

Smart specialisation in peripheral and border regions in Latin America – challenges and lessons

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Abstract

The paper presents the practical experience of fostering innovation and smart specialisation in Latin-American border regions. The INNOVACT platform seeks to transfer some of the 25 years' experience in EU transnational and cross-border cooperation as well as EU S3 (smart specialisation) approaches to peripheral areas in Mexico, Guatemala, Colombia, Peru, Chile, and Ecuador. The INNOVACT platform, supported by the European Union, aims to identify and develop cross-border value chains, not only between political institutions or national and regional authorities but, in particular, between agencies and players – public and private – who work on a day-to-day basis with the promotion of SME innovation, clusters and business competitiveness. Creating useful EU-LATAM partnerships between regions from the two continents is another aim of INNOVACT. The paper draws conclusions for future work with Latin American and other non-EU regions on S3 approaches and support to regional competitiveness. It highlights challenges and lessons learned by comparing experiences in Latin American regions. It focuses on the different settings and models of regional and multi-level governance that exist in Latin American countries and that have an influence on the work with the different actors of smart specialisation. Interesting conclusions are driven from the specific focus of INNOVACT on peripheral border regions, i.e. a type of region that is not that prominent in other on-going approaches to transfer S3 to Latin American advanced regions. The paper presents empirical evidence on applying S3 approaches in peripheral and cross-border regions. It examines if a territorial perspective needs to be added to the S3 approach.

1. Introduction

INNOVACT is a cooperation project supported by the European Union with the ambition of diffusing its regional policy experience and good practices in Latin America; and to prepare and develop further cooperation between regional authorities and specialised agencies on innovation policy decision-making and governance from EU and Latin American border regions.

The project runs from the beginning of 2017 to the end of 2018. The INNOVACT project is sponsored by the European Union in the framework of its bilateral cooperation with the Community of Latin American and Caribbean States (CELAC). Funding for the project has been allocated by the European Parliament, while the management of the project is under the responsibility of the European Commission's Directorate-General for Regional and Urban Policy. The project counts with additional support from Ministries and Agencies in the relevant Latin American countries.

A consortium of partners led by Technopolis Group, in collaboration with Spatial Foresight, Competitiveness, Tecnalia, WAAT, and the European Regions Research and Innovation Network (ERRIN) are responsible for implementing the project.

The specific objectives of INNOVACT are:

- To facilitate the sharing of information and lessons between European and Latin-American cross-border regions on promoting cross-border cooperation, innovation systems, clusters and competitiveness,
- To identify and develop strategies, action plans and concrete projects or programmes for the development of cross-border value chains,
- To stimulate and contribute to a learning process based on concrete examples and best practices.

INNOVACT supports cross-border cooperation and innovation in four CELAC border regions, located in six countries:

- México - Guatemala
- Colombia - Ecuador
- Colombia – Perú
- Peru - Chile

In each of these regions INNOVACT establishes contacts and an active knowledge transfer process between CELAC and European partners from government, administration, business, science and civil society. Activities in support of the achievement of these goals include:

- Provision of expert support to Latin-American cross-border regions in the process of developing a cross-border innovation and/or productive development strategy.
- Organisation of regional/national conferences with workshops to bring stakeholders together and facilitate learning processes.
- Organisation of study visits to Europe for cross-border region stakeholders and partnering opportunities between EU and Latin-American regions.
- Capacity building measures such as ad-hoc training sessions, webinars, and conferences.
- Development of an on-line platform and repository with relevant knowledge including best practice and expert database: <http://www.innovactplatform.eu>

2. Cooperation on regional innovation development between the EU and Latin American countries

The European Union and Latin America and the Caribbean are natural partners, linked by strong historical, cultural and economic ties. They share a strategic bi-regional partnership, which was launched in 1999 and stepped up significantly in the recent years. The two regions co-operate closely at

international level across a broad range of issues and maintain an intensive political dialogue at all levels. The Community of Latin American and Caribbean States (CELAC) was launched in 2011 and represents a regional political coordination mechanism, which gathers all 33 Latin American and Caribbean countries in the region. CELAC is the EU's official counterpart for the region-to-region Summit process and strategic partnership.

The European Union's engagement with CELAC is part of a flexible approach to its relations with Latin America and the Caribbean, combining different levels of relations –regional, sub-regional and bilateral– which are complementary and mutually reinforcing. An EU-CELAC Summit is held every two years. The last Summit took place in Brussels in June 2015, bringing together 61 EU and Latin American and Caribbean leaders, including more than 40 Heads of State or Government. At this summit, the leaders of both regions adopted two declarations and a revised EU-CELAC Action Plan. They have identified ten priority areas for bi-regional cooperation for 2015-17. The EU-CELAC Action Plan identifies instruments and activities which should lead to concrete results guaranteeing ownership and capacity building. Within this latter area, there is the intention to engage in a dialogue on territorial cohesion and equity and on regional development policies, with a particular focus on cross border cooperation and on territorial development strategies, to strengthen the capacity of the regional and urban authorities to promote economic development and innovation and social inclusion and cohesion.

As the development of the region has advanced over the last decade, the European Union's policy has increasingly shifted from Official Development Assistance (ODA) towards a partnership approach. The Partnership Instrument allows the EU to cooperate with partners around the world to advance the Union's strategic interests and tackle global challenges. The European Commission has supported cooperation in trade and investments with programmes like AL-INVEST 5.0, which aims at enhancing productivity of Latin American SMEs. The European Investment Bank also supports the internationalisation efforts of SMEs through easier access to financing, for example through a partnership with the Inter-American Development Bank, in which the two institutions have joined forces to set-up a loan facility for SMEs and bigger enterprises.

