

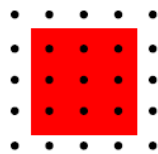
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# **EU-Latin America Cooperation on Regional Innovation Systems in the Framework of Regional Policy**

Directorate-General for Regional and Urban Policy  
Communication, information, relations with third countries

FINAL REPORT

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## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION AND OBJECTIVES .....</b>	<b>3</b>
1.1	BACKGROUND .....	3
1.2	OBJECTIVES OF THE COOPERATION PROJECT.....	3
<b>2</b>	<b>TASKS CARRIED OUT: OBJECTIVES, METHODOLOGY AND CONTENTS.....</b>	<b>6</b>
2.1	WORKSHOPS AND TRAINING IN LA .....	6
2.2	STUDY VISIT .....	9
2.3	TUTORING ACTIVITIES .....	11
2.4	FINAL WORKSHOP .....	19
<b>3</b>	<b>OUTCOMES AND LESSONS LEARNED.....</b>	<b>21</b>
3.1	OUTCOMES AS REGARDS IMPROVING PROGRAMMING APPROACH AND STRATEGY .....	21
3.2	OUTCOMES AS REGARDS THE DESIGN, IMPLEMENTATION AND MANAGEMENT OF CLUSTER POLICY ....	23
3.3	CONCLUSIONS AND LESSONS LEARNED.....	25
<b>4</b>	<b>ANNEX – .....</b>	<b>29</b>

# **1 Introduction and objectives**

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## **1.1 Background**

The EU-Latin America project on regional innovation systems was implemented in the framework of the European Parliament's support for putting EU regional policy into a stronger international context. The project aimed at supporting the effort of the European Union and the Latin America countries to reinforce their strategic partnership<sup>1</sup>.

During the project, the working team supplied technical assistance, training and expert advice related to specific development needs that emerged in Cordoba (Argentina) and Santa Catarina (Brazil). These Province and State authorities were closely involved in the project and provided technical and political support during its development.

The project addressed the field of institutional and governance cooperation with the aim of: strengthening the regional innovation strategy design, implementation and management; reinforcing implementation of support services for the inclusion of the SMEs and micro enterprises into the innovation system, with a specific focus on cluster support policies.

In the participating regions of Cordoba and St. Catarina and Emilia & Romagna and Baden Württemberg an explicit cooperation demand in these fields emerged during the various preparatory initiatives and official meetings. For this reason the project focus has been concrete and operational and involved a whole range of stakeholders in both EU and LA sides which operate in these fields, such as firms, public and private agencies, Universities and innovation centres. A new approach of cooperation, based on reciprocity of interest to reinforce business and trade links has been carried out. This approach implied a large and complete and strongly motivated participation of a group of leading regional officials and of firms beneficiary of the project in each activity of the project.

## **1.2 Objectives of the cooperation project**

The main objective of the project is to diffuse the EU regional policy experience and best practice and exchange experiences between regional institutions on regional innovation policy by supporting the implementation and management of new instruments and practices, with particular attention to clusters and SME innovation policies.

This objective was pursued by implementing a mix of connected activities aimed at supporting the selected officials and agencies responsible for innovation policy in Cordoba and St. Catarina:

- Workshops and training,
- Study visits
- Tutoring
- Concluding international workshop

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<sup>1</sup> E.g. Madrid Action Plan 2010-2012 (Council of the European Union, EU-LAC Summit "Towards a new stage in the bi-regional partnership: innovation and technology for sustainable development and social inclusion", Madrid, 18.5.2010); EU-LAC Knowledge Area and EU-LAC Joint Initiative for Research and Innovation.

The final workshop was held in Brazil in March 2013 to discuss the results of the project, the learning of the participants and set the basis for following cooperation initiatives.

The instruments and techniques which were transferred are related to the specific needs and interests of the targeted regions, with particular focus on the following objectives:

- To refine and strengthen the regional strategy, from foresight to monitoring and evaluation.
- To manage SME policies in clusters in the relevant regional sectors (e.g. agro-food, biotech).

The objectives of the project activities carried out (from the workshops to the study visits and the tutoring) are converging. They are:

- To improve the on-going regional strategies in relation to their establishment, governance, implementation methods, instruments and partnerships and support them with different techniques to increase the knowledge of the regional potential and of the future technological scenarios.
- To support the local officials, on the basis of the EU regional experience, to develop operational methods to improve and enlarge the effectiveness and scope of the regional policy on SME service provision and cluster policy.

The first objective consisted in drawing up of an inventory by the regions to know about the ongoing research and the innovation activities as well as their human and economic resource potential, assure a wider participation of the stakeholders and viable partnership procedures, reinforce the information system on the basis of foresights, rationalize the mission and the contribution of the various public and private bodies devoted to knowledge creation and education etc. Once the strategy has been defined, public authorities need to assure coordination and set a monitoring and evaluation plan. In pursuing this objective, the training and tutoring activities supported the regions in designing and setting up a new programming approach based on coordination and partnership (guidelines and template have been provided and discussed) starting from the successful experience of two European regions (Baden-Württemberg and Emilia-Romagna).

The second objective aimed at supporting the regions to enlarge their innovation base with an increasing number of SMEs. To do so, it was fundamental to increase the number of SMEs with access to innovation; within this policy target the organization and management of clusters is a very important instrument since it assures an aggregation to the SMEs working within a value chain, reinforcing their strength on the market to increase their competitive advantages collectively and in synergy in a specific territorial area. Successful experiences in cluster policy have been reported by the 2 EU regions involved, both, during the training and the study visits. With respect to this objective, the training, study visits and tutoring helped local officials implement this new instrument and organise a pilot local cluster in selected sectors. Three official new clusters have been set and others are being created. ( Wine, Cheese and dairy, Meat , )

The technical assistance sustained the local officials in the selection of the issues and methods most appropriate to their policy needs and verified how to adopt them as mainstream practice in their own institutional context. The set of activities on innovation strategy management aimed at showing examples of regional strategy setting and management. The activities on innovation services to SMEs focused on a set of services/clusters and value chains; relevant services carried out include short audit, support to ICT adoption, eco-innovation, personalized innovation agenda for the cluster etc.

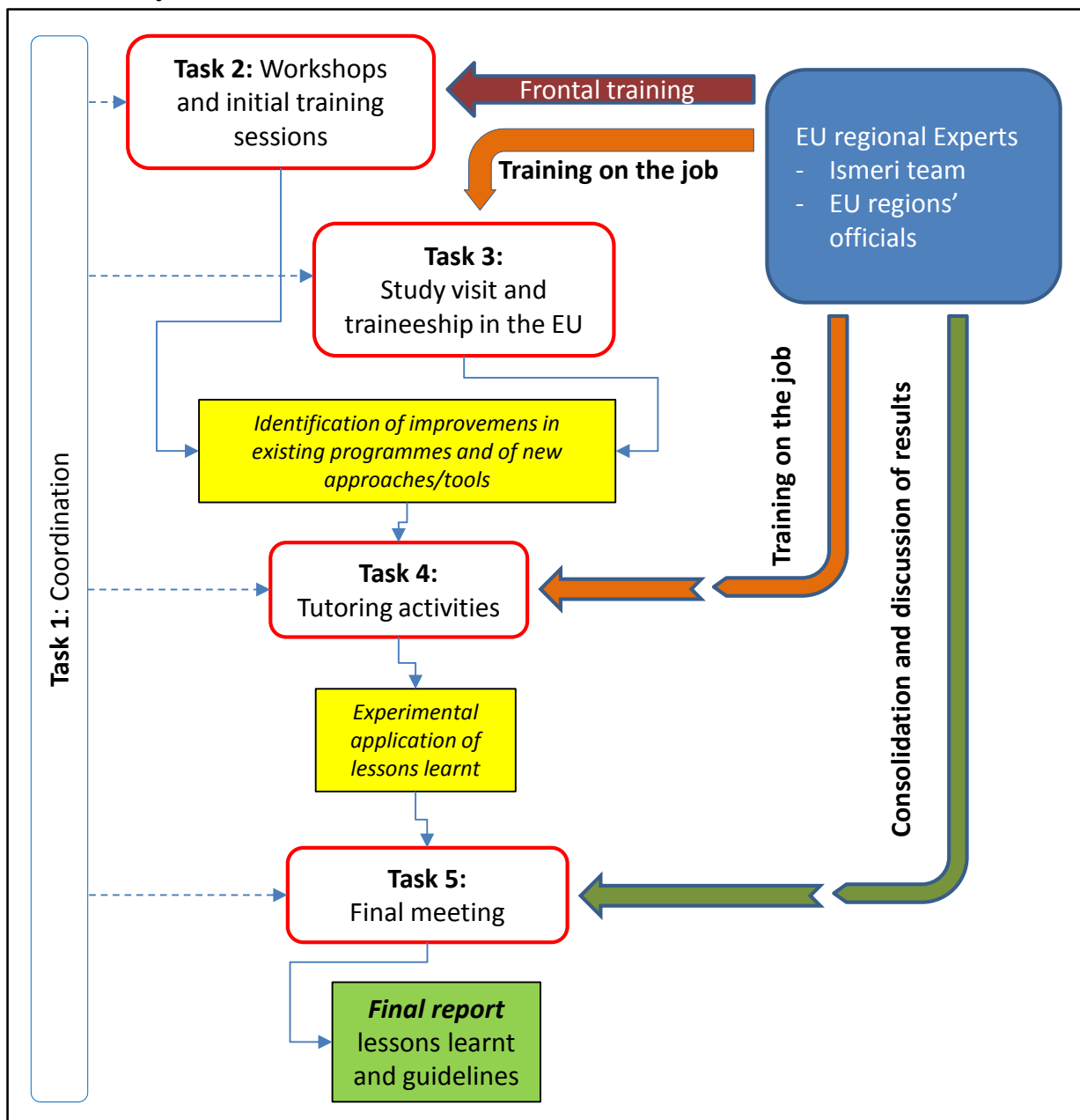
The tutoring helped to direct, reinforce and consolidate the results of the project activities and to put in practice the experiences of the successful participating EU regions, in short

