due to concentration of critical mass and the processes for generating and exchanging knowledge.

One of the main challenges during this stage was to ensure the configuration of working networks and to reinforce the trust and commitment of the private initiative with these new Cluster Associations. The actions and support measures designed initially were aimed at **projects that were low-risk but which produced rapid results, demonstrating the usefulness of Cluster Associations and the commitment of private agents to them.**

5.3 Strategic focus on the cooperation and diversification Stage: 2000-2012

The year 2000 saw the first turn of the policy screw with a clearer, more explicit definition of the mission of the Cluster Associations: to improve the competitiveness of the associated companies through cooperation, tackling strategic competitive challenges that cannot be tackled individually.

The basic challenge of cluster policy during this stage was to achieve effective cooperation among the partners of existing Initiatives (Mandell et al. 2009)¹⁶ by improving members' management of diversity (in size and capabilities) and seeking to fortify a common vision and awareness of the benefits of cooperation, focused on addressing strategic challenges.

On the other hand, the increasing appearance of more localised clusters (in most cases formed of smaller companies), but with potential **to encourage the participation of other companies and to diversify the economy towards new activities**, introduced a new element to be considered in the policy agenda.

As a response to both challenges, **cluster policy evolved towards a two-tier programme** (opening up to new associations called **pre-clusters**), which provided support to 12 clusters and 10 pre-clusters. The **new pre-cluster classification met the need to incorporate new sectors of strategic interest** through these figures.

Between 2008 and 2012, these reflections led to the design of a policy for support to the "pre-clusters"¹⁷ as structures which were less consolidated than the 11 priority clusters, but with the promise of future competitive capacity, enabling diversification and expansion of the Basque industrial and services fabric.

16 Aranguren, M. J., De la Maza, X., Parrilli, M. D. and Wilson, J.R. (2009). Asociaciones clúster de la CAPV: desempeño y retos. Bilbao: Publicaciones Deusto.

17 The 10 "pre-clusters" created between 2008 and 2012 are as follows: AFV. Casting; BASQUE BIOCLUSTER. Biotechnology; HABIC. Habitat; HERRAMEX. Hand tools; SIDEREX. Steel exporters; SIFE. Forging; MAFEX. Railways and railway equipment; ERAIKUNE. Construction; LANGUNE. Language industries; FOOD CLUSTER. Foodstuffs.

At this stage of consolidation and strategic focusing, the Cluster Associations were composed of a General Assembly and a Board of Directors (management body)¹⁸. The working unit of the Cluster Associations is the Working Committees, in which **Thematic Groups** are established, linked mainly to three areas of work: **technology, quality and internationalisation**. In addition to these Thematic Groups, **the clusters generally participate in other Thematic Groups with other clusters and research and innovation centres, with the aim of empowering the cluster partners to lead the actions** in the issues that most concern them (Monge, 2016)¹⁹.

Within this framework, the following can be highlighted as principal results: The launch of technological cooperation projects, both within each cluster and between different clusters (electronics for automotive, automotive and machine tools, energy and the environment), the creation of several export consortia and a very considerable improvement in the implementation of Management Excellence according to the EFQM model (large companies have exercised a pull effect on smaller companies in this respect).

In relation to the commitment of Government to cluster associations, the appropriate Basque Government Directorate has participated continuously in operations with specialists who play a **vertical** role (specialists in a specific cluster) and another **horizontal** role (specialists in one or more strategic areas)²⁰.

This is a **matrix-based system** which makes it possible to share information throughout the system: the specialists, in their vertical role, attend meetings of the cluster associations for which they are responsible, and, as horizontal specialists, they attend the meetings of the committees for each area in which all the cluster associations take part.

The cluster policy developed by the Basque Government has not involved a large allocation of resources (around three million euros a year), with a decreasing contribution to funding the Cluster Associations in relative terms, which has been rated by various authors as “a cheap form of collaboration”. **On the contrary, the Government has promoted a leading role for and integration of the Cluster Associations both into its own productive and competitiveness policies and programmes** (Business Competitiveness Plan in 2010²¹), **and in other cross-cutting policies and programmes related to innovation** (various Science, Technology and Innovation Plans and current RIS3 of the Basque Country).

18 The Board of Directors comprises representatives of its associated companies (selected on the basis of evaluation of their size and demand-pull capacity), specialists from the Public Authorities, technology and training centres, agents from the Red Vasca de Ciencia y Tecnología [Basque Science and Technology Network] and from banking). In relation to the administrative structure of the cluster associations, this has been kept small over time (apart from exceptions such as GAIA and AFM), with a limited number of administrative and technical personnel, tending to subcontract all those activities which can be outsourced to maintain a structure which is as small as possible.

19 Monge, R., et al. (2016). Políticas de clústeres y de desarrollo productivo en la Comunidad Autónoma del País Vasco. Lecciones para América Latina y el Caribe. Lima: OIT.

20 The average number of SPRI (Basque Country Business Development Agency) specialists linked to cluster associations is around 10 people.

21 The targets set by the cluster policy in the framework of the Competitiveness Plan (2010-2013) were referred to: the number of cluster and inter-cluster strategic collaboration projects, the number of new pre-clusters, number of horizontal and vertical collaboration agreements.

5.4 Cluster management transformation and adaptation to RIS3: 2013-2018

After a journey of almost 25 years, Basque cluster policy in 2013 was a robust and settled policy with a total of 22 Cluster (12) and Pre-cluster (10) Associations. Here, the planned objectives had been attained to a reasonable degree.

From then on, cluster policy management passed to SPRI, the Basque Business Development Agency, to attempt to take advantage of synergies with other business support programmes.

The main changes in cluster policy at the start of this period were motivated by rethinking the **effectiveness and efficiency of the cluster policy itself**, which then needed to respond to a larger number of cluster associations (over twenty associations) and **the suitability of redirecting and differentiating economic support to those fields where the Cluster Associations had greater capacity to make an impact**.

As a response to these matters, a series of **requirements or criteria were established for cluster associations to be funded**²² through access to the cluster support programme:

- **Aligning the cluster concept with the policy.** Alignment with specialisation priorities and/or RIS3 niches of opportunity and the prioritisation of internationalisation, technological innovation and entrepreneurial innovation activities are evaluated.
- **Compliance with minimum criteria.** Having a critical mass (turnover of over 1% of GDP), including companies among its members which cover the whole value chain oriented to a final market or a segment of same (trailblazing companies which ensure the relevance of the results) and consisting of 60% at least of SMEs (encouraging participation in integrative activities of broad scope).
- **Approval of a Strategic Plan**, which must identify common challenges with responses proposed through cooperation.

Although it may be understood that **application of these obligations and/or constraints** would leave cluster associations with less chance of meeting the criteria established out of public support, **it has encouraged the creation of alliances and convergences, facilitating the incorporation of various Cluster Associations into new value chains or operating areas**²³.

In addition to these measures applied through funding instruments, at an operational level the cluster associations must also submit an annual **Action Plan** to the SPRI

²² ORDER, of 13 April 2016, of the Regional Government Ministry for Economic Development and Competitiveness, regulating the Basque Country Autonomous Community programme for support to cluster organisations.

²³ There are several examples in this regard: AFV (casting) converged with FUNDIGEX (castings exports); ESKUIN (industrial supplier) converged with AFM (advanced manufacturing), EIKEN (audio-visual) incorporated several associations to create a digital and creative contents cluster; UNIPORT (Port of Bilbao) converged in a federation with MLC-ITS (mobility and logistics).

(presenting planned activities, indicators, timetables and economic proposals for the year in question, which will be used by the SPRI to make decisions on the provision of public funds to support the association's activities) and the aforementioned **Strategic Plan** (establishing the spheres of action for 3-5 years, indicators, implementation deadlines and the economic proposal with regard to forecast resources)²⁴.

Table 5: Overview of Cluster Associations in the Basque Country Autonomous Region in 2017

Cluster Association	Economic activity	Turnover (million euros)	Exports (million euros)	No. of Companies	No. of Jobs
HEGAN Basque Country Aeronautics and Space Cluster Association	Aeronautics	906	574	45	4,225
Basque Country Foodstuffs Cluster	Foodstuffs	1,639	307	72	5,234
ACICAE Basque Country Automotive Cluster	Automotive	14,800	13,300	120	24,102
Basque Health Cluster	Bio health	361	103	32	1,611
ERAIKUNE Construction Cluster	Construction	1,567	318	67	6,586
EIKEN Basque Audio-visual & Digital Content	Digital Content	792	21	126	6,085
Energy Cluster	Energy	43,998	10,584	352	13,348
MAFEX Spanish Railway Association	Railway Equipment	1,800	1,450	34	11,700
Basque Country and Navarre Casting Association	Casting	1,206	809	55	7,188
HABIC	Habitat, Wood, Office and Contract	1,320	457	115	5,585
Basque Maritime Forum	Maritime Industries	2,645	1,952	238	12,720
ACLIMA Basque Country Environmental Industries Cluster Association	Environment	1,818	400	90	4,700
Basque Country Paper Cluster Association	Paper	1,043	554	33	2,190
SIDEREX	Steel Products and Installations	3,162	1,985	49	13,313
AFM Advanced Manufacturing Technologies	Machine Tools and Components	1,370	856	128	5,580
GAIA	TEICs	3,085	1,160	247	11,450
BLCM Basque Country Mobility and Logistics Federation	Transport and Logistics	22,887	6,846	230	139,629

Source: Orkestra (2017). Informe de Competitividad del País Vasco 2017.

²⁴ These Plans were established initially as from the Order of 20 November 2000 in the Official Basque Country Gazette.

The application of Smart Specialisation Strategies in the Basque Country Autonomous Region **has been one of the main challenges for cluster policy during this period.** Here, cluster associations have played a **leading role, throughout all the phases of the Strategy:**

1. In the **definition phase**, the Cluster Associations constituted an excellent indicator and source of information for identifying patterns of specialisation in the region (Basque cluster associations cover the majority of specialisation sectors in the economy and over 65% of employment).
2. In relation to the **implementation phase**, the Basque Cluster Associations are active participants in the Basque Science and Technology Network (RVCTI) as intermediate instruments to connect business needs to the supply of knowledge, in addition to being in a better position to identify emerging future opportunities within the various technological frontiers.
3. As for the **evaluation and monitoring** phase, Basque cluster policy has developed a monitoring framework through the Cluster Associations, under the Sector Strategic Observatories, which is very useful for observing competitive needs during the RIS3 strategic process.

The central point of the RIS3 is the identification of **three strategic priority areas: Advanced Manufacturing, Energy, Biosciences and Health.** Together with these three priorities, RIS3 also identifies **four niches of opportunity in Foodstuffs, Creative and Cultural Industries, Urban Habitat and Environmental Ecosystems.**

In practice, the phase since the Plan was adopted has been characterised by generating a process aimed at **further improving RIS3 governance mechanisms** to guide its practical implementation, and at **promoting entrepreneurial discovery processes in each of the areas identified.**

As part of the governance system of the RIS3, the **Steering Groups (SGs)** are made up of representatives of the quadruple helix (public authorities, cluster companies and scientific and technological agents), where the cluster associations play a key role. Seven Steering Groups have been set up (one for each priority area and niches of opportunity) to explore and develop each of the RIS3 strategic priorities. In addition, these groups need to explore synergies where they meet other priority areas and niches of opportunity. This makes them central mechanisms for **stimulating the entrepreneurial discovery processes** that need to feed the continuous development of Basque RIS3 (Orkestra, 2016)²⁵.