The Directorate General for Regional and Urban Policy (DG REGIO) acts in support of, and in cooperation with the European External Action Service EEAS and with DG TRADE. There is a growing interest in different parts of the world, including Latin America, in the process of European integration. In this context, DG REGIO established regional policy dialogues with Brazil (2007), Argentina (2012), Chile (2010), Peru (2013), Mexico (2014), SICA (2015) and Colombia (2015).

There have been concrete projects that can be considered as relevant:

- EU-Chile cooperation on regional policy: Study visit by representatives of Chilean regional authorities and SUBDERE, in the framework of the "Regional Innovation Strategies" programme co-funded by the EU, to Brussels, France and Spain, 11-15 July 2011. Both sides agreed to carry out in 2013 a technical assistance project applied to the definition and management of regional innovation strategies. The project builds on the results achieved by the RED project which helped in 2011-2012 to establish and design the regional innovation strategies for some Chilean regions, and will allow other Chilean regions to benefit of the European experience.
- EU-Peru cooperation on regional policy: In May 2013, DG REGIO and the Ministry of External Relations of the Republic of Peru exchanged letters of intent establishing a dialogue on regional policy and border integration. Under cross-border cooperation, three workshops on "regional development and border integration" were organised in November 2012 in Cusco, Tarapoto and Lima, which allowed DG REGIO and European experts to exchange experiences and good practices with Peruvian practitioners on regional policy definition, management and cross-border cooperation. In 2013, a comparative empirical study was carried out of the regional innovation systems of two Peruvian regions to explore desirable criteria upon which systemic innovation at the regional scale might occur. The study provides key findings and good practices through the development of two case studies underlying the place-based dimension of innovation.

- EU-Argentina cooperation on regional policy: In July 2016, DG REGIO and the Secretariat of Provinces of the Ministry of Interior of the Republic of Argentina exchanged letters of intent establishing a dialogue and preparing possible cooperation projects on regional innovation systems and cross-border cooperation.

Similar bilateral dialogues and agreements have been launched with Mexico, Colombia and the General Secretariat of the Central American Integration System (SICA).

EU-Latin America cooperation on regional innovation systems

DG REGIO has supported since 2011 several projects in Latin America (Brazil, Argentina, Chile, Peru) to exchange experiences between Latin American and European regional authorities and specialized agencies in policy setting, implementation and management with respect to clusters and SME innovation inducing policies.

- EU-Latin America cooperation on regional innovation systems in the framework of regional policy (2011-2013) on the regions of Cordoba (Argentina), St. Catarina (Brazil), Emilia-Romagna (Italy) and Baden Württemberg (Germany).
- EU-Latin America Cooperation on Regional Innovation Strategies in the framework of Regional Policy (2013-2015).
- EU-Latin America Cooperation on Regional Innovation Systems in the framework of Regional Policy (Chile and Peru) (2014-2016).
- EU-Latin America Cooperation on Cross-Border Regional Innovation Systems in the framework of Regional Policy" project (2013-2015) has promoted cooperation between authorities in the border regions of Peru and Brazil, and has identified the innovative sectors key to cooperation between the regions participating in the project. Based on the lessons learned through European experiences, and the results of collaboration with local stakeholders, a strategic approach was devised to guide actions at the regional level, making it possible to coordinate and align the different actors in the border area in light of the needs and opportunities posed by the aquaculture value chain as regards Cross-Border Cooperation (CBC), and the development of regions, their companies and peoples.

EU-Latin America cooperation on cross-border cooperation

DG REGIO in cooperation with the Association of European Border Regions (AEBR) has conducted several studies to support integrated and sustainable development and cross-border co-operation in different border areas in Latin America.

In 2012, DG REGIO organised two information sessions/study visits and four workshops to train Latin American participants (Argentina, Brazil, Bolivia, Chile, Paraguay, Peru and Uruguay) on regional policy issues in the field of cross-border cooperation with the overall aim of strengthening bilateral co-operation by offering Latin American regional participants a source of reference when further developing their policy strategies and actions in order to promote better cross-border cooperation. The main conclusions and results of the information sessions were presented to the regional and local stakeholders in four workshops to discuss opportunities and problems that may arise in the implementation of specific recommendations in the light of European and Latin American local realities. In 2013, two similar information sessions and three workshops are organised for Latin American experts from border areas of Brazil, Bolivia, Colombia, Ecuador and Peru.

3. Smart specialisation in Latin American border regions

Smart Specialisation is a policy approach to support the effectiveness of Cohesion Policy in the European Union and to stimulate growth and development of European regions. It is based on the approach to developed regional innovation systems and to apply a place-based approach to economic development. Developing a Research and Innovation strategy for Smart Specialisation (RIS3) is currently a prerequisite for European regions in order to receive funding from the Cohesion funds to support their Research and Innovation initiatives. The Smart Specialisation approach requires

developing a regional partnership of all relevant stakeholders that are involved in innovation. It also requires looking beyond the national/regional administrative boundaries. Countries and regions should identify their competitive advantages through systematic and constructive comparisons, mapping their national and the international context in search of examples to learn from and performing effective collaboration (Foray et al, 2012). Moreover, each country/region should be able to identify relevant linkages and flows of goods, services and knowledge revealing possible patterns of integration with partner regions. This is mostly important in the case of less developed countries/ regions that would often require to collaborate with other regions to join know-how and technology.

