EU-LATIN AMERICA COOPERATION ON REGIONAL INNOVATION STRATEGIES IN THE FRAMEWORK OF REGIONAL POLICY

Executive Summary

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Executive summary

Context and objectives of the study

The DG Regio and the EU-LAC Foundation have supported, and continue to support, several initiatives in Latin America regarding the definition of RIS strategies, EU-LAC bilateral exchange of experiences, and in a wider sense, projects aimed at strengthening regional innovation systems and improving regional innovation policy. As a further step in this set of initiatives, the general objective of this study is to identify and support the generation of sustainable and socially responsible EU-LAC bi-regional value chains. This opens a vast field for potential long-term win-win partnerships where the EU experience could both be used and recycled. It also would form the basis of better mutual understanding and common practices in terms of economic development and cooperation.

The objectives of the study were: i) Taking stock of existing regional innovation strategies, policies and actions in 9 Latin American countries; ii) Considering how regional innovation strategies could contribute to improving sustainable territorial competitiveness in Latin America and iii) Identifying new opportunities for EU-LAC cooperation in regional innovation strategies in the territories concerned.

Methodology

The first step has been to assess extensively the existing policy documentation and third-party reports on RIS in Latin America. The conclusion of this first assessment is that four POLOS countries have regional innovation strategies in place (Brazil, Chile, Colombia and Mexico). In the case of Chile, Colombia and Mexico, they respond to national agendas and are therefore present in most regions.

Meanwhile, Five POLOS countries do not have regional strategies in place, or they have not been found or clearly identified (Argentina, Costa Rica, Ecuador, Peru and Uruguay). None of these countries is, at the current moment, engaged in national or regional programmes to generate RIS strategies. Nevertheless, they clearly assess the importance of strengthening regional innovation systems and of decentralising public policy and private investment in R&D&I. The efforts in this direction vary in strategy, intensity and success.

General insights and conclusions on the status and development of RIS strategies and regional innovation ecosystems have been established for all POLOS countries. In countries and regions with a RIS in place, bilateral cooperation opportunities with European regions have been selected and defined. In countries without RIS three types of cooperation opportunities have been characterised: i) Cooperation in horizontal national or regional priorities, ii) vertical priorities in regions building regional bilateral cooperation programs and iii) vertical priorities with thematic focus. Finally, multilateral, network-based cooperation opportunities focusing on shared European and American priorities have also been identified, which could be understood as global challenges to be addressed via complex multi-level programmes.

The task of identifying promising bi-regional matches between American and European regions is conditioned by the high number of regions (over 200 in LATAM and over 250 in Europe). Thus, an automated methodology has been developed in order to find the European closest matches to American regions, according to the similarities in their selected specialisations. This process resulted in the pre-selection of around 120 cooperation opportunities, which were later analysed one by one according to quantitative and qualitative knowledge about the American and European regions involved.

A very rich database of regional specialisation - as defined in Brazil, Chile, Colombia and Mexico’s regional innovation strategies - has been built, following the format and content of the Eye@RIS3 database of the European RIS3 Platform. In its current state, this database contains 1309 specialisation sectors in 219 European regions (the original information compiled by the S3Platform (and 579 specialisation sectors in 49 American
regions or macro-regions (compiled during the current works). This database is a powerful tool capable of identifying new and more complex EU-LAC cooperation opportunities, and opportunities for policy improvement and the use of RIS tools at the regional and national level; it has only been narrowly exploited for the current report.

### RIS in Latin America: key findings

The following is a map portraying the state of RIS in the regions within the scope of the study. Only 49 regions have developed a formalised regional innovation strategy.

#### Current situation of RIS in the POLOS countries

- **White**: Country out of scope
- **Red**: No RIS
- **Pale green**: There is RIS
- **Medium green**: There is a RIS with participation, instruments and executive agents
- **Dark green**: There is a regional strategy with participation, instruments, executive agents and an allocated budget

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**Argentina**: Argentina does not currently have Regional Innovation strategies in place in its provinces. However, some of them present strong innovation ecosystems, which have lead to the creation of provincial Innovation agencies. At a national level, Argentina has created the National Science, Technology and Productive Innovation Plan “Argentina Innovadora 2020”. Most regions only have an office of the Ministry of Science, Technology and Productive Innovation (MinCyT for its name in Spanish), and policy tools defined at the regional level mostly run down from the central government.

**Brazil**: In Brazil the federal government concentrates the main agencies responsible for policy formulation and management and coordination of the system. The current Science, Technology and Innovation (STI) policy aims at consolidating and upgrading the National Innovation System by integrating all regions and growing public support for R&D and innovation policy. Some states have developed their own RIS strategies, at the state level, at sub-state level (for instance in Santa Catarina) and at supra-state level (for instance in Amazonia or Northern Brazil). It is important to note that the National Innovation System is highly formalised, and, in this framework, it is easier for states and regions to define their institutional and policy design.