operational documents which become a sort of guideline for future action of the institutions involved. They therefore:

- translate the exchange of experiences and best practice on SME services into current policies to be implemented by the local operating agencies;
- help the local institution to produce operational documents that can be incorporated by the regional system and applied by the local authorities;
- set the basis for an in depth interregional (EU-LA) cooperation in these fields, including firms and other innovation actors, and help reinforce triangular links between Cordoba and Santa Catarina and the EU regions.

These activities contributed to the capacity building of the young officials in these regions and, at the same time, reinforced the ground for future cooperation both at the institutional level as well as at the firm level in the clusters and value chain that were involved in the pilot actions.

**Exhibit 1 - Project scheme**



## **2 Tasks carried out: objectives, methodology and contents**

### **2.1 Workshops and training in LA**

The objective of this activity was to introduce and discuss the project objectives and contents with the regional stakeholders and subsequently to provide training sessions for 10-20 officials and experts on the themes that have been agreed on governance and SME service provision. Participants were mostly from the hosting regions.

A day workshop was organized during the first day of this activity in both regions. The objective was to present the project to the main stakeholders selected by the host region with the cooperation of the project team. The EU regions, on the basis of their experience and knowhow on the subjects introduced their innovation strategy and the activities to improve policy and instruments performance. This discussion aimed to share policy experiences to improve the knowledge of the existing needs, potentials and constraints, and ultimately to set a precise agenda for the project activities. During the same day the experience of the host region was described, needs and potential were highlighted to fine tune with the EU regions training activities and to find a consensus on the different steps of the project.

The training sections followed in weekly modules as specified below.

The project coordinator, has been responsible for all operational aspects of organising the workshops and following training sessions. This includes:

- preparation of the meetings with the local authorities and main stakeholders, defining the detailed program and chairing the workshops in cooperation with the local authority and the EU regions;
- setting dates and location (in agreement with the Commission);
- setting the schedule of each module.
- Introducing the workshop and the project activities

The coordination team, with the support of the local authorities, took care of the other practical arrangements (organisation of travels and subsistence of experts and trainers, workshop rooms, hotel and restaurant reservations).

**Training activities** were carried out as follows.

The training was divided into weekly modules and was carried out by 4/6 highly qualified technicians from the EU regions and from ISMERI EUROPA for the governance module.

The local authority selected the participants among its officials, local experts and technicians from local agencies and universities and firms etc. The selection was designed to choose those participants which will best apply the training contents. Each module had different participants given the specific focus of the subject. In the modules focusing on SMEs services, firms representatives have been involved.

**Training session on regional innovation strategy** design and management

The participants to this module are the local functionaries and experts from local agencies and research centres which are at different level involved into the decision making and the management of the strategy and of the instruments that each region has designed to carry out the strategy. This session lasted 4 days and has been carried out as follows.

**1<sup>st</sup> Day**

Registration, welcome and introduction, presentation of the project. Presentation of the current regional innovation strategy in the host region. Outline of the EU partner regions and of their innovation strategies. Discussion to identify the main learning objectives and guide/fine tune the following days of training.

**2<sup>nd</sup> Day**

This day of the training follows the presentation workshop and deals with regional strategy conception and management. Concrete examples of the EU programs supporting the regions to set their regional strategies have been described; concrete examples and regional and strategic typologies were analysed. Themes: how to set a regional mapping of resources for innovation (University research, firms research, other knowledge institutions etc., demand and supply of innovation, actors and partnership horizontal and vertical, multilevel governance; main instruments for enhancing innovation, clusters and poles. A second part of the session was dedicated to an analysis of the regional strategy of the host region, their experiences of management, their instruments and results achieved, their needs and potential; this discussion helped designing the and tailoring the activities.

**3<sup>rd</sup> Day**

The third day was dedicated to the analysis of the instruments to carry out the strategy, regional and when possible national. The EU instruments were described by the EU regions experts: clusters, poles, technology platforms, and technological districts. A second subject focused on RTD and University firms cooperation methods, SMEs' involvement in innovation etc. Practical and operational ways to generate changes into the actors to support their cooperation and networking.

**4<sup>th</sup> Day**

This day was focused on monitoring the policy and instruments output, results and outcomes in order to follow step by step the dynamic which has been generated by the intervention. The following themes were discussed: forms and techniques of monitoring, data base setting, quantification of project outputs and results, performance indicators etc. Benchmarking techniques. The second part of the day was dedicated to the discussion of the host regions in this area, their experiences and the room for improving.

**5<sup>th</sup> Day**

This focused on evaluation. Type of evaluations (programmes and projects), ex ante, ongoing and ex post. Different techniques for evaluating the innovation results. EU examples of evaluations. Techniques and methods to evaluate industrial research. An exercise to evaluate a local program\project was carried out, and evaluation questions and methodology were set. Local experiences on evaluation were discussed to see the improvement needs and the concrete steps forward.

## **Training session on SMEs services**

Subjects: agro-food, meat and dairy products. The training was carried out by a technician from CRPA, a EU specialized agency (Emilia-Romagna). The trainees were mostly micro and small firms in the sector, officials and agents dealing with SMEs services in this particular sector. Their professional profile is such that they have a sufficient background on the sector from the productive or marketing side, and that they are involved in their professional activities with this sector. The objective and the methods were designed to give practical and operational know how in order to put in practice the teaching content; partly this was done through an audit of a sample of firms. The second part of each day was devoted to discussions.

### **1<sup>st</sup> Day**

Plenary session dedicated to the presentation of the EU experience in this area and a focus on the EU participating regions. Emilia-Romagna is one of the EU leading regions in this sector and hosts some of the most important world centres for technological and marketing innovation, fairs like CIBUS and it is particularly specialized in manufacturing, machinery and packaging. The second part of the day was devoted to the host region potential to the needs of the sector and the objectives and desired results from the training.

### **2<sup>nd</sup> and 3<sup>rd</sup> Day**

After a fine tuning the training focused on the technical aspects of the value chain improvement from production processes to product differentiation to marketing and to the organization of production and marketing consortia. The themes to be covered were: analysis of the value chain and how to stretch the chain to increase the value added stemming from agriculture and animal farming. Aspects concerning technology, food security, critical size. The host region presented their specific problems and the profile of the firms to be visited in the second part of the training session. The EU technician utilized and explained an audit plan focusing on the issues to be covered in the next two days.

### **4<sup>th</sup> and 5<sup>th</sup> Day**

These two days were devoted to a section of training on the job. An audit of 1 to 3 firms in which the EU technician analysed the firms process and products with the help of the trainees and the presence of the company managers were carried out. At the end of each audit a briefing, summarizing the diagnosis of the firms and an agenda to be followed were discussed.

A second weekly session focused on another sector (Biotech and its application to agro-food). The structure of this week was similar in its objectives and methods to the previous session and involved a cluster of firms selected by the host regions, having particular needs which were tackled by the training content and by transferring the EU experience.

A further significant output of this training focused on concrete problems of specific firms is paving the way for further cooperation between the regions and between the institutions and agencies. The potential for cooperation as well as the transferred know has been consolidated during the study visit.



At the end of the each training session, the trainees wrote a brief report of the training content and on the practical experience which constitute a technical guideline for setting up a service line in the specific sector.

This formula based on 3 weeks training was repeated in the 2 regions; the subjects and the specific focus of the training were adapted each time.