Countries in Latin America still address development challenges such as high levels of poverty and inequality, and deep productivity gaps with respect to developed economies. The globalization and the technological change also pose major challenges in terms of tapping into the opportunities that they offer without compromising sustainable development and social justice. In this sense, Latin American countries acknowledge the importance of innovation for long-term economic growth and for the well-being of their populations. They recognize that improvements in their technological and innovation capacities will lead their economies towards a productivity growth, higher value-added activities and improved living standards. Nevertheless, most of the firms in Latin America are still far from the technological frontier. This highlights the weaknesses of the National Innovation Systems in the region. Innovation strategies are usually oriented to the acquisition of foreign technologies, which are integrated into local production systems. Latin America economies have grown as a result of accumulation of factors (labour and capital), without experiencing significant increase in total factor productivity. They are confronted with a severe deficit in terms of incorporation of knowledge and technology to their productive processes. A study by Crespi and Zúñiga (2012) on the determinants of technological innovation and its impact on firm labour productivity in six Latin American countries, confirmed that firms that invest in knowledge are better equipped to introduce technological advances, and those that innovate have higher labour productivity than those that do not. This finding suggests that in Latin America there is a great potential to benefit from increased investment in innovation in terms of productivity gains.

Several years ago, the concept of regional innovation systems was still new to most Latin American countries (Banco Interamericano de Desarrollo 2011). In most countries, innovation and research policies are still governed at central level. Over the last years, countries such as Chile, Colombia, Mexico, Brazil and Peru have started to apply a more regional and bottom-up approach for the promotion of competitiveness and innovation. More and more place-based interventions can be observed at regional and local level to identify and exploit the innovation potential from and with endogenous resources. Barroeta et al. (2017) analysed the most recent developments:

- *“Currently, several regions of Latin America are conducting pilot activities aiming at testing the adaptation of the smart specialisation approach according to their own territorial characteristics and socio-economic contexts. In a more advanced stage, other regions count on a motivated political and institutional support to deploy structured specialisation including allocation of resources, elaboration of strategic planning and integration of inclusiveness in the selection of priorities.*
- *Collaborative frameworks between the European Union and Latin America have increased in the issue of smart specialisation allowing stakeholders of both continents to speak a similar regional-innovation language. The novelty of the smart specialisation concept in the EU as well as its adaptation in the Latin-American context is evidencing common framework for cooperation aiming at connecting policy makers and positioning specialisations in global value chains.”*

Today, two different trends can be observed in many Latin American countries, with regard to regional development linked to innovation and smart specialisation. First, the concentration on capital city regions and metropolitan regions that are dominated by the growth poles such as Bogotá, Medellín or Santiago de Chile. Naturally, a large part of innovation-based and technology-related growth is located in these ‘world cities’. Secondly, regions that for a long time had been the industrial or economic engine in their countries are starting to develop clusters and networks based on triple and quadruple helix approaches, using the smart specialisation concept to engage stakeholders and to define their own regional and local

policies (see also Gómez Prieto/dos Santos 2017). Thus, an increasing uptake of regional innovation systems and the smart specialisation approach can be observed. But, even in these two types of regions – metropolitan and growth regions – smart specialisation still faces several challenges to be transferred from the European to the Latin American context:

“Political will of regional and national authorities to progress toward decentralised development strategies, particularly in the fields of research and innovation; the technical capacities available and the institutional configuration. These aspects are evident not only in the availability of resources and human capital, but also in the relevance of centralisation which conditions the regional level of intervention; the limited financial resources to carry out the production transformation process necessary to assure added value in each of the production segments; the limited capacity to mobilise regional and local agents, including civil society against the observed high degree of motivation shown by these actors in pilot experiences related to regional specialisation.” Barroeta et al. (2017)

This is the general situation that has to be considered when applying the smart specialisation approach in the Latin American context.

However, considering a third type of Latin American region, the peripheral and border region, the difference between the EU and the American context becomes even more severe. Without a legal and administrative framework to support cross-border and binational trade, professional relations and investments, the low density of population, the remoteness and the limited size of markets represent additional challenges.

In fact, Latin American peripheral and border regions suffer widely from:

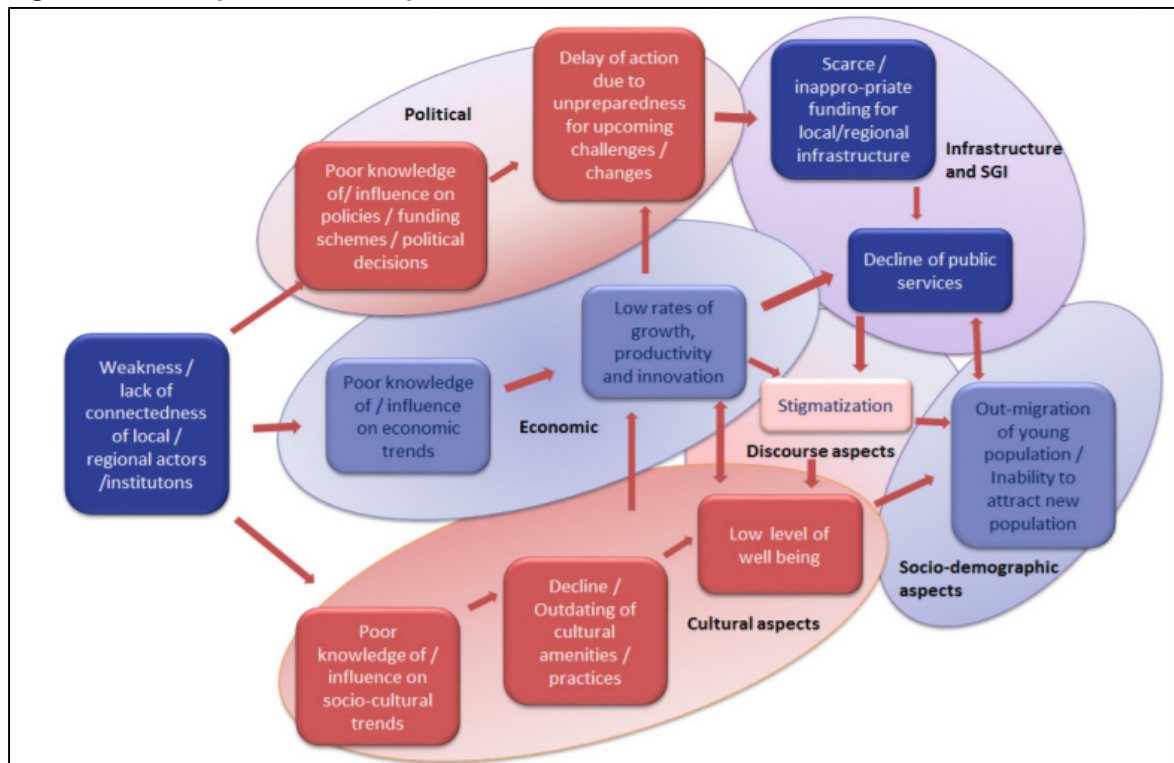
- remoteness that leads to high transportation costs for relations with the rest of regions in their own country and with global markets;
- lack of infrastructure for transport, energy supply, education and telecommunication;
- difficult topography that lead to higher costs for transport infrastructure investment and maintenance;
- challenging climatic conditions and high exposure to natural hazards such as earthquakes, floods, volcanic eruptions;
- low population density and small size that generates limited economies of scale and agglomeration; reduced numbers of private companies and investors do not allow for meeting a critical mass for many professional activities and services;
- economic dependence on a few products (mostly commodities) that enhances vulnerability to fluctuations on world markets;
- Some regions, even if on the mainland, can be considered as highly isolated (e.g. in Amazon regions that can only be reached by air transport) that implies functional disconnection from neighbouring territories, and a limited access to global value chains.

These conditions can be found in Europe rarely in usual border regions, but mostly in regions with specific territorial conditions such as outermost regions or, to a certain extent, in islands, mountainous regions or sparsely populated areas, mostly in the northern European countries.

The consequences for social and economic processes of these type of regions have been widely analysed, inter alia, in the ESPON PROFECY Project (2017) and can be summarised in the figure below.

Such territories require specific strategic responses to overcome the effects of their territorial situation. The PROFECY projects highlights that *“to overcome fragmentation in action, ‘integrated’ strategies need to address the various components”* that are needed for regional development. The researchers of PROFECY consider also that *“it is crucial that this integrative perspective at the local/regional level not just focuses on the main drivers of peripheralization but extends to all relevant policy areas in order to address the inter-related effects of regional development. Moreover, action at local/ regional level has to be seconded by larger administrative levels to become effective.”* (ESPON 2017:15)

Figure 1: Consequences of Peripheralization



Source: ESPON 2017 – PROFECY HANDBOOK. p.13.

Strategies to promote innovation and development in such regions need to understand the trade-offs and the limitations of the territorial situation for different policy areas. Specific capacities need to be continuously developed to overcome the lock-in effect. Participation and partnerships need to be extended not only to specific policy areas but to all relevant policy fields. A shared vision for development and a strong integrated institutional framework are required to bundle resources and to look for support at larger administrative levels (ESPON 2017).

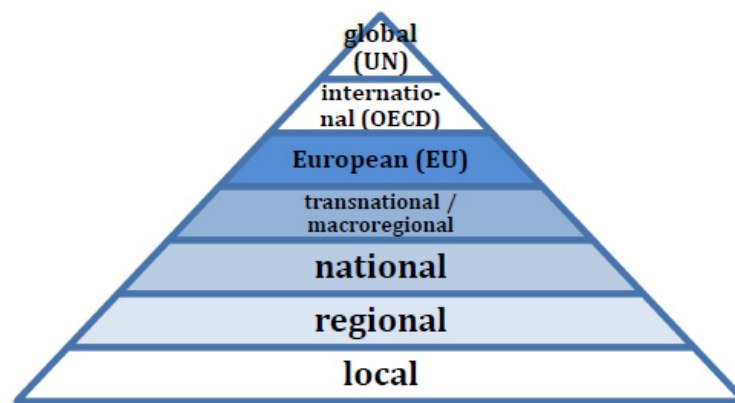
The INNOVACT project works with Latin American border regions. The first year of work with these regions has shown that these areas have particular characteristics that make them differ from metropolitan or growth regions in Latin America or from regions in Europe. The main conclusions can be summarised as follows:

- Strategies and projects to support development are not new to most Latin American regions, even the border regions. Most Latin American countries have had in the past or have currently territorial policies and pilot projects supported by the IADB, CEPAL, or UN organisations that helped to develop a certain knowledge on place-based policies. Therefore, new projects (e.g. funded with EU support) do not start from scratch but need to take into account any previous experiences, lessons learned and also other frameworks of action.
- Context conditions are rather different in Latin America compared to the EU. The development of Latin American border regions faces problems like migration, violent displacements, illicit crop production, and natural disasters, not to speak of the lacking common legal and currency harmonisation that most countries and regions in Europe enjoy due to the common currency and the EU legal and administrative framework. This changes the work of regional actors and requires more flexible and wider approaches to smart specialisation.
- Multi-level governance is the key to Smart Specialisation. However, most Latin American countries do not have many policies and programmes that actively take into account the regional and the local levels in analysis and decision-making. Hence, S3 approaches need to adapt to

the more dominant role of national stakeholders, but also try to build relevant capacities at the regional and local levels.