The initial leadership of the Groups by Government then passed to private agents, with noteworthy involvement by companies (**distributed collaborative leadership**), mainly channelled through the cluster associations.

²⁵ Orkestra (2016). Implementar la RIS3. El caso del País vasco.

Finally, the Basque cluster associations not only participate in the Working Group for their area of specialisation, but there are also **mechanisms for participation between sectors** (such as the Advanced Manufacturing Group Inter-cluster Forum) that connect the Groups with other organisations and experts from companies and scientific/technological agents, facilitating a broader vision and alignment of the projects.

5.5 Some reflections for LAC

The picture in Latin America and the Caribbean is very different in these matters from that described above for Europe and for the Basque Country in particular. Although the situation in LAC is very heterogeneous, what is seen traditionally in general is **great weakness of regional policy, institutions and infrastructures for developing production and, above all, innovation**. Only in recent times has greater concern and favourable development been seen in this regard.

There are also differences in the level of clustering of the productive structure. The Basque Country case shows the great weight of the clusters and their large share of regional GDP. It is not common to find regions in LAC where clusters concentrate such a large portion of the productive structure.

To develop faster, clusters need broader positive contexts than the specific policies for clusters: regionally, they need to be embedded in innovation and competitiveness ecosystems that enable them to be competitive. Hence the importance of Regional Innovation Strategies, which include (and are reinforced by) the clusters in each territory.

Chapter 3 already elaborated on the level of progress and experience in LAC with development policies for clusters. We will focus here, therefore, on LAC progress in formulating regional development and innovation strategies and, more recently, RIS3.

There are **structural, social and political barriers and difficulties**, which have limited the development of regional strategies in LAC countries²⁶. Outstanding among them are the following:

- **Weak political will of regional and national authorities to move towards decentralised development strategies**, especially in the fields of research and innovation.
- **The high level of political centralisation affects the regional level of intervention, the technical capabilities available and the institutional configuration.**

Several LAC countries have been making efforts for several years to drive greater decentralisation in general and of innovation policies in particular. Even the RIS3

²⁶ Barroeta B., Gómez Prieto J., Paton J., Palazuelos M.: Innovación y especialización regional en América Latina, 2017, EUR 28511 ES, doi:10.2760/38892.

approach itself inspired some recent initiatives that aimed to drive regional innovation agendas, but also incorporated components to promote Clusters.

In **Brazil**, the innovation policies in each State have consolidated traditions and institutional structures, although with large differences in capabilities and resources between States. It is striking, however, that these spaces generally had no prominence in the cluster policies implemented most recently.

According to Campos et al (2010)²⁷, cluster policies can be said to have served in Brazil to assess local and regional levels as subjects of development policies. This undoubtedly opens the way for the consolidation of regional innovation strategies, which in many cases preceded cluster policies.

Finally, the RIS3-PE (Smart Specialisation Strategies in Selected Innovative Territories) Project was launched in the State of Pernambuco in 2017. This is a pilot initiative which may lead to the implementation of other RIS3s in the country. The RIS3-PE Project is aligned with the “Science, Technology and Innovation Strategy for Pernambuco 2017-2022”, which also considers the strengthening and integration of habitats for innovation, such as the Cluster Development Projects in that State.

In 2014, the government of **Mexico** launched the State and Regional Innovation Agendas initiative, *“with the aim of articulating and defining sector priorities and smart specialisation areas and driving strategic innovation projects at the regional level. These mainly focus on the specific capabilities and economic vocation of each entity and region, with a view to developing their potential to innovate and compete in the regional, national and global context”*²⁸. Each Mexican state currently has its own Agenda, and an important part of these lies in supporting the various clusters in their innovation projects.

In turn, **Chile** launched the “Strategic Smart Specialisation Programmes” in 2015 to promote greater diversification and sophistication in its productive matrix. The initiative covers various productive sectors and technological and service activities (Mining, Fisheries and aquaculture, Advanced manufacturing, Logistics, etc.). It basically consists of organising public/private coordination bodies to select and drive innovation, infrastructure and productive restructuring projects nationally, but also regionally.

According to Barroeta et al. (2017)²⁹, it was concluded that, in spite of the existence of differentiated contextual conditions and factors for applying the smart specialisation concept in the EU and in Chile, the following common aspects appear in both processes:

27 Políticas Estaduais para Arranjos Produtivos Locais no Sul, Sudeste e Centro-Oeste do Brasil, UFSC, Florianópolis.

28 <http://www.agendasinnovacion.org/>

29 Barroeta B., Gómez Prieto J., Paton J., Palazuelos M.: Innovación y especialización regional en América Latina, 2017, EUR 28511 ES, doi:10.2760/38892.

- Ascending dialogues between the agents of innovation ecosystems to identify specialisation priorities,
- Specific investments, and
- a profound concern about the importance of good governance and cooperation inside and outside a region.

The support strategy for clusters in **Colombia**, led by iNNpulsa, has also been incorporating the regional and smart specialisation perspective into all its Cluster Initiatives. One outstanding aspect of this new approach involves the inter-cluster link initiatives within the regions and the new role assigned to IT clusters for horizontal technological fertilisation (iNNpulsa Colombia: Iniciativas Clúster en Colombia, Bogotá, 2018)³⁰.

Finally, in the **Dominican Republic**, the National Programme for the Development of the ICT Software and Services Industry (Dominican Republic 2020), promoted by the Ministry of Industry and Commerce, considers as one of its objectives the “Design and structuring of the Meta Cluster of Electronic Technologies, IT, Telecommunications and Creative Industry of the Dominican Republic (network model) “.

The Programme proposes the “Design and development of a programme that encourages Intelligent Specialisation in all the tractor sectors of the economy”. This is linked to the Promotion of ICT Verticalisation (Supply-Demand Collaboration), seeking to increase competitiveness in the different sectors.

.....
 30 <https://www.innpsacolombia.com/es/entrada/el-tercer-congreso-nacional-de-iniciativas-cluster-inn-cluster-llega-bucaramanga>

6. THEME 3: SUSTAINABILITY OF CLUSTER INITIATIVES

SUMMARY OF THEME 3

One of the great challenges for cluster initiatives and cluster policies is related to the **sustainability of these organisational formats**. Many of the Cluster Initiatives have been and are initially sponsored by the Public Sector, as promoters and funders. But the autonomy and self-sustainability of the initiatives is a difficult challenge in the EU and even more so in LAC. It is a crucial problem for ensuring **consolidation and continuity** over time without being hostage to political changes or unilateral decisions by public managers.

In relation to this point, it is emphasised that **favouring leadership by private initiative and consensus among all the agents** in terms of priorities, objectives and strategies/actions to be followed is a key aspect for the survival of the cluster and for the effectiveness of its results. Therefore, it is necessary to establish **mechanisms and incentives to favour participation**, in decision-making processes and actions, of other networks and interested parties, in addition to those incorporated in the management and management bodies.

The **establishment of governance models** (both in the area of the Cluster Policy and in each of the Initiatives) **that allow decisive participation of the agents involved during all phases of the process** (formulation, implementation and evaluation) is vital to favour the empowerment and capacity building of public and private managers for the implementation of these policies and initiatives. It also seems **necessary to strengthen methodological aspects that facilitate the empowerment and autonomy of the directors and/or managers of Clusters**.

6.1 Importance of sustainability and viability of clusters

From at least a conceptual (and even empirical) perspective, **the suitability of clusters and cluster policies for the competitive development of companies and territories seems to have been corroborated**, over the last two decades (European Commission)³¹.

31 "Smart Guide to Cluster Policy: how to support SME Policy from Structural Funds" EC (2016) <http://s3platform.jrc.ec.europa.eu/documents/20182/84453/Smart+Guide+to+Cluster+Policy/>

However, **the issue of cluster viability and sustainability over time remains a matter of significant importance and interest**, regardless of the results of the progress and contribution of these initiatives.

Europe is no exception, and here there have been **different evaluations of national cluster programmes** in which the **reasons for the success of some clusters as compared with others have been studied**, along with how policies must adapt to changes in the cluster “landscape” within the territory. The best known are probably the evaluations of the French national programme “*Pôles de Compétitivité*” (2012)³², the Spanish national programme “*Evaluación final del Programa de AEIs*” (2013)³³ and the German national programme “*Leading Edge Cluster Competition*” (2014)³⁴. At regional level, there have been interesting evaluations such as those offered by Orkestra (Aranguren et al. 2010)³⁵ or Paton (2014)³⁶ for the case of the Basque Country, one of the regions with the oldest cluster policies in Europe, which has been analysed in chapter 5.

In each of the countries and regions indicated, the debate regarding the future of clusters has had different motives: a crisis situation, a rethinking of policies at government level (in the case of Spain), development and consolidation as a result of depletion of the initial launch stage (in the case of France or Germany) or a rethinking of the model at international level (in the case of Europe from the EC).

The results of the different evaluations, both nationally and regionally, have indicated a series of **successful elements**, which have helped strengthen and provide stability to cluster structures, as well as other **limiting elements** (or barriers), which in many cases have resulted in discontinuance³⁷. As regards limiting elements, it is worth mentioning:

- **Disconnection** between different cluster support policies at **regional and national** levels (and in some cases local), which in some cases has had an impact on the generation of competition between administrative levels.
- **Disconnection** of cluster policy and clusters **from other policies on competition and/or support for SMEs**, particularly for large territorial strategies, creating an isolated element subject to debate in terms of competition for resources with respect to other policies.
- **Excessive approach** of cluster support actions and cluster management, **focussed merely on the creation of networks** among companies and among companies and agents, with excessively “*long-term*” achievement of concrete results as regards competition.

32 Erdyn/Technopolis/Bearing Point, 2012: Etude portant sur l'évaluation des Pôles de compétitivité.

33 INFYDE para el MITYC 2013 http://www.ipyme.org/Publicaciones/ProgramaAEIs-2007_2013.pdf

34 RheinischWestfälisches Institut für Wirtschaftsforschung, 2014: Begleitende Evaluierung des Förderinstruments „SpitzenclusterWettbewerb des BMBF.

35 Aranguren et al. (2010) “Evaluación de políticas clúster: el caso del País Vasco” ORKESTRA

36 Paton, J. (2014) “Los clusters piezas clave de la economía del conocimiento” Universidad del País Vasco.

37 “Smart Guide to Cluster Policy: how to support SME Policy from Structural Funds” EC (2016).

- **Excessive opening of support focus** (from policies) and cluster structure, which led to “covering a lot with little”, again to the detriment of acceptable and concrete short and medium-term results.
- **Deficient focus on projects**, more specifically on “entrepreneurial discovery” projects, or in other words, the search for shared cluster-type projects enabling the generation of more or less disruptive innovations within the value chain.
- **Generalisation of methodology** of both cluster policies and management, emulating proven formulas in other locations without sufficient adaptation to the specificity of the value chain-territory conjunction.