**Chile**: In Chile, European cooperation was a milestone regarding the creation of Regional Innovation Systems (RIS) through the RED Project. The first phase of the RED project led to the development of RIS strategies in Arica and Parinacota, Tarapacá, Antofagasta, Coquimbo, O'Higgins, Biobío and the Metropolitan region. In a second stage, four more regions developed their RIS: Valparaíso, Araucanía, Los Lagos and Aysén. However, there are important gaps to be solved in the internal relations and functions of regional innovation systems.

**Colombia**: From 2012 onwards most Colombian regions have published a Departmental Strategic Plan for Science, Technology and Innovation – PEDCTI. The PEDCTIs are 10 year roadmaps for the development of policies and tools aimed at strengthening regional innovative systems and frame and focus future investment efforts by the public sector. As a result, most regions have established a 10 year budget and funding plan. Most
of the funding for these regional plans come from Colombia’s General System of Royalties (“regalias” from natural resources exports), and the expected (national) Science and Technology Fund.

**Costa Rica:** Costa Rica does not have RIS strategies in place. Regarding innovation, the national entity in charge is the Ministry of Science, Technology and Telecommunications (MICITT). The MICITT launched in 2014 “2021 ROUTE”, which serves as a basis for developing the National Plan for Science, Technology and Innovation (PNCTI). The Plan sets out five priority areas at the national level: energy, food production, education, water/environment and health, and acknowledges the transformative strength of ICT across the board.

**Ecuador:** Ecuador regions do not have RIS in place. The country is currently undergoing a process to shift and add value to its national production matrix (Estrategia Nacional de Diversification Productiva - ENCMP). One of the pillars of the ENCMP is innovation and research, resulting in the creation of the National System for Science, Technology, Innovation and Ancestral knowledge (SNCTISA for its name in Spanish). Two of its main objectives are i) the generation, adaptation and dissemination of scientific knowledge and ii) the development of technologies and innovations to promote national production, increasing efficiency.

**Mexico:** Leading a national initiative, the CONACYT (National Council of Science and Technology) has carried out the design and development of the Regional Innovation Agendas. The Agendas address economic and social challenges and opportunities by attracting private sector investment in technological development and innovation while generating synergies between sectors and regions and key technologies. It is expected that Innovation Agendas will become an instrument of public policy to coordinate the interaction of states with different levels of support for innovation and, in particular, programmes of CONACYT to promote joint investment in sectors and niches of high influence in regional economies.

**Peru:** Peru does not have RIS strategies in place. However, in 2014, the Ministry of Industry, in line with the National Plan of Productive Diversification, started a promising process that could boost the structuring of regional innovation systems and the development of sectors of higher added value. Another initiative is the National Innovation Programme for Competitiveness and Productivity, also known as Innóvate Perú, created in 2014, which centralizes the actions, programs, funds and instruments supporting innovation of the Ministry of Production.

**Uruguay:** Uruguay currently does not have Regional Innovation Strategies in place. In Uruguay’s National Plan for Science and Technology, one of the objectives is to promote local innovations within a decentralized regional development framework. However, they have not been able to advance this goal to their satisfaction. In 2014 the Industrial Extension Centre was established with the objective of linking the private sector in the regions with public policy instruments and knowledge and capacities at public R&D institutions and universities.

**Topics of interest in Latin America**

After reviewing the set of specialisation sectors in the POLOS regions with RIS, it is evident that some topics concentrate the interest of a large number of regions. It can be expected that in regions or countries without formalised RIS strategies, these topics are also relevant.

The following table lists the sectors and topics most usually selected in Latin American regional innovation strategies:
There is wide interest in the agriculture and food value chain, energy (particularly renewables), tourism human health, biotech, mining and raw materials and ICT. Some industrial specialisations (the automotive industry, textiles or pharma) are also specialisation topics of interest in LATAM.

### New opportunities for EU-LAC Cooperation

46 particular opportunities for EU-LAC cooperation have been identified and characterised in the current document. These are mere proposals and have to be further analysed and be found of interest to all stakeholders involved. Of those:

1. 11 correspond to bi-regional cooperation between POLOS and EU regions which have RIS strategies in place. These opportunities have been selected according to the similarity in their specialisation vision and efforts, as defined in their RIS.
2. 31 correspond to vertical or horizontal challenges, opportunities and policy trends in countries and regions with no RIS strategies in place.
3. 4 correspond to potential multinational collaboration platforms addressing priority topics for the POLOS countries and for the EU.