- Latin American peripheral and border regions have a very limited supply of professional and innovation services. In addition, the distance to the capital cities where most research and technology-based infrastructure and services are located, is an additional obstacle.
- The peripheral and border regions have a limited critical mass of people and institutions. Many of them are relevant in different areas of development or different value chains that can be complementary or organised in value nets (e.g. flavoured cocoa combined with adventure tourism). The concentration on one sector or value chain in these regions hampers the development of necessary administrative and institutional framework conditions that are needed for the development of integrated approaches and value nets.
- Latin American border regions, like many other parts of the world (not so much the EU), work predominantly within the overall framework of the Sustainable Development Goals (SDG) to guide and monitor their action. These means that not only research and innovation indicators are relevant for monitoring and evaluation, but mainly the SDG indicators. Overall, innovation governance in Latin American regions is much more guided by the global governance level, than by the European. In fact, multilevel governance for innovation is different in Latin America compared to the EU context. It is also getting much more complex (see figure 2).

Figure 2: Multi-level Governance model for Innovation



Source: Baltic TRAM (2017). Multi-Level Governance of Innovation and Smart Specialisation. Report by the Interreg BSR Project Baltic TRAM.

This analysis leads to the conclusion that the application of the S3 approach in Latin America requires modifying the original concept and methodology, developing more flexible instruments to adjust to the different context and to additional challenges in a non-EU context. Taking the territorial specificities into consideration it becomes evident that Smart Specialisation Strategies need to follow an even more territorial and locally embedded approach when being applied in peripheral and border regions.

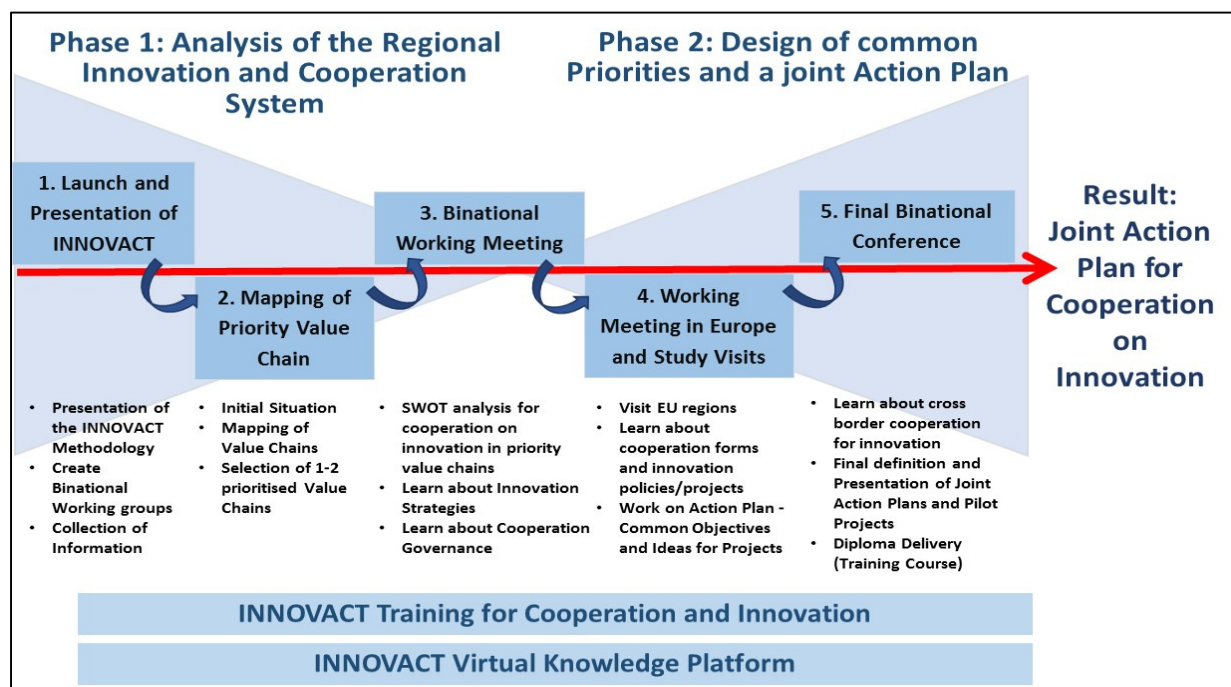
4. INNOVACT – promoting innovation in the cross-border context

The INNOVACT project has analysed the entrepreneurial ecosystem along different value chains (agro-food, cocoa, fisheries, energy, and tourism) in four different border areas: Peru-Chile, Colombia-Peru, Ecuador-Colombia and Mexico-Guatemala. Working Groups were created in each border area, considering existing structures and platforms for coordination.

One of the main challenges is the binational element in the work in peripheral regions. The similarity of socioeconomic and natural challenges, however, makes it easy to work with the local communities across borders. INNOVACT has been working with the Working Groups for several months (since September 2017) and is developing currently action plans that can be considered tentative and smaller

versions of smart specialisation strategies for two value chains in each border region. This work has created a wealth of information and lessons learned that will be structured by comparing the different experiences and feeding it into current dialogues about territorial approaches to smart specialisation.