Regarding the elements that have contributed to the success and consolidation of clusters the following may be highlighted:

- **Customisation of policy, structure and management** of the cluster to the particular idiosyncrasies of the value chain and territory, avoiding general emulation methodology while considering differential elements of social capital (relationships), companies (size, type, etc.), availability of resources (financing), necessities and problems and previous collaborative experiences.
- Integration of a **cluster as a policy tool**, more specifically as a specialist agent in the collaboration and/or provision of specified services to public development agencies (government).
- **Focus on services and projects** in which the cluster can provide a recoverable value for certain (or all) parts of the process, i.e., the cluster establishes a visible acceptable price.
- A progressive change in the **source of financing for cluster initiatives**, towards **greater balance between public and private sources** with greater importance of the latter over time.
- **“Marketing” approach** to cluster results, i.e., a clear marketing vision for projects to which the cluster is committed, along with developed services: a clear intention for the financial viability of the cluster.
- Use of **monitoring and evaluation** of cluster activities to achieve two complementary objectives: to demonstrate added value to current and future members, and to identify needs for change for cluster services and actions in order to better respond to the demands of the different members (current and future).

In any case, to these cluster process elements (both constraints and facilitators), it is necessary to add additional elements, which to a certain extent in the European case were previously described as characteristics of the environment. However, this must be qualified when attempting to replicate good practice in other regions of the world (for example, in the Latin American and Caribbean context). These elements have often been identified in publications as “basic” given that “*a cluster cannot be built from scratch*”³⁸. In particular, the following elements may be included among the **basic**

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 38 Schmitz, H. y Madvi, K. (1999) “Clustering and industrialization: introduction” World Development Vol. 27, No. 9, pp. 1503-1514.

elements³⁹: **critical mass** around the activity on which the cluster is built; **activities related** to the core cluster activity; **geographical proximity**; sufficient **social capital** as a basis for trust, interest and a common vision; and **leadership** with a clear commitment to conciliation by a group sufficiently representative of the different members.

6.2 Some lessons from Europe

In the previous section, different elements have been considered that may be categorised according to the understanding of cluster sustainability from: a) the **basic (preliminary) conditions** with which a cluster work structure should theoretically start; or b) the **ability to correctly manage the cluster process**.

The following sections include a generalisation of different experiences in Europe, both at national and regional levels, in terms of how cluster financing, supply and management have evolved over the last two decades, highlighting successful elements that have enabled the sustainability of cluster structures⁴⁰.

6.2.1 On funding mix

A key issue when launching a cluster structure, but especially during the initial stages, is the source of funding to cover the various actions and tasks proposed. In this regard, based on the European Cluster Collaboration Platform (ECCP)⁴¹, at least three financing categories stand out as regards source:

- **Baseline support** provided by the general budget of the cluster policy, although it may also come from other programmes at regional or national levels. This is commonly linked to the contribution of the cluster to policy objectives (competitiveness, territorial development, etc.).
- **Membership financing** contributed by cluster participants (associates, members, etc.), which in turn may originate from *fixed or variable payments* (usually annual), according to type of member, or *payments for services* (for example, information, consultation, etc.).
- **Strategic projects**, in which the cluster obtains financing, usually in conjunction with other participating members, for the execution of certain activities assigned to the project. Typically, these types of projects are financed by public resources from regional or national governments, as well as by multilateral organisations.

Over time, the proportion of each financing source varies (or should vary) in order to ensure cluster sustainability. Public intervention to promote clusters is primarily

39 Based on CE (2016) and Paton (2014).

40 This implies the consideration of content of each sub-section not as a reference for experiences of specific countries or regions but rather with respect to Europe as a whole (except for explicit indications in which reference is made to specified examples).

41 Gerd Meier zu Köcker (2017). Sustainable Financing of Cluster Initiatives.

justified by the need to overcome coordination problems that frequently exist among companies, particularly among actors from the same territory, in general as a result of mistrust, fragmentation, negative externalities and asymmetric information.

In turn, public financing of cluster policies is primarily based on the need to cover other market failures; private initiative is generally not able to assume the full risk of supporting the operation for this type of project⁴². However, this argument cannot generally be justified beyond the first years of cluster operation.

For example, in the case of the *AEI Programme in Spain*, after the first years of operation (2007-2013) financing was progressively focused more on specific projects and increasingly less on financing cluster structures per se: initial financing for the preparation of strategic plans disappeared, thus considerably reducing the total amount, along with the public co-financing of structures (manager and staff salaries, fixed expenses, etc.). After the final evaluation of the first period⁴³, the programme was reoriented, focusing almost exclusively on projects for cluster members.

A direct effect of this reorientation of the Programme, particularly due to the progressive loss of public financing for the maintenance of structures, was the **practical disappearance and closure of many cluster structures created under the protection of public funds, but with no real commitment from the agents at the regional level (usually companies), with no clear vocation to generate value for companies and a management model focused primarily on covering the costs of the cluster manager.** The policy orientation in Spain as regards the level and mode of cluster financing is very similar to other European countries. According to ESCA data⁴⁴ from 2010-2012 and 2016-2017, the proportion of public financing for European cluster structures went from approximately 60% to 40%.

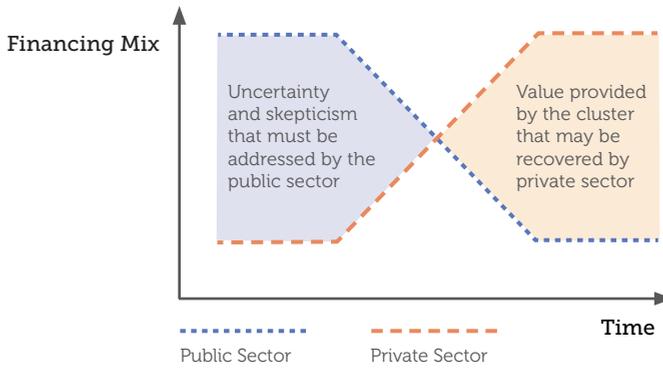
In short, these different experiences corroborate the conceptual idea of the necessary financial viability of clusters, regardless of the availability of public funds, in order to be considered as sustainable.

.....
42 Among these market failures are lack of confidence, insufficient level of social capital and scepticism as regards contribution and collaboration to competition (Paton 2014).

43 http://www.ipyme.org/Publicaciones/ProgramaAEIs-2007_2013.pdf

44 European Secretariat for Cluster Analysis ESCA (2017). Sustainable Financing of Cluster Initiatives.

Figure 1: Evolution of financing mix in European clusters 2010-2017



Source: Drawn up by the authors (2018).

Thus, **in the short term**, the cluster policy justifies intervention given that there are **significant market failures making it impossible in many territories for work in collaborative dynamics to generate spontaneously**.

In these initial phases **public financing is usually focused on covering the costs of a more or less formal management structure** and some of the activities of the cluster aimed at **generating confidence and incorporating new members**.

However, after the initial stage, the cluster must show results demonstrating that the incentive of public policy has been successful and that a substantial portion of the costs must be progressively taken on by the members.

Accordingly, **the key to cluster sustainability** (based on the progressive transfer of contribution proportion from public to private sectors) **lies in the capacity to generate value for its members**, which is really the only element that can justify both an increase in periodic fees and payment for cluster services and actions.

6.2.2 Cluster value added offer

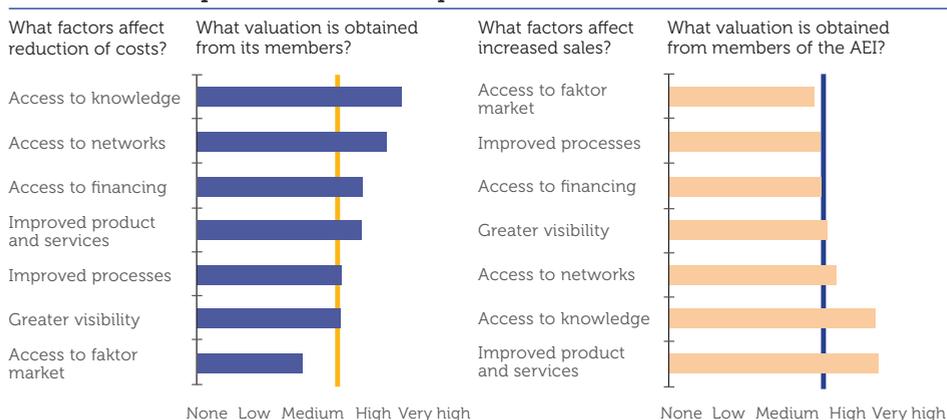
Attempting to synthesise the different typologies that may be observed in the European case, ESCA⁴⁵ points more emphatically towards two main forms of value that clusters offer its members: **strategic services and projects**.

⁴⁵ Based on ESCA 2017. These are the most tangible and directly attributable to the capacity of cluster structure action, although it must be remembered that there are other forms of value for members, more intangible and derived from the image that membership offers, positive externalities derived even from inaction by the member, etc., which cannot be considered under the category of service.

However, some manuals⁴⁶ propose service lists based on observation of the cluster offer: services oriented to **human capital** (*continuous training, placement and mobility*), **R&D&i** (*consulting and project management, technology monitoring and innovation, information on support programmes and channelling of financing*), **coordination of value chain** (*identification and contact with suppliers and customers, information on tenders*), **internationalisation** (*foreign promotion, organisation and participation in direct and inverse missions, trade fairs etc.*), boosting **collaboration and social capital** (*thematic working groups, meeting sessions, development of strategic reflections*), or promotion of the sector and value chain (*marketing, dissemination, channelling of interests “lobbying”*).