## **2.2 Study visit**

The study visit and "traineeship" in Europe took place in October 2012. It lasted approximately 2 weeks and involved the officials responsible for project activities in Cordoba and Santa Catarina. These were selected in accordance with the local authorities for the relevance and responsibility in the LA regions. The same group of officials which have been trained were in charge of the application of the results.

In coherence with the needs and opportunities emerging from the training and its follow up, the study visits contributed to consolidate their know-how with a complementary experience on methods and tools that are applied in the EU regions, which can be transferred. Meetings with the EU regional officials responsible for the governance, clusters and micro/SME policies were organised and tailor made to the needs of the beneficiaries. They focused on the operational features of their instruments and techniques and how to apply them to a different social and economic context. Firms and research centres dealing with these problems were visited.

The lessons learnt during the study visit were applied during the tutoring activities.

A further outcome of the study visit consisted in the "cross-fertilization" effect which benefits both Latin American regions: officials from Santa Catarina have worked together with the staff of Cordoba bringing new perspectives to the discussions and contributing to collective learning and future cooperation.

The programme of the visits was tailor made to the composition and to the specific personal profiles and interests of the delegation.

### **Indicative programme of the study visits (list of activities carried out in the regions are attached):**

- Day 1 (am or pm, depending on arrival):
  - o arrival, check-in hotel
  - o introduction and program of the visit, actors and agencies involved. Discussion will follow.
  - o overviews: Baden-Württemberg, BW regional innovation system and key actors; relating it to Cordoba and Santa Catarina;
- Day 2:
  - o Presentations on the key subjects of the project: regional innovation strategies; SME support activities in the targeted value chains, good practice examples; visit of operational agencies and \or research centres involved in the regional strategy.
  - o Interregional cooperation potential on these subjects and the involvement of firms and research institutions.
  - o Feedback from participants on LA situation;

- Discussing EU-LA cooperation potential, first ideas on future cooperation options for the 4 project regions
- Day 3/4:
  - structured meetings with key actors (to be defined during the training phase by and with the participants): ministries, policy/administrative agencies, sector-innovation-support agencies, technology transfer centres, agencies focusing on specific innovation aspects (e.g. IPR, incubators), institutional solutions (e.g. at universities, Fraunhofer-Institutes, Innovations allianz-institutes, clusters)
  - end-of-day analyses with a view on project as a whole
- Day 5: Further visit of agencies or firms
  - overviews on key topics, presentations and visits so far
  - structured synthesis of visit, focus on what has been learned
  - conclusions for, and discussion of next project steps
  - outlining further cooperation and networking options beyond project

The study visits, which followed the training sessions, were a key feature to consolidate a reciprocal knowledge of needs and potential supply, with firms and agencies operating in the 2 clusters of interest for the Brazilian and Argentine partners. The Ministry of Science and Technology of the Province of Córdoba (MinCyT) and of the Foundation for Research and Innovation of the State of St. Catarina (FAPESC), as well as the regional or national agencies dealing with technology transfer to the agrofood sector participated in the study visits in Europe. The visits took place in the second half of October 2012 in Baden-Württemberg (Germany) and in Emilia-Romagna (Italy). The activities focused on the agro-food and biotechnology sectors, in particular biotech applied to agriculture and agro-food, ICT and energy.

In the agro-food clusters in the value chains of dairy products and of meat products, several firms were visited during the field work in Emilia & Romagna. This made it possible to establish a number of important business links, for instance with the "Cluster Quesero" and the "Cluster Porcino de Oncativo" in Cordoba, the food cooperatives in Concordia (BR) etc. (see also annex).

A similar active involvement has emerged in the second related value-chains for the Latin American partners such as biotech, ICT and energy. As regards these value chain the business linkages between Baden-Württemberg and Latin America organizations were mostly established with biotech research groups operating in frontier research on active principles and plants growing in L.A., with companies and agencies in Baden-Württemberg operating in the development of and support to Bio-tech clusters (see annex for a list of organisations involved and links established).

In bio-tech applied to agriculture, a strong potential for follow up initiatives has emerged since this value chain has a tremendous potential in the L.A. regions involved, but is still scarcely developed. A clear need, expressed by both EU and LA partners, has emerged to strengthen this cooperation approach and make it more systematic in order to develop these concrete business relations, and exchange of products and services. For instance, the Province of Cordoba has already envisaged a series of follow up activities of interest to the local stakeholders: promoting the development of linkages between LA companies and the agro-business and mechatronics sectors in Emilia Romagna, through the services of Reggio Emilia Innovazione; strengthening and formalizing the linkages between specific LA clusters (e.g. Cluster Quesero of Villa María, Córdoba) with industrial research laboratories and consortia (e.g. Parmigiano Reggiano Consortium); facilitating the

participation of Latin American agro-food SMEs in the European fairs (e.g. "R2B – Research to business" in Bologna; "Nutrire il pianeta, energia per la Vita" in Milan); promoting the inclusion and involvement of LA companies in the European Enterprise Network with the support of Baden-Württemberg institutions. At the same time a number of joint biotech research and development projects are under discussion to apply for funds available in the EU as well as in the RFA.

## 2.3 Tutoring activities

The tutoring activities aimed at consolidating the results of the training into outputs and concrete initiatives that can be implemented in the regions. The following paragraphs provide a description of:

- The overall tutoring approach and its goals.
- The technical assistance provided in relation to designing and setting up a coordinated programming method aiming at the definition of a systemic innovation strategy
- The support provided to help officials organise the local clusters in selected sectors.
- The actual operational stages of tutoring

The tutoring organised by the project team has been carried out as a technical assistance aiming at coaching and assisting FAPESC<sup>2</sup> and MinCyT<sup>3</sup> in:

- Designing and setting up a regional strategy planning based on coordination and partnership between the main stakeholders of the innovation system.
  - The tutoring has helped the institutions in charge of managing and implementing policy to: carry out an "inventory" of the system components and identify the main stakeholders, their actual/potential contribution, their competences and human resources available; involve them in the process of defining priorities and a shared agenda, whose achievements will be monitored and evaluated jointly.
  - The strategic and policy features of the strategy have been designed and refined with the guidance and coordination of the cooperation project.
  - The content of the strategy were the result of adapting to the local needs the examples and the successful experiences of the EU regions. Their past and present experiences of carrying out these policies were carefully analyzed and discussed.
- Supporting the local LA institutions to organise the clusters of SMEs operating in the agro-food (dairy and pork meat) and biotechnology sectors in Cordoba and St. Catarina (Chapecò).
  - The tutoring helped to involve local officials and cluster stakeholders in synergic activities in order to improve together the organisational setting of the clusters and increase their market competitiveness.
  - This support policy approach, experimented on two clusters, was then widely adopted by Cordoba and St. Catarina in their territories.

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<sup>2</sup> Fundação de Amparo à Pesquisa e Inovação do Estado de Santa Catarina (BR).

<sup>3</sup> Ministerio de Ciencia, Tecnología e Innovación Productiva (AR).

### **Designing and setting up a new programming approach based on coordination and partnership**

The State of St. Catarina and the Province of Cordoba are both characterised by multi-level governance in regional innovation policy. These policy making levels interact with, and respond to the needs of several categories of stakeholders: private firms (industry with their private labs, associations of firms, financial institutions), public and private universities and research centres, knowledge and technology intermediaries which facilitate demand-supply matching.

In **Cordoba**, the MinCyT Argentina coexists with the MinCyT Cordoba. Both government institutions apply the S&T policy at national and provincial level, respectively.

The MinCyT AR was created recently (2007) and includes two Secretariats: a) the "Secretaria de Planeamiento de Politicas" which is in charge of defining policy strategy and policy actions; b) the "Secretaria de Articulacion Cientifico Tecnologica" which is in charge of facilitating the links between the production of "science and technology" and the productive sector. Some decentralised institutions depend on the MinCyT Argentina, such as the "Agencia Nacional de Promoción Científico Tecnológica" which manages some important programmes: FONTAR<sup>4</sup>; FONCYT<sup>5</sup>; FONSOFT<sup>6</sup>; FONARSEC<sup>7</sup>. The technology policy applied is, basically, a "horizontal" one: it tends to favour firms (or groups of them) without differentiating the productive sector that they come from. Although it has not yet defined a clear and precise technology strategy for the country, this issue is considered a priority in its agenda for the near future. The MinCyT ARs

The MinCyT Cordoba was created in 2007. It is organised in two main areas: the "Secretaria de Vinculacion Tecnologica" and the "Secretaria de Promocion Cientifica". The MinCyT Cordoba tries to work in coordination with the MinCyT Argentina and manages some of the programmes that the latter offers to the productive sector such as FONTAR and FONSOFT and some other COFECYT programmes. Besides, it offers specific provincial programmes to support: a) innovation in the productive sector and b) S&T and research<sup>8</sup>. Although MinCyT Cordoba has not been able to define a precise strategy for S&T in the province yet, this has been considered its priority task since its creation.