Figure 3: INNOVACT Process Methodology



Source: Haarich (2016) in INNOVACT Internal working document.

The INNOVACT Methodology foresees a set of different activities:

- 1) Mapping of prioritised value chains (2 per border region) and relevant stakeholders
- 2) First binational Working Meetings – Validation of Value Chains and SWOT Analysis
- 3) Study Visit to Europe and Second Working Meetings
- 4) Development of An Action Plan per border region
- 5) Final Binational conferences – Presentation of Action Plans

On-going – Capacity Development and Training for LATAM stakeholders. INNOVACT Platform <http://www.innovactplatform.eu/>

After intensive fieldwork and in-depth desk research in the four Latin-American border areas, cross-border value chains were analysed during the first phase of INNOVACT in 2017. As a result, the INNOVACT experts, considering existing agreements, strategic plans and the opinion of relevant stakeholders recommended focusing on the following value chains:

- Smart Agriculture/related IT services (in Chile-Peru and in Mexico – Guatemala)
- Fine flavour cocoa (in Peru-Colombia and in Ecuador-Colombia)
- Tourism (in Chile-Peru and in Ecuador-Colombia)
- Fish farming (in Peru-Colombia)
- Energy (in Mexico – Guatemala)

Within the overall INNOVACT Methodology, the first binational working meetings had the main objective to generate a commitment amongst regional stakeholder to cross-border collaboration, strengthening

local capability and commitment to innovation-led growth. Initially, it was expected to have altogether 120 participants in the four meetings. However, the First Working Group Meetings of INNOVACT were extremely successful in terms of number of participants and managed to attract a wide variety of stakeholders for innovation and economic development in cross—border contexts. Overall, the four Working Meetings attracted 271 people. Of those, 28 attendees came from Chile, 56 from Peru, 58 from Colombia, 38 from Ecuador, 55 from México and 17 from Guatemala. In all events, representatives from the public authorities, from the private sector, of research and academia and NGOs assisted.

The Second Working Meeting was held for representatives of all four American border regions in June 2018. After a two-day workshop in Brussels, the LATAM delegates split into four smaller groups and visited four European border and innovative regions: 1) Slovenia (SI) and Friuli Venezia Giulia Autonomous Region (IT), 2) Central Denmark, 3) Aragón (ES) / Aquitaine (FR) & Midi-Pyrenees (FR), Galicia (ES) and Norte de Portugal (PT). The selection of participants per border area tried to reflect the diversity of the Quadruple Helix and the variety in value chains along the borders. The visits and the content of the programme focused on innovative governance methods in cross-border cooperation and on different topics of high interests for the delegation (formalisation of cross-border governance, product development, agriculture, tourism etc.). Based on the insights and takeaways from the visits and the discussions with key experts in the different value chains, the Action Plans will be finalised in the next weeks.

Work is still on-going, but it is already possible to show some examples of the work of INNOVACT and lessons that can be transferred to the Latin American context.

Practical Case 1: Local cooperation between Chile and Peru

The border between Chile and Peru consists of two sections, one terrestrial and one maritime. The first is a 169-km dividing line, which runs from west to east. The second has been completed with the ruling of the International Court of Justice (ICJ) in 2014. The border area between Chile and Peru stands out as a very arid zone, a meeting point between the Atacama Desert and the coastal desert of Peru and by having a low population density (14 inhabitants/km² in the Region of Arica and Parinacota and 18 inhabitants/km² in the Tacna Department). The most important border city on the Chilean side is Arica, with a population of 235,000 and on the Peruvian side is Tacna, with a population of 340,000. In recent years, the Peru-Chile bilateral relationship has acquired greater density and content, which has been reflected mainly in sustained growth in trade, which is expected to be reflected also at the regional level at the border.

The First Working Group event was held in Arica on the 18th October 2017. The level of assistance was very high and exceeded all expectations in terms of quality and quantity. During the event, the participants worked – divided in sub-groups – on the analysis of the current situation (SWOT) of the corresponding value chain they were interested in, as well as on the elaboration of a cross-border vision of the value chain for the next 10 years, defining already some necessary actions or milestones to get to the desired objectives. Two value chains were then selected to further be developed: Tourism and smart and sustainable agriculture.

1) Tourism: The Chile-Peru border region is strategically located within a macrozonal terrestrial tourist corridor, of great interest for foreign markets, which goes from Cuzco (Peru) to the Salar de Uyuni (Bolivia), having as an intermediate point the Desert of Atacama (Chile, with the city of San Pedro as anchor). One of the main opportunities for cross-border collaboration, in the short term, is to strengthen the area as a tourist point with enough attraction to stop being a mere point of passage for these international tourists and become an obligatory space for overnight stays and visits. One of the main barriers to the development of the area as a significant tourist attraction in the international context, corresponds to the little recognition among actors of both cities (Tacna and Arica) that the cross-border area as a whole can constitute a unified and more complete destination. Currently, the logic of differentiating one city from the other prevails and aims to serve different audiences, rather than integration. In spite of the aforementioned, the Sub Commission of Tourism Committee of Integration of

Border Development, has propitiated the first timid spaces of recognition between actors of the tourism of both sides of the border via the impulse of joint actions.