Similarly, valuation of the most interesting service portfolios for companies is not an area well studied, most likely as a result of the heterogeneity that exists. In some cases, this evaluation has been carried out indirectly by assessing the work areas that cluster structures have implemented with the support of public programmes (cluster policies). The following graph includes the valuation, based on cost impact and sales of member companies, developed within the evaluation framework of the Spanish cluster policy between 2007 and 2013⁴⁷:

Figure 2: Factors linked to cluster services that reduce costs and increase sales of companies: the case of Spain



Source: MITYC (2013). *The 2007-2013 AEI Programme: updated five-year implementation of the MITYC cluster policy.*

Complementing this vision of the impact of cluster actions on companies and corresponding assessment, we can examine what ESCA does in its report “Sustainable financing of cluster initiatives”⁴⁸, where the contribution to the financial viability of the cluster is also studied (i.e. economic return derived from service provision to members):

46 GTZ (2007). “Cluster management: a practical guide”.

47 http://www.ipyme.org/Publicaciones/ProgramaAEIs-2007_2013.pdf

48 ESCA (2017) Sustainable Financing of Cluster Initiative

Table 6: A review of the most common services offered by clusters and corresponding levels of contribution and assessment

Type of services	Level of extension among clusters	Level of financial contribution	Level of evaluation by members
Organisation of trade missions	Frequent	Medium-High	High
Organisation of trade fairs	Frequent	High	High
B2B visits among members	Habitual	None	Medium
Cluster manager visits to members	Frequent	None	High
Seminars and training courses	Habitual	High	High
Cluster promotion	Habitual	Medium-Low	Medium
Promotion of individual members	Rare	High	High
Connection actions among members	Habitual	None	High
Project management	Rare	High	High
Publications	Habitual	None	Medium-Low
Thematic studies at the request of members	Very rarely	High	High
Specific consultations	Rare	High	High
Connections between suppliers and purchasers	Rare	High	High
Proprietary rights (assistance)	Rare	None	High
Cluster competency mapping	Frequent	None	Medium-Low

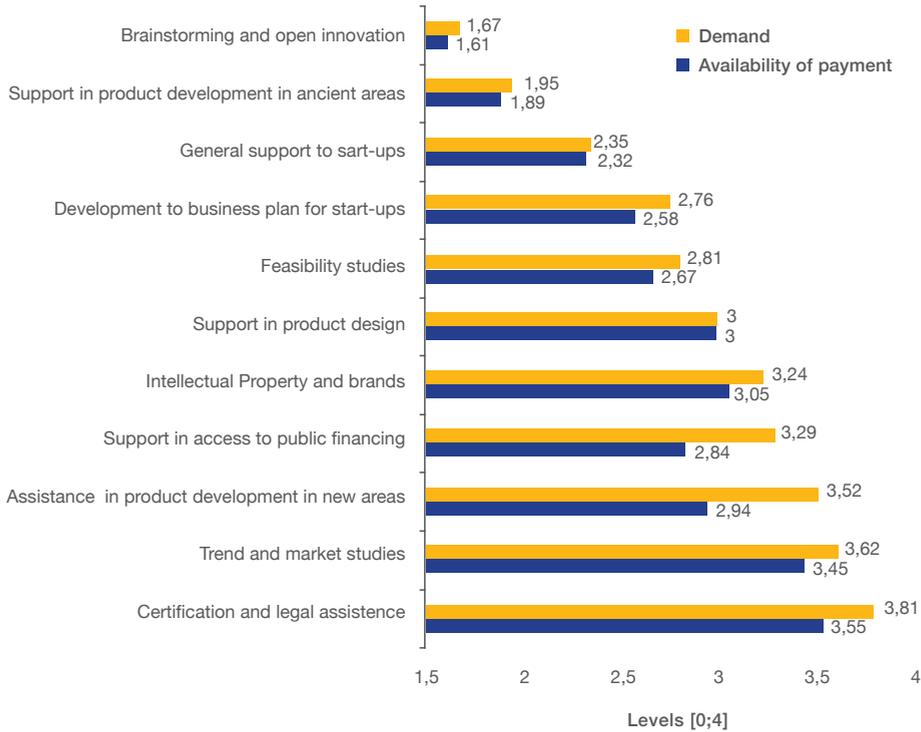
Source: Development based on ESCA (2017) Sustainable Financing of Cluster Initiatives.

The recommendations of this analysis, from the point of view of cluster financial sustainability, are aimed at the need to **focus on a portfolio of services offering excellent monetary return as well as increased value on the part of members receiving services**. For the European case, the results indicate training services, promotion (missions, trade fairs and individual members), project management, connections between suppliers and customers and the development of customised thematic studies. Nevertheless, it must be borne in mind that, as the graph indicates, there are several services which are highly valued by companies but offer no contribution to financing the cluster structure.

In any case, it must be remembered that it is necessary, prior to consideration of the type of services to develop, to identify the real needs of members, particularly for companies, given that these needs vary over time. It is also essential to assess the real capabilities of the cluster structure, which depend on their state of current development (directly linked to management capabilities).

In this respect, a survey carried out by Silicon Saxony⁴⁹ attempts to show the situation as regards demand for services by cluster members, linking it with the question of “willingness to pay”, i.e., an indirect valuation of its utility and how provision could impact contribution to the sustainability of cluster activity.

Figure 3: The most common services offered by clusters and corresponding levels of contribution and assessment: the case of Silicon Saxony



Source: Developed based on Lämmer-Gamp (2018). Financing cluster organisations and networks: is there a “one-size-fits-all” model? Sofia, March 2018.

6.2.3 On cluster management

Management is another interdependent element in the cluster sustainability equation, along with the financing mix and value offer. These last two elements determine both the **form** (the level of formalisation of the cluster structure and corresponding governance model) and the **dimension and scope** (size of the cluster secretariat and functions of the cluster manager and staff).

⁴⁹ <https://www.silicon-saxony.de/home/>

Again, the situation differs by country and region in the European case, given the link to the cluster dimension (critical mass) and above all to the dimension of the tasks and objectives to be assigned to the cluster as an intermediate structure. However, in all cases what is clear is that a more or less definite formal structure is required since, depending on the level of ambition of the members in relation to the cluster's purpose, the dimension of the work to be managed also increases.

The document "*Smart Guide to Cluster Policy*" (EC 2016) classifies the cluster structure in any case as "*organizational platforms with the objective of increasing the competitiveness of the cluster, facilitating collective actions and deploying administrative policy tools to cluster companies and agents*"⁵⁰. Within the heterogeneity of existing structures, it considers three types: a) **quasi-private structures** that function as a **window for public programmes** (similar to the Austrian model⁵¹), b) **structures based on a secretariat** that rely on public funding to promote collaboration and cooperation (Scandinavian model), and c) **structures** that combine **limited public administration support** but that fundamentally work as **connectors to non-specific cluster programmes** mainly for innovation (French or German case).

The choice of form and management of the cluster is important from the point of view of **structure sustainability** given that **misalignment between the dimension and the type of activity intended implies misalignment between the cost and expected income** of the cluster, causing possible cessation of cluster activity due to lack of coverage. Although it is one of the main points of any strategic cluster plan (during the launch phase), periodic review is necessary in response to the growth and development stages of the cluster, or cluster cycle (Del Castillo et al. 2012)⁵².

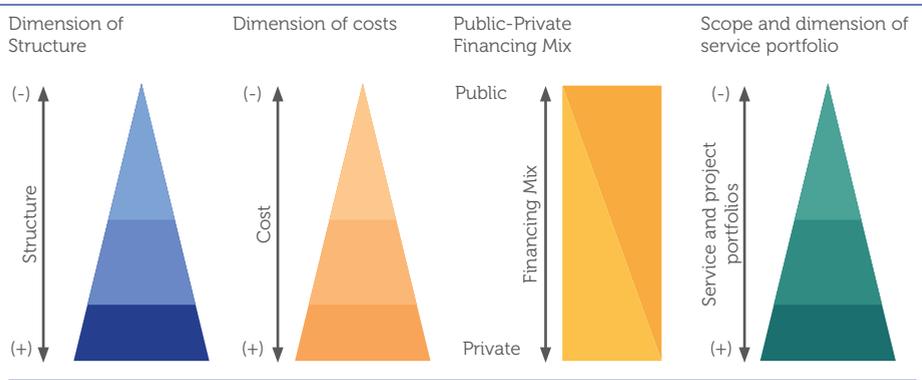
Based on this reflection, **sustainability/viability of a cluster over time may be understood as an interdependent system of the structure and its form of management (blue pyramid) linked to the scope and dimension of the service portfolio and future projects (green pyramid), which results in a greater or lesser cost structure (orange pyramid) supported by a different mix at the financing source (yellow rectangle).**

50 EC (2017), point 3.1.3.2 "*providing better SME support through cluster organizations and their services*", pp33. Based on Cluster Initiative Greenbook 2.0.

51 A clear reference example is the case of Clusterland Upper Austria <https://www.biz-up.at/en/networking/clusterandnetworks/>

52 Del Castillo, J., Paton, J., and Barroeta, B. (2012). "Clusters facing the challenges of the new competitive context". INFYDE Working Paper N2.

Figure 4: Interrelated dimensions of cluster structure sustainability: lessons from the European experience



Source: Compilation

All this must be understood over time, i.e., in a time horizon that varies between sectors, territories and forms of cluster policies (with stronger support from public funds able to support longer periods of time), but **what seems clear from the European experience is that clusters that survive, grow and are consolidated at higher levels are inevitably directed towards a structure based on the provision of value to their members which are capable of supporting operating costs.**

6.3 Reflection on cluster sustainability in LAC

Most of the cluster policies in LAC have undergone frequent changes in direction and discontinuities. In a few cases cluster strategies have become part of the stable set of productive development policies, meaning they have not been integrated into State policies that have survived changes in government.

On the one hand, this is explained by the **great political instability** observed in many LAC countries along with the difficulty of reaching broad stable consensus as regards development strategies and corresponding instruments. The **traditional weakness of industrial and innovation policies** in most LAC countries must also be taken into account. Additionally, despite the interesting progress of cluster policies in recent years, it is clear that these **have not yet become recognised and evaluated by all policy makers** as fundamental tools for regional development and competition.

As part of this scenario, many cluster policies in the LAC region were and are financed totally or partially with resources from multilateral financing agencies (mainly the IDB) or international cooperation, with funding lines naturally limited over time.

Described below are the problems frequently observed in LAC regarding the sustainability of cluster initiatives. We will also synthesise some of the main lessons

learned from analyses carried out, particularly in some of the most advanced national experiences.

6.3.1 Some problems for sustainability of clusters in LAC

a) Regarding construction of governance and problems of “capture”

In general, policies have placed great importance on the construction of suitable governance during the awareness-raising and organisation phases of cluster initiatives, which generally include the **creation of some type of Management Core along with an Advisory Board where different public and private organisations come together around common objectives**. In principle, this should facilitate the implementation of collective actions and projects identified as beneficial for all actors.

In any case, beyond the progress that cluster initiatives have provided in terms of creating institutional arrangements of public-private convergence at local and regional levels, **business leadership has not always been able to emerge clearly**. In some cases, **complications have appeared related to conflicts of interest and power** among groups of companies comprising the cluster⁵³.

Additionally, several cluster initiatives seem to have been captured by a **small group of active companies with the capacity to reap the benefits of the project**, to the detriment of the majority of companies with very limited participation in collective actions and projects (Matos et al. 2015)⁵⁴.

b) Regarding emphasis on governance to the detriment of specified projects

The emphasis placed on the construction of consistent governance, and the difficulties of achievement **in many cases became an objective in and of itself that prevented progress simultaneously in the implementation of action plans**, and in particular, for the execution of short-term demonstration projects in order to incentivise greater business participation (Matos et al. 2015).

c) Regarding the local manager or agent as a primary coordinating entity and the difficulty of recruiting good candidates

Given that SMEs participating in clusters generally lack a professional functional structure, while the time available to entrepreneurs for collective activities is limited, and, on the other hand, that many municipal structures lack qualified

53 Pietrobelli C. and Stevenson C. (2011) “Cluster Development Programs in Latin America and the Caribbean. Lessons from the Experience of the Inter-American Development Bank”, BID, Washington, D.C.