During the process by which these particular opportunities have been selected, hundreds of alternative opportunities have been identified and characterised in varying degrees. This corpus of alternatives can be utilised in the future to expand or refocus EU-LAC cooperation.
1. Bi-regional cooperation between POLOS and EU regions

The selected bi-regional opportunities, including the shared topics or sectors of interested, are listed below.

**Brazil**
- Amazonia Legal - Sweden: Manufacturing & Industry and Mining & quarrying
- Brazilian Northeast- Słaskie (Poland): Energy production and Manufacturing & industry.

**Chile**
- Antofagasta – Sicily (Italy): Agriculture, forestry and fishing; energy production and Distribution; tourism, restaurants and recreation.
- Bio-Bio - Basse Normandie (France): Agriculture, forestry and fishing; Energy production and Distribution and ICT.
- Valparaíso – Catalonia (Spain): Creative, cultural arts and entertainment; Energy production and Distribution; manufacturing and industry; transport and storage.

**Colombia**
- Antioquia - Flemish Region (Belgium): Energy (production and Distribution) ad energy efficiency, ICT, agroindustry and food biotechnology, Advanced materials industry.
- Bolivar – Nordjylland (Denmark): Transport and storage, tourism and heavy industry (naval).
- Valle del Cauca - Galicia: Meat production and the wider food industry, fishing and aquaculture, biomass/biofuels, human Health, software and ICTs, textiles, Automotive industry and tourism.

**Mexico**
- Jalisco -Ireland: Agriculture, Livestock and food industry, Health and pharmaceutical industry, ICT technologies and creative industries.
- Michoacán - Northern Netherlands (Netherlands): Agroindustry and renewable energies.
- Puebla - Rheinland-Pfalz (Germany): Advanced manufacturing (heavy Automotive industry), textiles and chemicals.

2. Cooperation opportunities in regions without RIS

**Argentina**
- Clusters Policy
- Agroindustry
- Environment and sustainable development
- Social development
- Industry

**Brazil**
- Health
- Cluster management and internationalisation
- Fostering Green economy and R&D+i for Social Development
• Improve the best practices in energy management

Costa Rica
• Strengthening the education system.
• Energy
• Production of food and manufacturing,
• Technologies, biosciences, related to health such as biomaterials and information systems.
• Nanotechnologies

Peru
• Industrial parks in the framework of the Plan Nacional de Diversificación Productiva
• Science and Technology parks
• Technological Innovation Agendas (AIT)

Ecuador
• Agroindustrial production chain
• Manufacturing chains articulated with basic industries
• Knowledge intensive service and sectors production chain

Uruguay
• Regionalisation of innovation
• Advanced human resources
• ICTs and the Bioeconomy applied to the primary, agroindustry and service sector

3. Multinational collaboration platforms addressing priority topics for the POLOS countries and for the EU

1. Modernisation and added value in Agriculture and the Food Industry
2. Fishing and Aquaculture
3. Mining and raw materials
4. ICT and the digital Economy

Roadmaps for developing EU-LAC cooperation opportunities

A tentative roadmap for the development of the cooperation opportunities, adapted to the different cooperation typologies has been proposed. It covers the following elements: Objectives and description of the cooperation opportunity, Action plan, Leadership, Participants and stakeholders, Budget and economic model, Governance of the cooperation, Follow-up and evaluation system

Final conclusions

The concept of regional innovation strategies, and more generally, the management and growth of regional innovation systems is pervasive in Latin American regional policy and documentation.

Multiple vertical and horizontal opportunities can be identified between these POLOS and EU regions and national systems. With the information compiled from American and EU RIS strategies, smart bi-regional partnerships between regions with a shared specialisation can be identified. It is also possible to gauge widespread topics and challenges of interest that can lead to multilateral network-based collaboration platforms.

In countries with little fiscal and administrative authority and in regions were capacity for innovation is low, the best way to address existing challenges and opportunities is by means of focused horizontal and vertical policy, investment and cooperation initiatives. Therefore, regional innovation ecosystems can benefit enormously from focused projects and cooperation without the need (at this moment) of developing formal regional innovation strategies.

The current study, and particularly i) the large amount of information gathered and analysed, ii) the RIS database compiled for POLOS countries and iii) the automated process developed, configure a powerful platform and tool to identify and assess bi-regional, multilateral and thematic cooperation opportunities, and can guide future developments in EU-LAC cooperation in RIS, innovation policy, competitiveness and shared value chains.

The definition of RIS strategies in POLOS regions contribute to improving sustainable territorial competitiveness in Latin America and establish innumerable development, innovation and collaboration opportunities that can be made the most by establishing multilevel cooperation between public administrations, value chains and quadruple helixes in all concerned countries and regions.