2) Agriculture: The first and perhaps the most important challenge, without a doubt, is to be able to strengthen the production of the agricultural value chain in conditions of water scarcity. Another challenge is to take advantage, on the part of businessmen from the south of Peru, of the high frequency of ships that arrive at the Port of Arica and the proximity that it has, with the points of origin of cargo in the Tacna Region, compared to the Port of Callao, Hilo and Matarani in Peru. On both sides of the border, technology companies have emerged with the mission of serving agriculture, a sector that, due to the particular water scarcity conditions that the area presents, requires technological developments to increase the profitability of crops through the correct use of water, climate control, etc. The special conditions of climate that the border zone presents, added to its ancestral agricultural vocation and to the proliferation of young technological companies in the territory that are challenged to attend to the value chain of agriculture, represent a tremendous opportunity for the development of the industry of technological services for agriculture in conditions of water scarcity. The study visit to Europe helped to focus on the following conclusions for the action plan to be developed: It is important to include the concept of circular economy applied to local development of the value chain and pursuing cooperativity between regional governments and municipalities to work with a common vision. The border region should generate opportunities to flourish good food ideas or agriculture like in an Agro Food Park with its business incubator that has good infrastructure and strong networks. After the trip to Europe and knowing the experiences of other regions, it was possible to understand that the main challenges are related to personal and institutions relations. The lack of social capital within regions first and at a binational level second, makes extremely complicated the development of joint projects, so, it is necessary to consider this in the upcoming action plan.

The action plan for Smart Agriculture might foresee a binational R & D Center for Smart and Sustainable Agriculture, as well as a binational market platform to stimulate local and national demand on quality products form the region. The action plan for the tourism value chain will propose to agree on the design of a binational adventure tourism product, and position this product in specific markets, as well as to strengthen specific capacities in all actors along the value chain.

During the VII Peru-Chile Border Integration and Development Committee, a bilateral meeting between the cities of Arica and Tacna, was held on 2nd August, 2018 and addressed various issues of development, coordination and strengthening of cross-border cooperation. The meeting was attended by more than 350 authorities, public officials and representatives of civil society from Arica and Tacna. The Economic Development Subcommittee of the Integration Committee agreed to support the INNOVACT action plans and proposed pilot projects.

Practical Case 2: Cooperation between Peru and Colombia

The Colombian-Peruvian border, with more than 1,600 km length, is in the Amazon, a geographic space with an ecosystem of tropical forests, a rich biodiversity and abundant natural resources. The Border Integration Zone (BIZ) covers more than 277,000 km². The Amazonas and Putumayo rivers, the most important within the complex water network that characterizes this region, besides being the boundaries of the two countries, constitute the most important way of penetration and permanent communication.

In addition, of these rivers depends the economic model of subsistence that predominates in this area. Its population, of more than 600,000 inhabitants, is almost entirely indigenous. This population is mostly in poverty and marginalization. Its isolation from the poles of development, limited accessibility, great distances and dispersion of the population have made it difficult for both the attention of the State and the access to markets and consumer goods that are not produced locally. Social services, such as health and education, as well as water, basic sanitation and energy have very low coverage.

The region still faces basic security challenges, especially on the Colombian side in the Putumayo basin, although with the peace process the conditions have improved. There are also challenges regarding social, economic and institutional development: the high levels of unsatisfied basic needs, which put the border population in a situation of extreme vulnerability; the isolation of border populations, given the

difficult geographical accessibility to markets and regional and national economic management centres; most cocoa producers and fish farmers are small producers. Moreover, there is a high fragmentation of the property and most of the production is done individually. In addition, there is a weak organization of producers, a situation that does not allow economies of scale to be exploited along the links of production, marketing and processing; and the lack or low supply of promotion, extension and technical assistance activities to improve productive processes in agriculture and pisciculture.

The Border Integration Zone (BIZ) created by the governments of Peru and Colombia offers favourable conditions for the development of cross-border collaboration activities within the framework of INNOVACT. The existence of a Development Plan for this area, an institutional framework for binational discussion and coordination, which includes a Development Fund, and a broad agenda of activities of mutual interest, including the topics addressed by INNOVACT, are notable opportunities for cross-border collaboration. Two value chains (special aroma cocoa and pisciculture) offer valuable opportunities to strengthen cross-border cooperation and prior efforts; require support programs for their development; and their development would have a positive impact on the diversification of local economies. In particular, the cocoa produced in these regions is the basis of gourmet chocolate. In total, this kind of cocoa accounts for just over 5% of world cocoa production, and is considered as a separate and highly specialized market, with its own characteristics of supply and demand. In the Amazon region, the production of cocoa is made under environmentally sustainable conditions, in tropical rainforest areas.

On the 2 and 3 of November 2017 the First Working Meeting was held in Leticia (Colombia). The planning, organization and realization of Leticia's event had the support of the Chancelleries of Colombia and Peru. A total of 59 people attended. During the event, the participants worked – divided in sub-groups – on the analysis of the current situation (SWOT) of the corresponding value chain they were interested in, as well as on the elaboration of a cross-border vision of the value chain for the next 10 years, defining already some necessary actions or milestones to get to the desired objectives. Valuable considerations to strengthen the Native Cacao value chain are: better infrastructure for transport, better access to markets with products and competitive prices, lack of research and validation of native cocoa, need for continuous programs of technology transfer and technical assistance, need to strengthen the producer organizations, need for better marketing and market research.

The Action Plan will be based on the existing Development Plan for the Border area and try to validate the objectives and action lines, supported by Pilot Projects. The following general objectives will be most likely proposed for the cocoa Value Chain:

- Strengthening bi-national cooperation to create cross-border economic areas
- Develop local and regional institutional capacities and for productive, organizational and administrative management
- Integrating into the global value chain.