54 Matos M.P., Cassiolato J.E., Lastres H.M.M., Lemos C., Szapiro M. (orgs) (2017) “APLs: referencial, experiências e políticas em 20 anos da RedeSist”. E-Papers, Rio de Janeiro.

personnel, **the functions and skills of the manager or local agent appear in all experiences as factors of utmost importance** (DECOMTEC/FIESP (2010)⁵⁵.

This presupposes a **professional profile difficult to obtain, with complex and varied skills**, and is the reason for frequent management training courses. In any case, the lack of ideal management profiles seems to have hindered many initiatives, with particular impact in terms of business interest and coordination, at least in the initial phases.

d) Regarding difficulties in overcoming chronic dependence on public financing

Assuming that the initial financing of cluster initiatives should come from the public sector until the structuring and recognition of benefits of the project are established, the problem is **how to avoid continuous dependence on this support while generating “exit strategies” in order to achieve increased self-financing of the cluster structure**. In most cases this has been difficult to achieve.

On the one hand, to a large extent cluster structures revolve around business associations that charge monthly fees to members in return for service provision, generally free of charge. **Provision of remunerated services by these Associations is not common practice** in the LAC region.

Cluster programmes financed through IDB loans generally have a significant national counterpart component, which in some cases includes contribution from private participants. The latter undoubtedly has the advantage of potential future sustainability, insofar as it assumes that **entrepreneurs reap ex-ante the benefits to be achieved by the project and are involved from the beginning in its co-financing** (Pietrobelli and Stevenson, 2011)⁵⁶.

In any case, the experience of the IDB also illustrates the tensions throughout the process to ensure increasing business participation and continuity of initiatives once the support programmes are finished (Arévalo, 2009)⁵⁷.

55 DECOMTEC/FIESP (2010) *“Manual de Atuação em Arranjos Produtivos Locais – APLs”*. Ministry of Development, Industry and Foreign Trade and Federação de Indústrias do Estado de São Paulo, Brasília.

56 Pietrobelli C. and Stevenson C. (2011) *“Cluster Development Programs in Latin America and the Caribbean. Lessons from the Experience of the Inter-American Development Bank”*, BID, Washington, D.C.

57 Arévalo G. (2009) *“Programas de Apoyo a Clusters en América Latina: Lecciones Aprendidas de la Experiencia del BID”*. IDB, Washington D.C.

6.3.2 Some preliminary lessons

a) Need to ensure priority and hierarchy of cluster policies and continuity and consistency of government support

Demonstration of clear prioritisation of these policies, backed by strong qualified public institutions that implement them, is crucial to generating positive expectations of the productive sector and facilitating increased private leadership. **Fluctuations, discontinuities and delays in the public management of initiatives normally generate demoralisation within the business environment.**

According to the Chamber of Commerce of Medellín (2010)⁵⁸, *“if a cluster strategy is not designed within a policy framework, it remains as a public administration initiative, therefore with potential impact in terms of sustainability, as entrepreneurs feel discouraged by the lack of continuity of actions undertaken within the strategy framework resulting in loss of credibility due to inconclusive processes”*.

b) Need for a governance model for the empowerment and business leadership of cluster initiatives

It is necessary to ensure representative private participation. When clusters are horizontal (many companies - typically SMEs - in the same sector), with an already constituted business association, such participation is naturally simpler to achieve. In the absence of such an association, or in clusters integrated by companies from different sectors (multiple productive chains), **the institutionalism of this participation must be carefully constructed in order to reconcile interests without excluding important productive segments.**

In any case, at least initially, achieving business leader participation from those most committed to the project seems to be the key, but generally does not cover all the companies in the cluster.

Here, the dilemma is usually whether policy *targets* should initially focus on the most active core of dominant companies or on the group of companies in the cluster as a whole. **Operating initially with a small group of business leaders** may be easier to coordinate than targeting collective actions involving the entire business world. To the extent that this group of companies mobilises and benefits from participation in cluster projects, this **could serve as a significant demonstration to the whole** (Matos et al. 2017).

But it is important to note that **here is where said risks of “capture” appear** as previously mentioned, which should be avoided by ensuring that there is at some

58 Cámara de Comercio de Medellín (2010) “Institucionalización y dinamización de Iniciativas Cluster. Caso Medellín (Colombia)”. Comunidad Cluster Medellín & Antioquia, Medellín.

point effective access to cluster services and projects for participating companies (Matos et al. 2015). Furthermore, in this regard, **support for cluster instruments for individual companies should be avoided.**

c) Design of financial strategies that incentivise and allow for increasing viable private commitment to cluster sustainability

It should be explicitly clear that the promotion policy will not be endless and that it is necessary to gradually transfer cluster initiative leadership and financing to the private sector. **Initial public action must be structuring, while leaving space for private empowerment** (Pietrobelli and Stevenson, 2011)⁵⁹.

In relation to medium and long-term financing models that could be adopted, in accordance with the experience of Colombia (iNNPULSA, 2018)⁶⁰: *“The construction of a financing agenda requires a strategy of financing diversification”*. Thus, normally, cluster initiatives may be financed in 3 ways:

- a. **Financing through fees** from entrepreneurs and cluster entities, primarily aimed at covering the operational management structure, which in many cases is incubated in Business Associations. One advantage of financing through the fee structure is that it facilitates the long-term sustainability of the initiative.
- b. **Financing through projects** based on competitive regional, national and international ventures. Also, through international cooperation, financing and multilateral credit agencies (mainly IDB).
- c. **Financing through provision of services** such as: project management, training courses, consulting or competitive information, attendance at events, participation in patent revenues and licenses generated from the project management facilitated by the cluster, etc.

d) Agile Management and “Early Victories”

To avoid premature exhaustion of the cluster initiative for entrepreneurs as a result of delays or changes in public management or because of difficulties encountered with the construction of governance, **it is important to move quickly to implement projects and services that result in concrete benefits that bring credit to the initiative.**

On the other hand, project management must be agile and when programmes offer co-financing for certain actions, it is desirable for payments to be made quickly,

59 Pietrobelli C. y Stevenson C. (2011) “Cluster Development Programs in Latin America and the Caribbean. Lessons from the Experience of the Inter-American Development Bank”, BID, Washington, D.C.

60 https://www.innpulsa.com/sites/default/files/terminos_aceleradoras_parte_i.pdf

without bureaucratic obstacles which could result in undermining the reputation of the programme in the eyes of entrepreneurs (Arévalo, 2009)⁶¹.

e) To select and/or train proper managers and ensure action focused on the general interest

Among other skills, **managers must earn the confidence of the productive sector while maintaining proper dialogue with all actors in the cluster**, as well as possessing a great capacity to identify opportunities for cooperation, complementarities and synergies.

Additionally, it is important to provide a system of incentives and remuneration that motivates managers to strive to achieve concrete progress in the action plan and in collective initiatives, as well as to generate projects and services that contribute to the self-financing of the cluster structure.

61 Arévalo G. (2009) "Programas de Apoyo a Clusters en América Latina: Lecciones Aprendidas de la Experiencia del BID". BID, Washington, D.C.

7. THEME 4: COOPERATION AGREEMENTS BETWEEN REGIONS AND CLUSTERS OF LAC AND THE EU

SUMMARY OF THEME 4

This chapter analyses the current status of cooperation agreements between clusters and regions of the EU and LAC. The interest shown in Latin America and the Caribbean in the regional policy experience of the EU laid the basis for a **growing part of the bi-regional collaboration and the exchange of experiences** currently focusing on the **management of territorial policies based on smart specialisation and the “value chain / cluster” approach.**

Inter-cluster collaboration is one of the key points of the cluster policy approach in the EU.

Although LAC countries have not implemented significant institutional initiatives to promote inter-cluster cooperation, it is possible to observe in the last few years the realisation of a number and diversity of agreements of this type.

The information presented shows that EU - LAC cooperation has been incorporating territorial development and cooperation among regions as a central theme, and there are several support programmes at that level. For its part, inter-cluster cooperation is growing within the EU and has important incentives for internationalisation.

7.1 EU-LAC cooperation

From a **historical perspective**, in the 1990s relationships between the European Union and Latin America and Caribbean acquired a strategic character, including the concept of bi-regional association. The *Maastricht Treaty* (1992) incorporated the policy of cooperation for development as a competence of the European Community while proposing the promotion of investment in Latin America. Subsequently, approval

by the EU Council of the *Basic Document on EU relations with Latin America and the Caribbean*⁶² (1994), established the foundations for EU-LAC relations.

The First Summit in 1999 between the Heads of State and Governments of Latin America, Caribbean and the European Union (EU-LAC), made significant commitments in the political, economic-commercial, cultural, educational and human resource fields, reflected in the *Rio de Janeiro Declaration*⁶³.

Between 1999 and 2010, six Summits were held, the results of which have been the development of a broad spectrum of cooperation: social cohesion (EUROSociAL), climate change (EuroCLIMA), promotion of SMEs and development of the private sector (AL- INVEST IV), higher education (ALFA III and ALBAN), support for local authorities (URB-AL), information society (@lis), investment (LAIF and CIF, respectively, for investments in Latin America and the Caribbean.), water management (RALCEA), migration and anti-drug policies (COPOLAD), among others

In 2010, the VI EU-LAC Summit took place under the slogan “Towards a new stage in the bi-regional partnership: innovation and technology for sustainable development and social inclusion”⁶⁴. From this summit, R&D&i acquires relevant significance in the interests of cooperation. In this regard, in 2012 at the VII EU-LAC Summit / I EU-CELAC Summit⁶⁵, but above all during the subsequent II EU-CELAC Summit in June 2015, **the emphasis on science, research, innovation and technology** was becoming even more important, until being placed first on the list of **priorities for the EU-CELAC Action Plan 2015-2017**⁶⁶.

In this context, at the Joint Initiative on Research and Innovation (JIRI) meeting held between the EU and LAC in El Salvador in October 2017, it was agreed to strengthen support for innovation through a bi-regional cooperation agenda between Latin America and Europe, and in particular to facilitate the collaboration and access of EU companies in the LAC markets as well as the conditions under which research and innovation activities can be carried out there and vice versa.

In parallel to the emphasis on R&D&i, subsequent to the 2010 summits, the interest shown in Latin America and the Caribbean based on the experience in regional policies of the EU established the foundations for **increasing bi-regional collaboration and exchange of experiences** and currently focuses on **management of territorial policies** based on **smart specialisation** with a “**value chain / cluster**” approach.

62 Council of the European Union. *Europe and Latin America: cooperation for action*. Luxembourg, 31 October 1994.

63 IOE Virtual Library. *First Summit between Heads of State and Government of the European Union, Latin America and the Caribbean*. Rio de Janeiro, 28 and 29 June, 1999.

64 VI Latin America and Caribbean Summit - EU. Madrid Declaration. 2010.

65 This is the first Summit in which the Community of Latin American and Caribbean States (CELAC) is recognized as the Latin American counterpart of the European Union.

66 Accessible via <http://www.europarl.europa.eu/>

On the other hand, since the Ibero-American Conference there has also been a focus on the relevance of issues related to science, technology and innovation as key axes of cooperation between the different countries of the region.