The most important centres that carry out S&T research and development in Cordoba are: Secretaria De Ciencia Y Tecnologia De La Universidad Nacional De Cordoba (SeCyT, UNC); Escuela de Acuerdos para el Desarrollo y La Transferencia de Tecnologia, Universidad Tecnologica Nacional- Facultad Regional Cordoba (ESADET, UTN CORDOBA); Instituto Nacional de Tecnologia Industrial (INTI, Delegacion CORDOBA) which offers

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<sup>4</sup> Fondo Tecnológico Argentino which subsidizes private firms for technological innovation, through non-refundable loans and tax benefits.

<sup>5</sup> Fondo para la Investigacion Cientifica y Tecnologica. This fund gives support to basic scientific research as well as to applied S&T research.

<sup>6</sup> Fondo Nacional del Software; which gives grants for "software industry" firms

<sup>7</sup> Fondo Argentino Sectorial, that contributes to the funding of projects that tend to favour social, economic and cultural conditions in the country.

<sup>8</sup> The most important programmes are: FONTEC (Fondo Tecnológico Cordoba); which consists of non-reimbursable funds given to private firms. This programme complements FONTAR, as it is primarily oriented to micro and small firms that were not included in that national programme; PRODIS (Programa Cordoba Disena). This programme has been recently launched in order to promote and support the adoption of all type of "design disciplines" in the productive and commercial processes of small and micro firms; FONBIO (Fondo Biotecnológico Cordoba). This fund aims at "contributing to social and productive development with ecological sustainability and social equity"; CORDOBENSIS. It is a programme that supports the "Scientific Diffusion for Science Teaching".

human resource training and laboratory tests and calibrations; Centro de Excelencia de Productos y Procesos de Cordoba (CEPROCOR) which offers laboratory services to firms.

To cope with the lack of interaction between the supply and demand of S&T, over 20 "Unidades de Vinculacion Tecnologica" (UVTs) have been created in the province. These are regulated by a national law. Moreover, some S&T suppliers have set up their own UVTs. Although some of the UVTs actually play an effective role in matching supply and demand of innovation, many of them are "quasi empty institutions". Other centres that have the function of promoting a better matching between the supply and demand of local innovation include: the "Agencia para el Desarrollo Economico de la Ciudad de Cordoba" (ADEC); the "Unidad de Vinculacion Tecnologica" (UVITEC) created in 2008 by three important local firms' associations; FIDEIAR (Fundacion para la Investigacion y Desarrollo Industrial Argentino) founded in 2008 by the most important association of metal-mechanical firms.

In **St. Catarina**, federal and state policy makers coexist. The federal science, technology and innovation strategy is carried out by Finep, an operational body of the Federal State. On the other hand, the State of St. Catarina has set up a complex structure of intermediate institutions in coherence with the parallel set of federal bodies. The head of the State system is the Secretaria of the Government which acts as a political authority and regulator of the system. It carries out its own policies which are discussed actively within a large deliberative Council ("Conciti") that includes a representation of all the actors of the system. This Council, in which negotiations are carried out and decisions are taken, is also the authority which defines strategies and specific objectives of the policy. The Secretaria's operational body, Fapesc corresponds to the federal Finep. It prepares and executes policy decisions taken by the Council. Apart from the general guidelines and priorities of the St. Catarina constitutional law and the coordination within Conciti, each institution supporting innovation in specific sectors or technological field, or bridging firms with knowledge institutions, is free to define its own strategy to satisfy the needs of the sectors that it monitors, nor are there any systematic or formal activities to coordinate this aspect and exchange experiences and data.

In St. Catarina there is a large and qualified number of institutions that produce research and knowledge and operate in higher education and training. The system of higher education and research is made up of two main public universities (Federal UFSC and State UDESC) and several private universities that have opened recently at the initiative of the regional and municipal authorities: Unesc, Unidavi, Uniplac, Unochapeco etc. The universities are supported by a pervasive system of training and apprenticeship institutions, organized around Senai<sup>9</sup> and Acafe<sup>10</sup>.

There are several types of organisations which deal with knowledge transfer and technology diffusions. These differ in their legal structure and operating methods. The first group of institutions includes Epagri<sup>11</sup>, Senai and the Sebrae<sup>12</sup> which focus on micro and SMEs and the industrial districts. They are widespread in the territory of the State (33 centres for apprenticeship and training of the Senai, 40 centres of the Epagri system, 9 Sebrae centres). The system of intervention to sustain Agriculture and live-stock productions including fisheries is particularly pervasive. Epagri operates in partnership with the producers' associations and the municipios to assist groups of producers. Their main activity is technical assistance that is free of charge whereas research is paid for by the

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<sup>9</sup> Federation of Industry providing training to firms in manufacturing.

<sup>10</sup> Association of private education institutions.

<sup>11</sup> State organization dealing with research, training and technical consultancy to agriculture and live stock production including fishery

<sup>12</sup> Technical assistance to micro and SME.

large companies. Their main source of funding relies on the state budget with royalties and private contracts and on selling products also to the foreign markets. The Sebrae, an institution of the Fiesc (federation of industrial entrepreneurs) system, is another relevant supplier of innovation to micro and SMEs; it operates in each State through a branch with financial and strategic autonomy. There are 9 centres located in the region. The Sebrae system focuses on the need of the micro and SMEs, mostly projects of incremental innovation, training and technical assistance to entrepreneurs on management and organizational issues as well as on technical matters; the system is unanimously considered highly efficient and reliable by the firms and most of the actors. The second group of institutions dealing with technology transfer includes organisations of a different legal nature, as well as different mission and operating methods (IEL<sup>13</sup>, SESI<sup>14</sup>, Acate<sup>15</sup>, Foundation Stais<sup>16</sup> and Certi<sup>17</sup>, technological parks, incubators). These focus more on high tech innovations and tend to work for technological based firms rather than with SMEs in traditional sectors.

The main Cordoba needs in the field of innovation which have emerged since the outset of the project and were confirmed by the "inventory" of the actors of the system consist of improving the coordination of Provincial and national government levels which manage the main innovation agencies and funds. Improved coordination hinges on two main interconnected conditions: a well-designed innovation plan, based on the awareness of the local potential and shared with the main local actors, universities, large firms and SMEs and a strong partnership method

Similarly, in St. Catarina, the problems that need tackling are: the abundance of public and private initiatives carried out by different actors which creates a need for coordination and partnership, agreeing on a strategy well focused on a few clear objectives. clarifying the scope and the objectives of each on-going initiative and its contribution to the strategy, avoiding overlapping activities and dispersion of resources. At the same time the large service institutions Senai and Sebrae are scarcely coordinated by the State of St. Catarina, as they are the decentralized offices of a national agency. Their actions need to be fine tuned with the State strategy and contribute to it.

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<sup>13</sup> IEL (Istituto Euvaldo Lodi) is part of the Federation of Industry system, and undertakes transfer activities in all industrial sectors. IEL's task is to interface firms with university and research, and do some consultancy activities through cooperative projects funded with financial resources from public sources or from the Fiesc system.

<sup>14</sup> SESI SC is part of the Fiesc system, with service points throughout the whole State and in other regions of the country. It provides 40 types of services in the area of healthcare, leisure, education, pharmaceuticals and nutrition to approximately 2000 workers each day. The SESI/SC consulting department also helps companies to develop social responsibility programs.

<sup>15</sup> System ACATE is an association of 250 mainly ICT firms doing consultancy and training all over the State. They network with Sebrae and participate in the Papesc management council. Acate operates in the ICT area, a sector in which S.C. has made a tremendous effort, especially in Florianopolis, in terms of research and creation of firms.

<sup>16</sup> Foundation Stais is a private non-profit institution working in ICT and software production.

<sup>17</sup> Foundation Certi, (Centro de referencia de tecnologia inovadora) created in 1984 - private non-profit; the Foundation includes the Federal and the State government as well as the two main Universities of S.C. and other public institutions and large firms like Chrysler and Mercedes which were among the founders. Certi employs 250 people, of which 120 researchers who are spread over the whole country. It has tech parks and spin off participation shares and its actions are useful in bridging the excellence research of the university with the firms that have high tech potential. By request of the State and Federal government Certi was behind the creation of two technological parks, the Sapiens Park and the one where Celta is located.