Among the key actions to be proposed are:

- Promoting a binational governance scheme for the trade and promotion of cacao, to strengthen associative production and fairer sells, through participatory research and adequate financial services.
- More innovation and technological development for increased added value. Boost the existing storage and processing infrastructure throughout the BIZ to promote the collection of different qualities of cocoa and add value to the most appreciated fine aroma varieties.
- Improved and new commercialization processes, using direct trading schemes and technological innovation and ICT.
- Capacity building and training.

5. Lessons for a new generation of S3 territorial approaches

The work in the INNOVACT project with Latin American border regions has shown that the Smart Specialisation approach might be still useful in its original version in the case of metropolitan and growth regions for Latin America. Thus, the first distinctive feature of the smart specialisation approach that relates to the systemic logic of the innovation ecosystem and assumes that the potential evolutionary pathways of an innovation system depend on the inherited structures and existing dynamics (see McCann and Ortega-Argiles 2011), is valid also for the case of the peripheral regions.

However, the second feature refers to the players in the system and the mechanisms by which the system operates. In that sense, players are regarded as being the agents who use their knowledge-acquisition facilities and resources (human capital, ideas, academic and research collaborations) to scan the available local economic and market opportunities, to identify technological and market niches for exploitation, and thereby act as the catalysts for driving the emerging transformation of the economy (ibidem). This feature follows a different and more complex logic in the case of peripheral and border regions. The complexity increases as not only different layers of administrative levels are more relevant, but also other sectoral policy fields (e.g. transport, migration/customs/disease control) are considerably more important for further development of specific domains and value chains. In addition, the binational feature adds another level of governance and a whole new set of players on the other side of the border.

There are also three key aspects of the smart specialisation logic, namely, the entrepreneurial discovery process, the relevant size of the sector, and the level of connectedness. McCann and Ortega-Argiles already highlight (2011:9) that “*translating the aspatial sectoral smart specialisation concept to an explicitly spatial -regional context, and in particular a spatial-regional policy context, requires some very careful consideration*”. We can assume that applying these concepts in peripheral and border regions is more complicated and almost impossible, taking into account the specific challenges mentioned earlier, such as lack of knowledge supply in the region, limited critical mass and size of the economic sectors, geographical isolation and remoteness.

As mentioned before, place-based approaches to stimulate innovation and economic development in peripheral regions have to build considerably on the participation of all stakeholders (including the civil society), on cross-sectoral capacity development, on strategic integration, joint vision-building and cooperation across different administrative levels and with neighbouring regions to be able to overcome the effects of peripheralization (ESPON 2017). However, this is only marginally foreseen by the original smart specialisation approach.

Therefore, if the smart specialisation approach is to be proposed in the context of development of Latin American peripheral and border regions, it should be modified to become more adequate to the different framework conditions.

- The analysis of entrepreneurial agents and catalysts, the relationships between the generation, acquisition and transmission of knowledge and ideas at the geographical level, the regional systems of innovation, and the institutional and multi-level governance frameworks needs to be conscious about the specific complexity of border (and cross-border) regions, taking also into account the relevance of additional players, for example, the national level (e.g. Ministries, Research Centres), international organisations and/or the civil society.
- The notion of domain cannot be related only to academic, scientific or technological domain, but needs to be examined also from the perspective of climate conditions, natural wealth, traditions and history, different modes of production and organisation.
- The size of the sector and domains cannot be the only/most important aspect, because of the limitations in size and critical mass of peripheral regions. Instead, quality, distinctiveness and origin become important as aspects to determine the potential of sectors and domains. The links to global value chains need to be exploited in multiple and different ways.
- The aspect of connectedness needs to take into account possible connections to other regions and countries on the other side of the border. The analysis has to be aware on the complexities of living, working and making business just next to a border. This presents a lot of limitations,

but also offers new potentials, for example regarding the access of new markets or joint entrepreneurial discovery.

- The S3 approach has to take into account the long-standing experience in cross-border cooperation and governance that exists in Europe. Many European border regions have learned to overcome specific legal and administrative obstacles, and can therefore be a good example for Latin-American border regions. The experience can help to promote innovation in a cross-border context, learning from the multitude of existing formal and informal cross-border planning documents, strategies, cross-border services and joint use of infrastructures. Therefore, S3 and cross-border and interregional cooperation on innovation need to build a natural partnership.
- S3 strategies in Latin American regions cannot be guided through European Strategies, such as EU2020, as they follow other general objectives for development, such as the Sustainable Development Goals. Therefore it is important, to keep in mind the more complex multi-level governance for innovation that guides strategic action in regions outside Europe.
- Last but not least, the concept of innovation has to become mucho more open and holistic, than in traditional RIS and S3 approaches that focused mostly on technology, industrial sectors and product/process innovation. New lines of innovation have to become much more inclusive (e.g. addressing also producers of natural and food products, consumers, producers of waste, new social initiatives promoting sustainability). In particular, in Latin-American peripheral and border regions, innovation cannot be centred on industrial modernisation but need to focus on organisational and marketing-related innovation as well as on the development and production of niche and quality products, the valorisation of the natural environment, new forms of highly innovative and unique services. In these areas, also European regions still have to learn and develop¹, facilitating that learning between Europe and Latin America will be mutual.

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¹ See for example, the recent publication on smart specialisation and social innovation for innovation for a more sustainable society and renewable energy (Spiesberger et al. 2018).

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