Following up on the agreements of the XV Ibero-American Summit of Heads of State and Government (Salamanca, Spain, 14-15 October 2005), the Ibero-American Knowledge Space was created, oriented towards the transformation of higher education and structured around research, development and innovation as necessary conditions for increasing productivity and competitiveness.

Subsequently, innovation was the central theme of the XIX Ibero-American Summit (Estoril, Portugal, November 29-December 1, 2009), whose final Declaration agreed to prioritise innovation within the framework of national development strategies, as well as to strengthen national institutions of innovation and promote cooperation among Ibero-American governments in this field.

Science, technology and innovation also had a particular presence in the framework of the XXV Ibero-American Summit. The Ministers and High Authorities of Science, Technology and Innovation (CTI), meeting on November 28, 2014 in the city of Puebla, Mexico, agreed to move towards the definition of an Ibero-American Cooperation Agenda in CTI, which was adopted at the II Meeting of Ministers and High Authorities of CTI (Cartagena de Indias, Colombia, 6-7 October 2016).

Efforts are currently focused on the development and implementation of the Agenda, which integrates a set of approved initiatives: Ibero-American Portal for Mobility of Researchers; Ibero-American Bank of Evaluators (BIE); Project of Citizen's Agenda of the CTI; Project focused on the promotion of Open Science; Plan for the promotion of Innovative Entrepreneurship; Plan for the development of the Digital Ecosystem; and Map of Singular Scientific and Technological Infrastructures and Capacities.

Finally, it is worth mentioning two specific Ibero-American programmes linked to these issues. On the one hand, the Ibero-American Programme for Science and Technology for Development (CYTED), created by the governments of Ibero-American countries to promote cooperation on STI issues through different financing instruments which stimulate entrepreneurs, researchers and Ibero-American experts, facilitating their training and generating joint research, development and innovation projects.

On the other hand, the Ibero-American Industrial Property Programme (IBEPI) is structured around the National Offices of Industrial Property and oriented to promote the strategic use of Industrial Property as a tool of competitiveness and development at an industrial, commercial and research level in Ibero-America.

7.1.1 Cooperation in EU-LAC regional policies: towards cluster-smart specialisation mix

As part of the dialogue and cooperation between the European Union and Latin America and the Caribbean generated through the different summits, one of the objectives that has been gaining greater relevance is that of **integration at the regional level**. More specifically, the European Commission, through the Directorate General for Regional and Urban Policy (known as DG REGIO) has encouraged **methodological and conceptual transfer processes** for the development of Regional Innovation Strategies (RIS, RIS+ y RIS3)⁶⁷ towards Latin America.

Cooperation and exchange of experiences between the EU and LAC as regards regional policies has emphasised the **training of innovation system authorities and agents** in defining, implementing and managing territorial innovation policies, largely based on participatory processes where clusters and the value chains have played a critical role.

The regional policy (through RIS) and value chain / cluster mix that has been promoted through such bi-regional dialogue has been further strengthened with the expansion of smart specialisation that took place in Europe since 2014⁶⁸, which has also been observed in cooperation projects between the EU and LAC. The case of the **CBRIS and EU-Peru projects**, in 2013 and 2015 respectively, are two clear examples of **cluster / smart specialisation integration as tools for territorial development**.

The EULAC-REGIO (CBRIS) project⁶⁹ “*EU-Latin America Cooperation on Cross-Border Regional Innovation Systems (Brazil and Peru)*”, established reflection and RIS-RIS3 methodological application in order to propose the basis for a **meso-regional smart specialisation strategy** for the Amazon border area between Peru and Brazil (which later extended to Colombia), **based on cluster methodology**.

As a result of this cross-border reflection, a pilot project was identified to establish a **cross-border aquaculture cluster** in the area.

Another case of interest as regards the cluster / smart specialisation mix is the “*EU-Peru Cooperation on Regional Innovation Systems in the Framework of Regional Policy*” project, carried out in 2015⁷⁰. This project provided a number of competitive analyses related to value chains in the regions of Cuzco and Puno; more specifically in the coffee and alpaca fabrics sectors.

67 Complete detail of the Dialogue on Regional Policy between the European Union and Latin America and the Caribbean may be found at the following link of the Commission: http://ec.europa.eu/regional_policy/en/policy/cooperation/international/latin-america/

68 At the beginning of 2014, all European regions were required to implement a Smart Specialisation Strategy as a precondition for access to structural funds for R&D&I. Although the process of defining these strategies began in 2011 and 2012, it was in 2013 and 2014 that they acquired maximum expression.

69 http://ec.europa.eu/regional_policy/es/policy/cooperation/international/latin-america/eulac-cbris/

70 DG REGIO: *Final Report. EU-Peru Cooperation on Regional Innovation Systems in the Framework Of Regional Policy*. Contract Number – 2013CE160AT139. April 2016.

The organisation of visits, workshops and tutorials made it possible to define the challenges of both chains together with possible mechanisms for competitive improvement, progressing towards **the structuring of two clusters linked to coffee and alpaca fabrics.**

7.1.2 Main collaborative programmes in the framework of clusters and smart specialisation

EULAC-EUREGIO Cooperation Project (CBRIS)

The work developed around the value chain of aquaculture in the Amazonian border area is part of the **EULAC-EUREGIO Europe-Latin America cooperation project (CBRIS)**⁷¹, developed by INFYDE and the Association of European Border Regions (ARFE), funded by DG REGIO of the European Commission and with the participation of the Peruvian Government (Ministry of Foreign Affairs) and the Brazilian Government (Ministry of Integration), as well as with the Governments of the State of Amazonas, and the Regions of Loreto and San Martín.

In this context, the CBRIS project focused on the possibility of **exchanging experiences between the EU, Brazil and Peru as regards smart specialisation and how to support it in order to contribute to territorial development.** Using the aquaculture value chain as one of the priorities of the Amazon area, the project carried out various actions resulting in the promotion of interest in the constitution of a cross-border cluster.

Cooperation within the project framework has aimed at the exchange of experiences in the **promotion of cross-border regional innovation systems, as well as the application and management of cluster innovation policies** in common areas prioritised by target regions.

International Urban Cooperation Programme (IUC)

The International Urban Cooperation Programme (IUC) seeks to connect the cities and regions of the globe to share solutions to common problems. It is part of a long-term strategy of the European Union to promote sustainable urban development by cooperation.

Component 3 of the Programme is intended to „Strengthen cooperation between the EU-LAC region-region in innovation for local and regional development,“ and aims to establish 20 region-region associations by 2019. The regional governments of Argentina, Brazil, Chile, Colombia, Mexico and Peru were invited to join the programme, which will allow them to cooperate with counterparts in the EU to promote innovation and competitiveness.

.....
71 EULAC-EUREGIO (CBRIS): Cooperación UE-América Latina sobre Sistemas Regionales e Innovación Transfronterizos en el marco de la Política Regional.

In this way, participating LAC regions can receive technical assistance for the design or implementation of a Regional Innovation Strategy for Smart Specialisation (RIS3) and develop a pilot project or cooperation agreement that will lead to new joint business opportunities. This includes a series of possible activities, such as study visits from the LAC regions to their association regions in the EU and vice versa, internships for representatives of the LAC region in their linked regions in the EU or vice versa, as well as the commitment of relevant stakeholders, state / regional government, business associations and knowledge institutions.

Al-invest programme

Since 1994, **AL-INVEST has been a flagship programme of EU cooperation with Latin America.** The programme promotes inclusive growth and aims at creating opportunities by **facilitating the internationalisation** of thousands of Latin American small and medium enterprises (SMEs), in collaboration with their European partners.

AL-INVEST began with a 2-year pilot programme in 1994. The success of the first phase led to the approval of four subsequent programmes: AL-INVEST I – 1995-1999; AL-INVEST II – 1999-2004; AL-INVEST III – 2004-2007; AL-INVEST IV – 2009-2013.

The current phase, AL-INVEST 5.0, started operations in the first semester of 2016. It is designed to contribute to productivity growth and the sustainable internationalisation process of SMEs in Latin America through organisations that represent the private sector and promote its development, such as Chambers of Commerce, Trade Associations and Export Promotion Agencies, etc. Within the framework of the programme, Latin American SMEs continue to benefit from training and technical assistance to improve their productivity and competitiveness, participate in business meetings at relevant trade fairs, and have access to quality information as well as to advice on market opportunities, potential clients or business partners and EU legislation and policies. This includes several activities to promote inter-cluster links AL-AL and AL-EU.

Innov-Al Programme

INNOV-AL Platform is an EU funded project for the promotion of decentralised innovation policies and cooperation in territorial cohesion which was launched in 2017. The project is supported by the Directorate-General for Regional and Urban Policy of the European Commission (DG REGIO). The project has been divided into two parallel programmes, which are described below:

- *“EU–CELAC INNOV-AL platform promotion of decentralised innovation policies in CELAC countries”*, **aims to support the dissemination of the experience and good practice of the EU’s regional policy** and to develop greater cooperation between national and regional authorities and specialised agencies **in 4 Latin American**

countries (Argentina, Chile, Colombia and Peru), and with the countries and regions of the EU, on the **definition and implementation of decentralised innovation policies and innovation at regional level**. This was achieved through the establishment of a mechanism / platform for the exchange of knowledge and the transfer of good practice between participating countries and regions (EU and Latin America), on the promotion of regional innovation systems, in relation to Smart Specialisation Strategies, clusters and programmes for SMEs.

- “EU–CELAC INNOV-AL platform promotion of decentralised innovation policies in CELAC countries – Brazil” has similar objectives to the first but focused on Brazil. The programme seeks to **support the dissemination of the experience and good practice of the EU’s regional policy** and to develop greater cooperation between national and regional authorities, and specialised agencies **in three Brazilian States (Pará, Pernambuco and Paraná)**, as well as between Brazilian partners and EU regions for the implementation of decentralised and regional innovation programmes and smart specialisation policies.

Innovact Programme

The INNOVACT EU - CELAC Platform 2017-2018 is a project funded by the European Union and supervised by the Directorate General for Urban and Regional Policy of the European Commission (DG REGIO).

INNOVACT sought to disseminate in Latin America and the Caribbean the experience and good practice in regional policy of the European Union, as well as to prepare and develop greater cooperation between the regional authorities and specialised agencies in decision-making regarding innovation policy and governance. It focussed on border regions of the European Union and Latin America. Concretely, it supported cross-border cooperation and innovation in four border regions of CELAC, covering six countries: Mexico - Guatemala; Colombia – Ecuador; Colombia - Peru and Peru - Chile.

In addition, INNOVACT developed cross-border value chains, creating EU-LAC partnerships, not only between political institutions and national and regional authorities, but also, in particular, between public and private institutions and actors which work day to day in the promotion of SME innovation, providing support for clusters and for improving the competitiveness of the regions involved.

Smart Specialisation (S3) Platform - JRC

The S3 Platform assists EU countries and regions to develop, implement and review their Research and Innovation Strategies for Smart Specialisation (RIS3) through information, technical assistance, methodologies and mutual learning, which are carried out through various Seminars and Workshops. The platform was created in

2011 and is operated in Seville by a Directorate of the Joint Research Centre (JRC), which is the scientific and technical arm of the European Commission.