In conclusion, the “inventory” of the principal actors of the system, of their roles and interactions, has highlighted the main weaknesses caused by the current fragmentation:

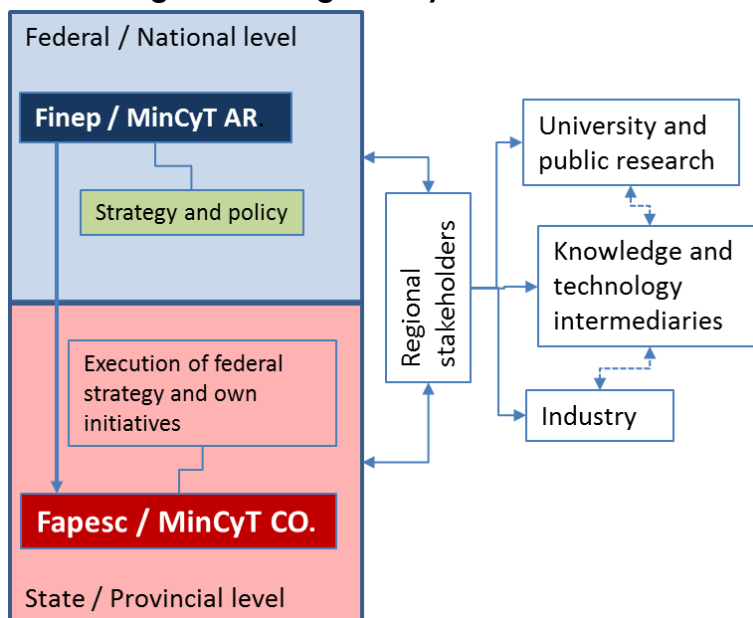
- scarce coordination between different levels with possible overlapping and duplication of efforts as well as negative impact on sense of ownership and policy accountability.
- poor interaction between demand and supply as well as between the private and public spheres of the system (e.g. universities vs. UVTs in Cordoba and incubators and parks in St. Catarina).

The new programming method that the project is helping to shape through its activities and during tutoring, and which the local authorities intend to mainstream, is a systemic and integrated approach.

In the new approach all stakeholders work together at the definition of a joint strategy and contribute to its development, therefore increasing effectiveness, ownership and sustainability of policy.

The main outputs of the pilot application of this approach are concisely discussed in chapter 3 of this report.

### From a fragmented regional system...



***...towards an integrated approach to innovation strategy and policy***



**Supporting the local institutions to formally organise the clusters of SMEs**

As regards services for micro enterprises and SME inclusion in the innovation system, the technical assistance that was developed took into account the conclusions of the 2010 study carried out by Ismeri Europa for DG Regio:

- Several organisations have been set up in the L.A. regions to address the problem of micro and small firms lack of innovation. Some of them work effectively and reached significant results that, nonetheless, fall short of the needs (e.g. SEBRAE, EPAGRI in Santa Catarina; Agencia Nacional de Promoción Científico Tecnológica, Instituto nacional de tecnología industrial in Cordoba)<sup>18</sup> and their coordination has become problematic.
- The organisations that support innovation in micro-enterprises and SMEs more directly provide apprenticeship, training and financial services. There is a growing need to focus more on the innovation needs of SMEs and traditional sectors, for instance in manufacturing and agriculture,
- There is a need to improve the mapping of the main needs and interests of the RDI stakeholders in order to design policy choices and to introduce more “vertical” or sector specific initiatives. Key vertical areas are for example: product and process design in the metal-mechanic industry; furniture industry and others; agricultural production and food industry; ICT sector; aeronautical industry.
- In both regions a vast but scarcely efficient agricultural sector, employing a significant part of the workforce directly or indirectly, tends to be an obstacle to innovation in the related manufacturing sectors. The effort of the local institutions is, therefore, one of developing a set of agro-food sector innovation policies to the benefit of a long value chain and of a large group of agricultural and manufacturing SMEs and at the same time enhance the consolidation of new and

<sup>18</sup> They are able to provide a range of services that goes from on-demand technology services and process/product quality, to technology development, laboratory testing, technical assistance in project preparation, training in technology management, surveying technology demand and supply. There are also other organisations which are still considered “empty” institutions (e.g. most of the recently created Argentinian Unidades de Vinculación Tecnológica – UVTs).



more dynamic science and technology based productions in the biotech sphere applied to agriculture.

In close collaboration with the local authorities and the EU regions, and in agreement with the Commission, the team has identified the typologies of innovative services which will be able to ensure a step forward in the performance of the system from the point of view of SME inclusion.

The activities of the project focused on services to SMEs, with the involvement of firms, in two sectors and within them on a limited number specific value chains.

After a triangular consultation the identified clusters were: agro-food industry and biotech. Within agro-food, the focus was on the value chains of meat and dairy products. Both regions have a flourishing agriculture and animal stock production which need to undergo a rapid process of innovation with the purpose of assuring food-security, the critical size of the small firms, the quality standards etc. in order to export outside the region and the country.

In both regions, the biotechnology sector plays an important role. There is a critical mass of companies that use and develop biotechnology in agriculture, the food industry, animal health and human health. Moreover, there is a solid base of scientific competences in the field. However, a detailed map of the biotech sector's scientific and productive capacity is still lacking.

In supporting the local institutions to formally organise the clusters of SMEs, an important input has been provided by the EU project partners and their related organisations (e.g. ERVET and ASTER in EMILIA ROMAGNA, Steinbeis in Baden-Württemberg). The Enterprise Europe Network (EEN) of the European Commission was also an important source of good practices and tools<sup>19</sup>.

### **Main operational stages of tutoring and template for preparing strategic guidelines**

Operationally, the tutoring activities were undertaken by means of both formal events and continuous remote interactions between the technical assistance team and the Latin American officials.

- Formal events consisted of ad hoc meetings organised and carried out during the workshop programme in the regions and during the study visits in Europe.
- These events involved representatives of the most important actors of the system, including government officials, firms and their associations, knowledge institutions etc. in order to experiment the shared approach to programming and policy design proposed and discussed in the training.
- The remote interaction between the projects team and the local officials aimed at guiding and supporting the latter towards a mainstreaming of the best practices learned during the stages of the project.

The participants in the training, study visits and tutoring are encouraged to apply the lessons learned during the project, in view of a wider application of the programming approach presented, discussed and tested in the various phases of the project.

The production of an operational document adapting the lesson learned to set a road map to improve the regional strategy. This document includes the main guidelines which are meant to transpose the project activities into operational documents to enrich strategic management and SME service provision in the region.

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<sup>19</sup> The Enterprise Europe Network brings together business support organisations from 49 countries and provides advice in several key areas.

A tentative template of the guidelines, to be adapted to the specific needs of the regions and to be followed partially or entirely, was presented and discussed during the tutoring meetings and then applied in the subsequent stages. This is summarised below:

1. Introduction and objectives
  - a. Background of the supporting cooperation project
  - b. Introduction to the guidelines
    - i. Objectives of the regional innovation strategy, in relation to the needs of Cordoba/St. Catarina.
    - ii. Main context issues (regional competitiveness, actors, policy governance etc.) which should be taken into account when applying the guidelines in the region
    - iii. Scope and objectives for their application. Opportunities and problems.
    - iv. A short note on follow-up actions.
2. Main components of the Innovation Strategy: operational steps
  - a. Analysis of strategic positioning
    - i. What is the position of the region, relative competitiveness, comparative advantages and specialization.
    - ii. Lessons learned during the training, study visits and tutoring; what aspect, method, procedure etc. can be used to improve the strategy in the case of Cordoba. How can this be done, conditions and time scale etc.
    - iii. How to build up background information to improve the analysis of strategic positioning (mapping of demand and supply of research and innovation, actors, networking etc.)
  - b. Priority setting
    - i. What are the priorities of the strategy? Are they clear and well motivated? (employment, competitiveness, sector or value chain etc.)
    - ii. Lessons learned during the training, study visits and tutoring and what can be applied and how to the Province case.
    - iii. Recommendations on the priority setting process, space of manoeuvre to improve current practice.
  - c. Instruments of intervention and selection of projects
    - i. The present set of instruments and selection practice, Scope for improvements (goals, methods and tools...)
    - ii. Lessons learned during the training, study visits and tutoring (examples on how these activities are carried out in the EU). What can be improved in the current practice, why and how can these improvement be implemented.
    - iii. Recommendations on how to apply the lessons in your region.
  - d. Monitoring and evaluation
    - i. The present situation and the scope for improvements, main objectives (goals, methods and tools...)
    - ii. Lessons learned during the training, study visits and tutoring (examples on how these activities are carried out in the EU)

- iii. How to change monitoring practice to follow the innovation system closely as a result of public interventions and private investments. What to monitor more closely and why.
  - iv. Current Evaluation system and envisaged changes. What should be more closely evaluated and why: Main evaluation demands
  - v. Recommendations on how to implement improvements in monitoring and evaluation.
3. SME cluster policy
    - a. The present situation and improvement objectives
    - b. Lessons learned during the project
    - c. Pilot actions undertaken and future developments
  4. References and annex (material provided and collected during the project)

## **2.4 Final workshop**

An international workshop, which was the final phase of the project was held in Chapeco from the 5<sup>th</sup> to the 8<sup>th</sup> of March. The organization of the workshop started in October, after the training session held in Florianopolis which was followed by a set of meetings of the technical assistance (Ismeri) with the authorities of the Estado and the Fapesc. During these meetings the main contents and the specific objectives of the workshop were established.