Registration on the S3 Platform is open to regional and national administrations of the EU, candidate countries, neighbouring countries and for any other non-EU third country, national or regional administration that wishes to be involved and participate in the S3 Platform.

As part of the platform, there are some projects for cooperation with Latin America and Caribbean.

ORU-FOGAR (United Regions Organisation)

ORU FOGAR's "2030 Working Group" on Development Cooperation has launched a pilot project to bring the EU programme „Research and Innovation Strategy for Smart Specialisation“ (RIS3) to Latin American regions interested in implementing such strategic planning.

The project received financial support from the European Union through the S3 Platform programme, and the call was open until February 2017 to all regions, federal states and provinces members of ORU FOGAR in the Latin American area. The selected regions received an evaluation on the implementation of RIS3 strategies, as well as training, technical assistance and resources, and strategy implementation.

Sectoral Dialogues of Brazil

This cooperation initiative, launched in 2008, aimed to contribute to the progress and deepening of the EU-Brazil Strategic Partnership, through actions that facilitate and support exchanges and cooperation between Brazilian and European partners.

Between 2008 and 2016, a large number of cooperation initiatives were supported within 30 different sectoral dialogues. Within the framework of the current 4th phase of implementation, comprising the period 2017-2019, a new call for projects was launched.

The financing of the Initiative has been secured through financial contributions from the European Union and non-financial contributions from the Brazilian side (in the form of a technical and / or logistics counterpart).

Among other topics, the Dialogue has allowed the exchange of experiences of integration and regional development in areas such as: a) territorial cohesion; b) governance; c) strategic planning, d) organisation of territorial development strategies and e) development of administrative, coordination and inter-institutional communication capacities, and capacity for monitoring and evaluation.

7.2 Inter-cluster collaboration in Europe: examples

Inter-cluster collaboration is one of the key points of the cluster policy approach in the EU. For this reason, the European Commission has developed different initiatives.

The European Observatory for Clusters and Industrial Change (EOCIC) works to facilitate inter-cluster collaboration, providing statistical analysis, advice, training and funding, fundamentally through COSME and HORIZON2020 programmes.

The EOCIC aims to help European regions and countries to *“design better cluster policies and initiatives, to promote the development of world-class clusters in a context of competitiveness in global value chains”*. Specifically, the EOCIC will work on:

- **Industrial Modernisation;**
- **Entrepreneurship** in emerging industries with growth potential;
- **Access of SMEs to clusters and internationalisation,** and;
- **Improved strategic inter-regional collaboration** and investments in the implementation of smart specialisation strategies.

Another initiative is the platform entitled *“European Cluster Collaboration Platform”* (ECCP) which aims to **provide cluster organisations with tools for collaboration:**

- Dynamic mapping of the more than 800 global cluster organisations;
- Cluster information centre offering news and events;
- Events that support the development of cooperation projects among clusters in Europe and with other regions and foreign countries;
- Unique database for regional, national, international and sectoral cluster networks;
- Detailed information regarding European cluster associations;
- Partner search, where cluster organisations exchange corresponding offers and demands;
- Support for international cooperation, including profiles of selected countries of strategic interest and related European international support services, and;
- Unique database for profiled projects related to clusters developed in various European programmes.

The European Commission has launched the development of collaborative projects through the COSME programme. This programme aims to strengthen the competitiveness and sustainability of companies, particularly SMEs, and to promote business culture, with a budget of 2.3 billion euros for the period 2014-2020. Through the COSME scheme two initiatives **have been created to promote alliances within the EU clusters:** Investment in Smart Specialisation (ESCP-S3) and Going International (ESCP4I).

Investment in Smart Specialisation ESCP-S3

The **European Strategic Cluster Partnerships for smart specialisation investments (ESCP-S3)** aim to facilitate the cooperation of clusters in thematic areas related to regional smart specialisation strategies (RIS3).

This is intended to **encourage the collaboration of companies, especially SMEs, as well as interaction with technology centres**. The objective is to generate joint actions through a **sustainable partnership process in priority areas for smart specialisation**.

- European partnerships of at least 3 different countries;
- It is strategic, meaning that participating clusters must be linked to RIS3 priority areas in the corresponding regions;
- Clusters will be represented through organisations along with science parks, technology centres and support services for SMEs;
- Associations will have a long-term participative character, and;
- Efforts will be made to promote smart specialisation by supporting inter-sectoral success and trans-regional value chains.

As regards the programme budget, it is estimated at a value of € 2,800,000, with a project maximum of € 350,000, which is expected to finance 8 projects. The maximum reimbursement rate is 75% of eligible costs.

Going International (ESCP4I)

The **European Strategic Cluster Partnerships for Going International (ESCP-4i)** aims to collaborate in strategies to jointly **internationalise** and help European SMEs access **third markets**. This activity is carried out in two phases.

The first phase, known as "*First generation*" was developed in **2016-2017**, and developed **15 consortia and 10 voluntary consortia**, which in total have involved some **150 cluster organisations from 23 European countries**.

The success of the first phase encouraged the European Commission to launch a second phase known as "*second generation*" for the period 2018-2019. This second generation is comprised of **23 alliances involving a total of 123 cluster organisations in 25 European countries**. The primary target markets for these associations include the US, Canada, Japan, China and Singapore.

Throughout both phases, there are a total of 47⁷² consortia, which involve the participation of more than 180 cluster organisations in the European community. These clusters are derived from all member countries of the EU, highlighting in the

72 <https://www.clustercollaboration.eu/eu-cluster-partnerships/escp-4i/profiles?generation=2>

second phase the participation of 24 clusters from France, 18 from Spain, 12 from Germany, 12 from Belgium and 11 from Italy, among others.

As regards the **types of projects financed**, the ESCP-4i programme has an **industrial and inter-sectoral** approach, including areas such as health, aerospace, mobility and logistics, agri-food, energy, marine and environment, packaging, materials and photonics, ICT, construction and sport. The second generation has been distributed across 8 large activity areas, particularly agri-industry and packaging, energy and environment and Smart City, logistics and transport.

7.3 Inter-cluster experiences in LAC

Although LAC countries have not implemented significant institutional initiatives in order to promote inter-cluster cooperation, cluster promotion strategies have acquired some relevance. In recent years, it has been possible to observe the achievement of a large number of diverse agreements of this type. However, there is no systematised information in LAC about these types of agreements, therefore, in this section examples are presented into two main categories: **agreements among clusters at local or national levels, and agreements among clusters in different countries.**

7.3.1 Cluster agreements at the local or national level

These agreements are executed by clusters within the same sector of activity, while located in different regions, and also within clusters from different sectors of activity, but with some degree of potential complementarity. In the latter case, it is mainly from interactions among producer clusters and demand for key inputs/technologies. Fairly widespread examples of the latter are links between IT clusters and clusters for traditional sectors that seek to incorporate digital solutions in order to innovate and increase competitiveness. Collaboration schemes among clusters within the same sector are usually aimed at adding resources so as to expand internal or external markets from joint initiatives, or to unify efforts to guarantee regulations and, in general, more favourable support systems from corresponding public institutions. The following examples are provided by way of demonstration.

» COLOMBIA

iNNpulsas Colombia, an institution that leads the national cluster strategy, has been encouraging the incorporation of an inter-cluster work axis (iNNpulsas, 2018). An example of this work is the project in gestation among clusters of naval shipyards in the Bolivar and Caldas regions. Another case is represented by the new strategy of the electric power cluster of Antioquia, which includes inter-cluster work on common themes and business lines complementing the services of electricity companies, with

other cluster initiatives in the textile, tourism, construction and ICT sectors within the same region of Antioquia.

Also in Antioquia, the digital business cluster has recently incorporated the development of inter-cluster initiatives through the Digital Business Centre as one of its strategic lines. This centre seeks to connect IT supply and demand, offering digital solutions to IT sector user clusters.

» BRAZIL

The promotion of inter-cluster links has not been a central axis of the national cluster strategy in Brazil; in several regions these experiences have advanced and consolidated in various directions.

For example, in 2014 the “National Meeting of Audio-visual LPAs” was held in João Pessoa, recognising the emergence of different regional audio-visual production centres and the need for coordination.

Among cases of inter-cluster agreements involving different sectors of activity, is the cooperation agreement between two clusters of the State of Rio Grande do Sul. This was signed in 2016 between the „Associação Arranjo Produtivo Local do Polo Naval e de Energia de Rio Grande e Entorno” and the „Associação Arranjo Produtivo Local Metal Mecânico e Automotivo” of Caxias do Sul. The objective was to promote joint actions to integrate producers and support institutions in both regions, working in naval and offshore areas, on the one hand, and energy and metalworking, on the other.

Another case presented for Brazil is that of Porto Digital, the IT cluster in Recife (Pernambuco), which developed intense support activity for clusters of traditional activities (particularly fruit and fashion). These interactions were promoted by the Government of the State of Pernambuco, which has funded a project called Armazém da Criatividade since 2014.

» URUGUAY

The National Directorate of Industry (DNI) of the Ministry of Industry, Energy and Mining of Uruguay implemented a policy during the period 2010-14 to promote interaction between the IT cluster of Montevideo and other IT user sector clusters, specifically: Naval, Pharmaceutical, Biotechnology and Forestry / Wood.

Based on an initial diagnosis, a series of interactions were driven in conjunction with the ICT cluster aimed at achieving:

- Dissemination of ICT usefulness among entrepreneurs;
- Training in the use of ICT for employers and workers;

- Internet presence, particularly companies in the repair sector with required customer relationships;
- Incorporation and update of hardware and software. Support and promotion of computerisation for companies in the sector, and;
- Possible developments in the naval industrial cluster. Computer systems for generation of an operational network for companies in the naval industrial cluster.

» ARGENTINA

A good example of an inter-cluster initiative within the same sector may be found in the structure of the Federal Council for Nuts and Dried Fruits, which emerged in 2014 as an initiative of the Walnut Pecan Cluster and the North Patagonian Nuts and Dried Fruit clusters of Mendoza and La Rioja, under the auspices of regional and national public and scientific-technological institutions.

This Council has been developing different activities of interest for all clusters, which include: a) national survey of the different sub-chains of nuts (walnuts, pecans, hazelnuts, almonds and pistachios), b) support for the opening of new markets, for example through the organisation of the „Nut Week“ and other advertising campaigns, c) simplification of regulations for the authorisation of active ingredients in so-called minor crops, where nuts are located.

7.3.2 Cluster agreements among different countries

In general, these agreements are carried out by clusters within the same value chain, and fundamentally seek to increase participation in external markets, to facilitate the transfer of technology and to achieve productive complementation. The following examples are provided by way of demonstration.

» COLOMBIA

Within the framework of the current cooperation agreement between iNNpuls Colombia and the Ministry of Education and Research of Germany, inter-cluster innovation meetings and projects are being driven by these two countries in the following areas: agri-industry and food, metalworking, construction and infrastructure, biotechnology and health, renewable energies and new materials. Following two meetings between iNNpuls, in Colombia and the Ministry of Education and Research in Germany, co-finance is available for projects enabling the strengthening of capacity and knowledge transfer in companies or business development organisations for innovation, Science and Technology⁷³.

73 <https://www.innpulsacolombia.com/es/oferta/cooperacion-cluster-alemania-coa2>

» BRAZIL

Within the national policy for promoting LPAs, the inter-cluster strategy was explicitly conceived as a tool for the service of internationalisation.

The Grupo de Trabalho Permanente para Arranjos Produtivos Locais (PWG LPA) is the inter-ministerial body in charge of national policy for the promotion of LPAs in Brazil. In 2015, coordinated by the Ministry of Development, Industry and Foreign Trade (MDIC), it brought together 39 Institutions. The PWG LPA work plan for 2012 included, for example, a Brazil-European Union Cluster Cooperation Agenda, which was to begin by organising dialogue within the sector. One of the initiatives was the organisation of meetings between Brazilian LPAs and French “Pôles de Compétitivité” in the metalworking sector.

Furthermore, the “Mais Brasil” Plan 2012-2015 aimed “to promote productive integration in South America, with priority for Mercosur, by stimulating complementarity among different links of regional value chains with the effective incorporation of the production of those countries into the productive process of Brazil”. To that end, productive integration among LPAs is proposed, particularly for naval, wind power, toys and automotive sectors.

The results of these macro-political attempts to encourage inter-cluster integration at international level are not clear, but certain concrete examples show the progress of some these experiences. For example, in 2016, the Aerospace and Defence cluster (São José dos Campos) signed a collaboration agreement with the Aerospace cluster of Baja California, Mexico, seeking to ensure mutual support in order to advance the global aerospace industry.

» MEXICO

In 2012, the ProMéxico agency signed a Memorandum of Understanding with the European cluster Collaboration Platform -ECCP-, aimed at developing synergies and relationships among clusters and SMEs in Europe and Mexico. Among the areas which in principle presented inter-cluster cooperation opportunities were: renewable energies, advanced engineering and biotechnology.

One of the iconic cases of international inter-cluster cooperation in Mexico is the Aeroclúster de Querétaro. In 2016, for example, this cluster signed a collaboration agreement with the Aeronautics and Space Cluster Association of the Basque Country (HEGAN), with the aim of developing the aerospace sector in the State of Querétaro and Euskadi, through the exchange of knowledge and experience, thus creating mutually beneficial opportunities. This initiative was sponsored by the governments of both regions. Also, this cluster has collaborative links with other foreign clusters: San Antonio Chamber of Commerce’s Aerospace Committee (Texas, USA), Aragonian aerospace cluster (Spain) and Aerospace Valley (Occitanie and Nouvelle Aquitaine, France).

» ARGENTINA

In 2012, the ProMéxico agency signed a Memorandum of Understanding with the European Cluster Collaboration Platform -ECCP-, aimed at developing synergies and relationships among clusters and SMEs in Europe and Mexico. Among the areas which in principle presented inter-cluster cooperation opportunities were: renewable energies, advanced engineering and biotechnology.

One of the iconic cases of international inter-cluster cooperation in Mexico is the Aeroclúster de Querétaro. In 2016, for example, this cluster signed a collaboration agreement with the Aeronautics and Space Cluster. Another interesting example of international inter-cluster cooperation in this country is the case of the Agricultural Machinery Business Cluster (CECMA), in the provinces of Santa Fé and Córdoba, which currently includes almost 600 companies.

For the past few years, this cluster has been collaborating with the MECCANO Centre in the Le Marche region in Italy, particularly in the field of direct seeding technology. The agreements provide for productive and commercial complementation and co-financing for technical assistance and human resource training. Certain Argentine companies have established commercial agreements with Italian counterparts and have begun to export to several Eastern European countries. For their part, Italian companies from Le Marche have partnered with CECMA firms to manufacture and sell equipment in Argentina.

7.4 Final Reflections on EU-LAC cooperation in clusters and territorial strategies

The interest shown in Latin America and the Caribbean by the EU's experience in regional policy has enabled **an increasing part of the bi-regional collaboration and the exchange of experiences** to now focus on the **management of territorial policies** based on **smart specialisation** and the **"value chain / cluster"** approach.

The cooperation and exchange of experiences between the EU and LAC in regional policy has emphasised the training of **authorities and agents of innovation systems in defining, implementing and managing territorial innovation policies**, largely based on participatory processes where clusters and the value chain approach have played a critical role.

The regional policy and value chain/cluster mix that has been promoted in these bi-regional dialogues has been reinforced with the recent importance of smart specialisation strategies in Europe. Thus, there are currently several EU-LAC cooperation programmes on productive and innovation issues that see **cluster and smart specialisation integration as territorial development tools**.

On the other hand, inter-cluster collaboration is one of the key points of the cluster policy approach in the EU. For this reason, the European Commission, through the European Observatory for Clusters and Industrial Change (EOCIC) works to facilitate this collaboration. To this end, different initiatives have been launched through the COSME and HORIZON2020 programmes. To facilitate this collaboration between clusters, the EOCIC has developed a virtual platform called the *“European Cluster Collaboration Platform”* (ECCP).

Although LAC countries have not implemented significant institutional initiatives to promote inter-cluster cooperation, it is possible to observe in recent years the realisation of a large number of agreements in this field. Many of these experiences have been driven by the clusters themselves and, in some cases, these initiatives emerged under the direct auspices of more or less structured public policies.

In short, EU-LAC cooperation has been incorporating territorial development and cooperation among regions as a central theme, and there are several support programmes at that level. For its part, inter-cluster cooperation is growing within the EU and has important incentives for internationalisation. **There is undoubtedly considerable room to think and design more effective mechanisms to promote inter-cluster cooperation between the EU and LAC.**

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

During the last decades a continuous but fragmented process of approximation between clusters and territories of the European Union and of Latin America and the Caribbean has taken place. Given that in recent years regions and clusters have been increasingly recognised on both sides of the Atlantic as important elements for the building innovation and competitiveness capacities, and that cooperation between them allows important benefits to be achieved - such as, for example, economies of scale and specialisation - initiatives to strengthen collaboration at that level have emerged.

The “Competitiveness Poles” Project, promoted by the EU-LAC Foundation and the Ibero-American General Secretariat, is part of this set of initiatives. The **Working Group** created under this Project, made up of institutional actors (public and private) of both regions, linked to activities of promotion to clusters and innovative regions, **is an initiative that has allowed collective elaboration concerning some of the main challenges posed.**

First of all, there is **recognition of the asymmetries existing between the EU and LAC** in terms of the degree of development and institutionalisation of the policies for promoting clusters and innovative regions.

In LAC in recent years several countries have implemented cluster policies with good results in terms of innovation, competitiveness and employment. New and important interactions between local, regional and national actors have been developed as a result of these policies, helping to value the territories as relevant spaces for the competitive development of the countries. In the same way, support for more emergent clusters and in less industrialised regions has contributed to diminishing productivity gaps and regional inequalities.

However, policies to promote clusters have not yet been generalised in LAC and, where they exist, they have not always been sufficiently hierarchical or had continuity over time.

On the other hand, and although the situation in LAC is very heterogeneous, there is generally a **great weakness in policies, institutions and regional infrastructures dedicated to productive development and above all to innovation.** In many cases, the

great political centralisation determines the regional level of intervention, available technical capacities and the institutional configuration.

At present, there is greater concern and a favourable evolution at that level. Several LAC countries are making efforts to promote greater decentralisation in general and innovation policies in particular. Even the **smart specialisation approach inspired some recent initiatives** aimed at boosting regional innovation agendas but also incorporating cluster-building components.

For its part, **in the EU, clusters have been considered for many years as a key element to promote competitiveness**, and that is why the European Commission has a well-established **cluster policy aimed at industrial reinforcement and interregional cooperation, internationalisation and excellence** in clusters. In turn, complementarity between the national and regional level of cluster policy is a priority in Europe, where national actions are combined with other support initiatives at regional level.

In addition, current EU **policies underline the importance of combining the cluster policy with the Smart Specialisation Strategies (RIS3)** to promote the economic and industrial development of the regions. This new orientation is permeating all European, national and regional initiatives related to clusters and regional innovation. In any case, progress in this direction must still be confirmed by the concrete and effective construction of these strategies.

Despite the EU - LAC asymmetries mentioned above, **it has been possible to identify a set of common problems and challenges related to cluster policies and regional innovation.**

One of them has to do with the sustainability of cluster initiatives beyond initial public support. The establishment of governance models as well as various mechanisms and incentives that allow effective participation of the main stakeholders - and especially the private ones - during all phases of the process, is vital to promote their empowerment, leadership and the strengthening of their capacities for the implementation of these initiatives. It also seems key to **strengthen methodological aspects that facilitate empowerment and encourage the initiative of Cluster managers.**

Another common challenge is related to **the necessary and effective integration between cluster policies and regional innovation strategies.** This integration is clearly defined in the design of European policies, but it is necessary to advance in its effective implementation.

There is complementarity and synergies between both dimensions. On the one hand, clusters need broader positive contexts than specific promotion policies: at regional level, they must be embedded in ecosystems of innovation and competitiveness that allow them to develop. On the other hand, the Regional Innovation Strategies must

include and be reinforced by the clusters of each territory, which should contribute to the identification of regional specialisation patterns as well as to the identification of enabling technologies that can be prioritised within the framework of the regional strategy. An important challenge that derives from this is **the construction of new governance models that allow the coordination and integration of Cluster Initiatives and Policies in the Smart Specialisation Strategies.**

Finally, another common challenge to the clusters and regions of the EU and LAC has to do with the **implementation of cooperation agreements** between them, either within these geo-political spaces or between clusters and regions of both spaces (the latter being the main objective of the “Competitiveness Poles” Project). These agreements can promote the integration of international value chains and result in new boosts to innovation and interactive learning.

8.2 Recommendations

Inter-cluster collaboration is one of the key points of the current approach to cluster policies in the EU, and particularly within the smart specialisation strategy. Agreements of this type have also emerged in LAC, although not on a sufficient scale due to the absence of specific promotion programmes. **There is undoubtedly much room to think and design more effective mechanisms to promote inter-cluster cooperation between the EU and LAC.**

In fact, the interest shown in LAC about the EU experience in regional policy has laid the basis for **a growing part of the bi-regional collaboration and the exchange of experiences to focus on the management of territorial policies based on smart specialisation and the “value chain / cluster” approach.**

In that sense, **some lines of future work** could be envisaged, that would certainly help to reinforce this new direction of bi-regional cooperation. For example, the mapping, balance and systematisation of the diverse experiences, which have been largely developed in a decentralised and spontaneous manner, could shed light on the incentives and obstacles faced by these processes, and the specific support they demand.

Specific and targeted mechanisms could also be designed to foster inter-cluster cooperation between the EU and LAC, and their results could serve as a basis for the design of a more ambitious programme pointing to a greater proliferation of these agreements. Another line that could surely contribute to strengthening the current direction of bi-regional cooperation would be to better understand the restrictions to greater integration of RIS3 policies and clusters in LAC and the real opportunities for cooperation with the EU in that area.

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