The workshop was organized by Fapesc (Agency for innovation of S.ta Catarina) and the Estado of S.ta Catarina in Chapeco since the main productions on agro-food of the Estado are located in this province and the training sessions of the project were also located here. A second reason of such a choice was that the Estado of Sta Caterina wanted to promote the participation of several local institutions: administrative, universities, other education institutions, etc., in order to illustrate the kind of political devolution and operational decentralization of education that has been established in the Estado. This location allowed widespread participation during the 3 days of work and in which the local actors could benefit from the project activities and in particular permitted the local agro-food companies to participate in the discussions as well as in the B2B session which took place on the last day.

The international workshop pursued 2 distinct objectives in line with the project action plan and the operational approach given to the activities. On the one hand it revised the main achievements of the work carried out and drew a final balance of the project activities with the main beneficiaries and with a wide local and international audience and on the other hand considered how the adopted method of work could be further developed in the years to come in view of the successful results that had emerged during the whole period. The EU delegation was invited to give her contribution to enhance the EU-LA exchange in the area of innovation.

Beyond the large and qualified national and local participation and of the EU regional partners, 3 international delegations considerably enriched the discussion: the EU delegation, the Cordoba Province delegation from Argentina and the Medellin delegation from Colombia. They joined the delegations of the partner regions from the EU.

The EU delegation in Brazil Dr. Piero. Venturi has opened the workshop and has described the EU policy in the area of innovation as well as the cooperation program that is being discussed with the Brazilian government in the area of innovation.

The debate among the regions focused on the specific regional strategies of innovation and how the institutions and policies have been shaped to carry them out and how the project lessons are being adopted in Cordoba and S.ta Catarina.

The national institution of Brazil and the Cordoba delegation responsible of innovation policies described their strategies, how they are being reshaped following the present cooperation project and the results that have already being obtained in the sphere of the clusters and SME policy.

The workshop debate concentrated on 2 main issues: how to make a successful strategy and set up a system in which the innovation activity of the actors can be coordinated and guided to go in the same direction. The second issue was to allow firms to express their strategies and concerns in relation to the regional system.

### **3 Outcomes and lessons learned**

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Both the training sessions and then the tutoring activities, aiming at facilitating the experimentation and application of the lessons learned, focused on the themes of: regional innovation strategy design and implementation and innovation services for SMEs in selected value chains. The results of the activities will go beyond the timing of the present project since they require long and ambitious processes of analysis and of partnership and political mediation which the institution involved are carrying out. The exercise however has already enforced principles, methods and procedures which were successfully experienced in EU by the participating regions and which need to be adapted, sometime with significant modification to the 2 regions of Cordoba and St. Catarina.

#### **3.1 Outcomes as regards improving programming approach and strategy**

The European Commission has been involved in supporting regional innovation strategies in the European regions since the 1990s. The regions Emilia-Romagna and Baden-Württemberg have a long and successful experience in developing a regional innovation strategy.

The training sections have been designed and carried out to transfer this operational experience through a variety of training methods including practical exercises and job simulations, with active participation of the trainees.

A draft scheme of regional strategy has been prepared and is currently being refined/adjusted following the work carried out by the regional team, based on what has been learned and especially on the partnership method that is currently put into practice.

The draft strategy document prepared by the Cordoba officials on the basis of the guidelines presented in the previous paragraph is attached to this report. It highlights the procedures for assuring a broad public-private participation in which the stakeholders, working together, provide the groundwork for the transition to a knowledge-based economy

The Cordoba draft strategy is structured around four main objectives:

- Strengthening the institutional framework of Regional Science Technology and Innovation, and developing and supporting initiatives for its consolidation.
- Developing new RTDI programmes and adapting existing ones in order to improve the quality and position of the products, goods and services created in the provincial economy.
- Strengthening human capital in science and technology, necessary to enhance the capacity to generate knowledge and innovation, which already exist in the area.
- Fostering outreach and social appropriation of science, technology and innovation, in order to contribute to social cohesion.

The draft strategic documents sets the basis for: an analysis of competitive positioning of the region and its productive sectors; priority setting; identification of policy instruments; design of monitoring and evaluation.

**Analysis of competitive positioning.** The formulation of the regional innovation strategy must be supported by a set of management processes that guide choices and allow to use resources efficiently. The draft document identifies the main issues to be considered in the analysis of regional positioning, the most important sources of information to be used in a systematic analysis of regional strengths and weaknesses, and the most appropriate analytical methods to be applied. The document also introduces the main requirements in relation to the team which should be responsible for developing and updating the reports of competitive positioning in the province.

**Priority setting.** A long-term vision is necessary to define priority areas to prevent the dispersion of efforts and resources. The document discusses the issues that should be considered in this phase: most relevant sectors and technologies on the basis of impact on employment, export potential, value addition, growth potential etc.; a model of participation of representatives of the productive sectors as well as of scientific and technological actors; a model of participation of the various levels of government.

The methodology for setting priorities includes the following phases:

- Selection of representatives from industry, commerce, academia, science, technology and the public sector in order to set up an Executive Committee responsible for the overall management of the process.
- Establishment of Sectoral Committees and definition of a methodology for participation and consensus, with specification of concrete actions, responsibilities and deadlines.
- Analysis of regional competitive advantages.
- Prospective analysis, indicating the goals to be set in relation to new scientific and technological developments.
- Building social, scientific and technological scenarios, indicating expected changes in industrial activity, knowledge diffusion, quality of life etc.
- Definition of priorities.
- Testing priorities and critical Review.

**Policy instruments.** Innovation policy is intended to strengthen and develop regional RTDI capacities, promoting integration and helping to overcome the main market failures and obstacles to the competitiveness of the system. The most appropriate innovation policy instruments (research infrastructure, services and technology centers, networks and clusters, venture capital and business angels, transfer and cooperation structures, incentive programs for R&D etc.) will be identified on the basis of the priorities established from the previous steps. Examples of proposed actions to be included in the MINCYT programmes:

- Support schemes for the local industry to foster innovation projects which involve technology acquisition, reengineering of products, processes and services, market research, marketing initiatives, outsourcing etc.
- Initiatives for human resources: development of technical, technological and scientific competences in those areas that are prioritized by the plan.
- Creation of parks and technological centers, tax assistance etc. to strengthen the actors of the system.
- Developing female entrepreneurship by supporting the creation of specific business networks.
- Promotion of clustering, integration of production chains, trade associations, etc.

- Promotion of regional cooperation through exchange of experiences, productive initiatives, training, etc.

**Monitoring and evaluation.** The systematic monitoring of information on programme implementation allows a timely assessment of the outcomes and impacts of the instruments and tools, enabling their adaptation and adjustment during implementation. The draft document discusses the most important criteria for organizing monitoring in the region and choosing a methodological mix for evaluation. It highlights the importance of tailoring the evaluation strategies and choices to the specific objectives of the interventions. The document also includes a first set of impact indicators for monitoring the regional innovation strategy.

### **3.2 Outcomes as regards the design, implementation and management of cluster policy**

The activities carried out encouraged a discussion led by European experts of the main features and needs of selected priority sectors, in order to support the LA officials in qualifying the strategy and identify initiatives to boost inclusion of SMEs in the innovation system. In both regions, these meetings focused on agro-food and biotech. The EU experts on agro-food were from CRPA Lab, and the expert on Biotech from Steinbeis. In the following paragraphs we discuss the main findings as regards agro-food and biotech in the province of Cordoba.

**Agrofood.** The most important strengths and weaknesses of the dairy, pork meat and biotech clusters in Cordoba are summarised below. As a result of the meetings and the following study visits, the most appropriate initiatives to include in the strategy were identified.

Main findings concerning the dairy cluster (mainly small firms and cooperatives located in Villa Maria area):

- The examined cluster made significant progress in relation to strengthening the partnerships between all value chain components and their links with RTD centres.
- The local companies with the assistance of the institutes have developed original well characterized and high quality products.
- The milk microbial content is still considered a critical production/technical issue; it requires a quality improvement in the production stage to improve standardization.
- In general the ability to provide products which meet the environmental requirements of the most demanding markets at a competitive price is a crucial condition for growth.
- Some companies of the cluster expressed their difficulties in undertaking the considerable capital investments required to upgrade their facilities; economic instability and lack of public policies are also a constraint considered an obstacle to the sector development in the long term.
- Adequate marketing support is also needed and is currently considered weak.

Main findings concerning the pork meat cluster (70 producers of pork meat and 20 salami/sausages factories located near the town of Oncativo):

- The most important strength is the local tradition of an artisan product linked to its place of origin/production which has been widely recognized (salami of Oncativo). This attribute of territoriality could be extended to other pork meat products.
- In general, the industry is currently benefiting from an increase in pork meat demand and high profitability in the entire value chain.
- The production technology is similar to the European one. The availability of local raw materials for feeding (soy, corn etc.) allows the production of good quality meat.
- The main weakness is the distance between the production area and the major markets (e.g. Buenos Aires, Rosario) and the lack of facilities to serve larger markets.
- While some sporadic actions have been taken by a group of pork producers, the state of the collaborations with science and technology institutes, municipality and local NGOs is still very embryonic.
- There are initiatives of local entrepreneurs to integrate and develop the whole value chain and involving farmers, slaughterhouses, deboning halls and feed manufacturers.

The agro-food clusters (both dairy and pork meat products) require a similar, precise and detailed program of work and organizational support. During the study visit in Emilia Romagna (Italy), in which some members of the cluster participated, farms, firms producing pork meat and refrigerators, research and service centres to support technological transfer and quality certification etc. were visited and interviewed.

This allowed LA officials and cluster members to draw from European practices to identify the appropriate initiatives to be pursued as part of the strategy to boost innovation in the local sector. Following the stimulus provided by the European visit, further meetings took place (also inside MINCyT) to address in greater depth the problems of the cluster and define a methodology for a prospective analysis of the strategic needs.

**Biotech.** the Cordoba province plays an important role in the Argentinian biotechnology sector. In this province there is a critical mass of companies that use and develop biotechnology in the field of agriculture, food industry, animal health and human health. Moreover, the province has a solid base of scientific competences in the field.

However, the lack of a detailed map of the Biotech sector prompted the MinCyT to set up a sectoral roundtable and launch a study to analyse local scientific and productive capacity.

The main actors of the system gathered to create such roundtable (Mesa Sectorial); this multidisciplinary and multisectoral organizational structure will monitor global trends and regional potential, and play a pivotal role in the sectoral strategy design and implementation.

Furthermore, in 2011, the MinCyT funded a study to map the biotech sector of the Province. Researchers from the Economic Commission for Latin America (ECLA), UVITEC and the National University of Córdoba were involved, drawing upon Fombio (Córdoba Biotechnology Fund).

The agenda launched by the MINCyT on biotech, with the aim to produce a biotechnology strategic plan for the Province, included the following main activities:

- Preliminary meetings with representatives from industry and academia to: organize a coordination structure which includes public and private stakeholders; agree on strategic guidelines for the province; define a roadmap.



- Workshop on SME innovation in Biotechnology, as part of the EU-LA cooperation project.
- Meeting with representatives of the sectors of science and technology, academia, industry to set up an Advisory Committee and jointly develop a strategy for the Province.

The workshop on SME innovation management and tools consisted of: a presentation of the tools, exercises, models, methods and concepts to achieve greater competitiveness; an analysis of opportunities for collaboration with Europe; an analysis of successful cases and good practices. The workshop included the examination of ad hoc diagnostic tools, such as small audits, and innovation planning methods.

As part of the tutoring leg, the tools to systematically review the companies' performance were applied to two biotechnology firms in the province (a manufacturer of medicinal preparations for human health and a manufacturer of biotech products for agriculture).

### **3.3 Conclusions and lessons learned**

#### **On the regional strategy of innovation**

- In most regions in EU and in L.A., with few exceptions, the innovation actors do not work within a coordinated framework; they tend to work within their own individual strategy and set of rules and practices. Coordination at a local territorial level is not systematic and often nor recognized as a value. The division of competence among tiers of government does not provide a clear attribution of the coordination task .
- The project has defined methods to set up a credible local coordination framework and has suggested that coordination in an initial phase should be limited to those actors and areas in which there is a will to work together and to participate in the elaboration of a strategy and of an agenda. In other words, the strategy initially should be limited in its scope and ambitions, however it needs to be shared among actors and carried out continuously and coherently.
- The strategy needs to be based and focused on the local potential (firms, know how, etc.) and therefore the process of strategy definition and partnership needs to define priorities and make selective choices on where to intervene and what to do. Setting too wide strategies and programs which cannot be fulfilled due to the lack of actors, lack of common aims and lack of resources should be avoided. A first and minimum level of coordination concerns the local and national public institutions working to provide innovation services to firms.
- A regional strategy needs to be supported by scenarios and insights on the future trends and needs to be monitored carefully and evaluated in an independent way. In addition, the strategy need not be mainly carried out by the public institutions, which have to provide a framework and the instruments to the private and non-profit sectors, to make them the main actors.
- The management of the regional strategy requires accurate monitoring and independent evaluation in order to verify the outputs and results. A careful evaluation is a necessary instrument for the continuation of the policies and the choice of instruments.

- The regional strategy needs to attract and involve all the main actors of the region and provide them with common objectives and aims. These objectives must be based on a common and long term vision of the future society and on a social and political scenario in which the majority of citizens see their expectations recognized.
- A regional strategy needs to focus on SMEs or at least on some crucial sectors of SMEs which in most regions are the core of the productive fabric. Including SMEs in the innovation process is a necessary condition for the success and upgrading of the regional economy. Many ways to include SMEs in the process of innovation have been discussed during the project.
- The method experimented during the project focused on cluster policy innovation. Services can be provided through the organization of value chain clusters in sectors of SMEs and micro enterprises. The project activities were successful and 2 clusters in agro-food in Cordoba and St. Catarina were established after the training week and the study visit in the EU. This can be repeated in other clusters or groups of firms.
- The project also enhanced a triangular cooperation including the Eu regions and 2 Latin American countries which was an innovative element of this project and has promoted richer and more diversified interregional cooperation and established a common agenda among neighbor countries which will continue after the project.
- Regional strategies should not be autarchic and need to be open to other regions in different parts of the world; the internationalization of strategies and of the actors reinforce their activities and allow the regions to enter in international networks of actors and to benefit from wider competences and knowledge.
- The example of Medellin in Colombia has shown how innovation policies linked to infrastructures provision, education and other supportive policies on a social ground can rapidly and effectively change the dynamic of development of a once very problematic city as Medellin.

#### **On the type of approach to cooperation.**

- The project has been particularly successful in enhancing international cooperation and development of business exchange and trade. Its focus on concrete issues creates durable links between actors operating in different countries and continents. Actors decided to continue to cooperate along the lines of the project method which has guaranteed a concrete and operational exchange and has constantly widened the spectrum of the participants.
- The international workshop which concluded the cooperation project aimed at enlarging the participation to firms and to open the way for a full participation of the firms in such program. This implies that the final day of the workshop provided the participating firms (40 mainly from St. Catarina) and the representatives of the firms of the different regions (Cordoba, Emilia & Romagna and Colombia) with a space for cooperation and trade.
- During the B2B day the presentations focused on the agro-business sector, each speaker has described the specific products of the firm or group of firms and their characteristics related to the specific innovation that they incorporate. The representative of firms in Cordoba and Emilia in the agro-business value chain have described the potential offer of the firms that they represent in terms of trade and of cooperation.

- During the debate the grounds and the objective of a firm cooperation has been dealt with on a bilateral way and will be the focus of the next initiatives. The conclusion of this day was that next step of similar projects will incorporate more the firms in the activities to achieve a closer cooperation on innovation at firms level.
- A new approach of cooperation, based on reciprocity of interest to reinforce business and trade links has been successfully experimented with the progressive establishment of business links.
- The general conclusion of the international workshop was the widely recognized success of the EU initiative to diffuse its experience and best practice in the area of regional policy and interregional cooperation among different countries, based on concrete and operational transfer of know and finalized towards joint projects and initiatives for the mutual benefit of a wide range of actors.
- Regional policies and practices aiming to enhance regional development, devolution and participation will have an increasingly crucial role in Brazil and Argentina and in many emerging or developing countries and regions as the project has clearly shown.
- In their economic and social context, regional innovation policies have an important role as pivot of a set of locally based policies such as education, training, business services to SME's, applied industrial research and transfer of technologies. The project opened the way for deepening and widening the regional policy action and impact in these countries.

*Further cooperation phases with the EU envisaged by the participants in the guidelines documents which are currently being developed*

- The first form of cooperation should concern those involved in the management of the regional innovation strategy and those dealing with knowledge transfer and technology diffusion in universities, R&D centres and companies. For this type of cooperation, certain organisations in Emilia-Romagna and Baden-Württemberg expressed willingness to arrange internships of officials responsible for the implementation of innovation policies and responsible for technology transfer and services to SMEs. This is the case of: ASTER, the regional innovation agency of Emilia-Romagna; CRPA LAB, which provides numerous laboratory services to the Consortium of Parmigiano Reggiano cheese; Reggio Emilia Innovazione, promoting technology transfer from universities and R&D in companies (in the areas of agro-business and mechatronics mainly); Steinbeis Europa Zentrum, BIOPRO BW, which coordinates Baden-Württemberg biotech clusters and promotes / facilitates vertical linkages between the different components of the value chain; the Ministry of Rural Affairs and Consumer Protection of Baden-Württemberg.
- The second form of cooperation between firms clusters and/or enterprises could occur in the following ways:
  - facilitating the participation of Latin American agro-food SMEs in the annual fair "R2B – Research to business" in Bologna in June 2013 and also in the food fair to be held in Milan ("Nutrire il pianeta, energy per la Vita") in 2015;
  - promoting the development of linkages between LA companies and the agro-business and mechatronics sectors in ER, through the services of Reggio Emilia Innovazione;
  - facilitating the linkages between specific LA clusters (e.g. Cluster Quesero of Villa María, Córdoba) with industrial research laboratories and consortia (e.g. Parmigiano Reggiano Consortium);

- promoting the inclusion and involvement of LA companies in the European Enterprise Network.

## 4 Annex –

Organizations and enterprises visited in Europe and links established with Latin America agro-food organizations:

Main regional institutions and firms visited in Emilia-Romagna	Links established with research institutions, technology transfer service providers and firms in Latin America
<p><i>Institutions</i></p> <ul style="list-style-type: none"> <li>• ASTER - the Consortium for Innovation and Technology Transfer in Emilia-Romagna whose partners include the regional administrations, local universities and research centres;</li> <li>• Reggio Emilia Innovazione, a provincial consortium which supports industrial research and technology transfer;</li> <li>• the University of Parma and the University of Bologna;</li> <li>• Centuria, the agency for innovation and knowledge diffusion in Romagna;</li> <li>• CRPA Lab – “Centro ricerche produzioni animali”, which conducts industrial research and provides technology transfer services in the agro-food sector, in particular in the value chains of meat processing, dairy products, fruit and vegetables.</li> </ul> <p><i>Firms visited and enterprises have stated their intention of cooperating.</i></p> <ul style="list-style-type: none"> <li>• “Due Madonne” dairy product cooperative, part of the Parmigiano Reggiano consortium</li> <li>• SSICA, experimental station for the industry of canned food, part of the Chamber of Commerce of Parma</li> <li>• OCME, packaging machines and robots</li> <li>• CERMAC Bologna</li> <li>• MACFRUT</li> <li>• CSO - Centro Servizi Ortofrutticoli</li> <li>• Uteco Contec Srl</li> <li>• GBO S.r.l.</li> <li>• Artest S.p.A.</li> <li>• Unipeg Soc.Coop.Agricola</li> <li>• Granarolo S.p.A.</li> <li>• ASSICA</li> </ul>	<ul style="list-style-type: none"> <li>• ADEC - Agencia para el Desarrollo Económico de la Ciudad de Córdoba</li> <li>• AERCA - Asociación de Empresarios de la Región Centro Argentino.</li> <li>• AFAMAC, association of producers of machines and components for agriculture</li> <li>• AGD S.A.</li> <li>• Apymel - association of Small and Medium-sized Dairy Enterprises</li> <li>• BUNGE S.A.</li> <li>• Caprolec</li> <li>• Center for Advanced Studies (CEA)</li> <li>• Centro de Relevamiento y Evaluación de Recursos Agrícolas y Naturales - CREAN</li> <li>• CEPROCOR Centro de Excelencia de Productos y Procesos de Cordoba</li> <li>• Cooperativa de Arroyo Cabral - Cooperativa Láctea</li> <li>• DISE S.A.</li> <li>• El Craikense - Cooperativa Láctea</li> <li>• Embotelladora Mediterranea SA</li> <li>• Embrapa (Brazilian Agricultural Research Company)</li> <li>• Empresas del Cluster quesero de Villa María</li> <li>• ENINDER - Ente Intermunicipal para el Desarrollo Regional</li> <li>• Fundación Banco Provincia de Cordoba</li> <li>• Funesil - Fundación Cultural de Profesores y Amigos de la Escuela Superior Integral de Lechería de Villa María</li> <li>• Instituto de Ciencia y Tecnología de los Alimentos - ICTA</li> <li>• Junta Intercooperativa de Productores de Leche</li> <li>• Laboratorio de Análisis de Semillas, Investigación, Docencia y Servicio - LASIDYS</li> <li>• Lemper S.A.</li> <li>• Local development agency Bell Ville</li> <li>• NOAL S.A.</li> <li>• ProCórdoba – Agency for promotion of export</li> <li>• Pylacor – cheese export group</li> <li>• Research Institute Mercedes and Martin Ferreyra (INIMEC)</li> <li>• Technology liaison units of Cordoba Universities (UTN, UNC, UNVM UNRC)</li> <li>• UVITEC</li> </ul>

Organizations and enterprises visited in Europe and links established with Latin America biotech organizations:

Main regional organisations visited in BW	LA links established with scientific research institutions, technology transfer service providers and firms
<ul style="list-style-type: none"> <li>• Baden-Württemberg International, an agency responsible for promoting the internationalization of local firms, attracting investments and fostering international cooperation;</li> <li>• BIOPRO which supports existing Biotechnology Clusters in Baden-Württemberg;</li> <li>• Steinbeis-Europa-Zentrum, provides technology transfer services to German enterprises through its technology transfer unit (STW)</li> <li>• STERN (Stuttgart, Tübingen, Esslingen, Reutlingen and Neckar-Alb) BioRegio Management GmbH which promotes the development of the life sciences industry in Baden-Württemberg;</li> <li>• Stuttgart Region Economic Development Corporation (Wirtschaftsförderung Region Stuttgart GmbH or "WRS") which is the central contact for investors and companies in the City of Stuttgart and the five neighboring counties;</li> <li>• the BW Foundation which supports research in several scientific fields.</li> <li>• the Institute of Food Science and Biotechnology of the University of Hohenheim;</li> <li>• the MFG Innovation agency for ICT and Media;</li> <li>• University of Applied Sciences of Esslingen;</li> <li>• ZSW, a German non-profit foundation for solar energy and hydrogen technologies.</li> <li>• Baden Federation of Industry.</li> <li>• Fraunhofer foundation.</li> </ul>	<ul style="list-style-type: none"> <li>• Arcor S.A.</li> <li>• Buffon S.A.</li> <li>• BUNGE S.A.</li> <li>• CABIOCOR, Camara de biocombustibles Cordoba</li> <li>• Center for Advanced Studies (CEA)</li> <li>• Center for Research in Biological Chemistry of Cordoba (CIQUIBIC)</li> <li>• Centre for Ecology and Renewable Natural Resources Dr. Ricardo Luti – CERNAR</li> <li>• Centre for Research in Clinical Biochemistry and Immunology (CIBICI)</li> <li>• Centro de Biología Celular y Molecular – CEBICEM</li> <li>• Centro de Estudios de Transporte – CETRAN</li> <li>• Centro de Farmacoepidemiología</li> <li>• CEPROCOR Centro de Excelencia de Productos y Procesos de Cordoba</li> <li>• Cluster Córdoba Technology</li> <li>• DISE S.A.</li> <li>• Dulcor</li> <li>• Enterprises and institutions of the Biotechnology Cluster Córdoba</li> <li>• IIByT CONICET – Facultad de Ciencias Exactas Físicas y Naturales de la Universidad Nacional de Córdoba.</li> <li>• IMMAGEN S.A.</li> <li>• Institute of Experimental Pharmacology Córdoba (IFEC)</li> <li>• Institute of Plant Pathology (IPAVE) - Agricultural Research Center (CIAP) of the National Institute of Agricultural Technology (INTA).</li> <li>• Instituto de Farmacología Experimental de Córdoba (IFEC)</li> <li>• Instituto de Física – IFFAMAF</li> <li>• Instituto de Investigaciones en Física Enrique Gaviola (IFEG), Facultad Regional Villa María UTN - Grupo Biocombustibles.</li> <li>• Instituto Superior de Ingeniería del Transporte - ISIT</li> <li>• INTI – National institute of industrial technology</li> <li>• Laboratorio de Hemoderivados</li> <li>• Lemper S.A.</li> <li>• Manfredi Agricultural Experimental Station of the National Institute of Agricultural Technology (INTA).</li> <li>• NOAL S.A.</li> <li>• Promedon</li> <li>• Research Institute of Physical Chemistry of Cordoba (INFIQC)</li> <li>• SanCor</li> <li>• Savant Pharm Inc.</li> <li>• Vates S.A.</li> </ul>