



TRES CULTURAS
الثقافات الثلاثة שלוש התרבויות
FUNDACIÓN

INTERNATIONALIZATION AND INNOVATION POLICIES IN ANDALUSIA: WHICH PROSPECTS IN THE MEDITERRANEAN?

**Fundación Tres Culturas del Mediterráneo
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November 2007

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1.- DIAGNOSE

According to the European Commission, innovation is an economically-related concept, and it has to lead to concrete knowledge that makes it possible to improve economical outcomes quantitatively and qualitatively. This concept is not restricted to the development of new products, but also new processes, methodologies and forms of partnership.

Historical economic situation in Andalucía, as well as in the rest of Spain and the Mediterranean basin (Italy, Portugal, Greece), is a situation of comparative economical backwardness with northern Europe, as it is shown by time series from 1850 to 2000. This has led to some authors to define a genuine “variant of Mediterranean growth”. The reasons of this variant of growth are several, but one of the most important is a historical lag in research and technological innovation among Mediterranean countries.

The concrete situation of Andalucía is even worst than that of the rest of Spain, since Andalucía is a low developed region inside Spain. Andalucía has a total population of 7.849.799 people, a 17,8 % of the 44.108.530 total Spanish population. However, it has a 15,66% of the total active Spanish population, and a 13,8 % unemployment rate (against an 8,7 % unemployment rate in the rest of Spain). These numbers, along with a GDP per capita of 15140 € against a Spanish GDP per capita of 19637 €, shows the economic gap between Andalucía and the rest of Spain. This situation of economic weakness become official inasmuch as Andalucía is still considered by the European Commission as a top priority region in order to the allocation of structural funds.

With respect to the innovation efforts made in Andalucía, we can observe that the total research budget is 883 million € (a 0,77% of GDP), against a 8946 million € in Spain as a whole (a 1,07% of the GDP). A 32.3% of the R&D expenditure in Andalucía was financed by the private sector, while a 48.4 % of the total R&D expenditure in Spain is financed by the public sector.

Number of researchers in Andalucía is 11998 (4 for every 1000 active population), against 100994 in Spain as a whole.

There are 10 universities in Andalucía, with 235121 students (a total of 73 universities and 1462897 students in Spain).

The total number of patents registered is 336 (3897 in Spain as a whole).

We can conclude by the data the comparative worst situation of Andalucía with respect to the rest of Spain in the innovation field.

The attraction of Foreign Direct Investment in Andalucía through multinationals has a special importance regarding the technological weaknesses of the region, since multinationals use to invest a greater proportion in R&D, and have a spill over effect. In fact, much of the technological development in Andalucía and Spain in the 2nd half of the 20th century is due to the Foreign Direct Investment. Since its admission to the European Union, time series show that Spain has experienced a great increase in the attraction of Foreign Direct Investment (FDI), and Andalucía has attracted an important share of that FDI (a 6,58% over the Spanish total FDI over 1987-1997). Although current trends show a sharp decrease in FDI over the recent years, the importance of it in improving innovation in Spain since 1986 has been huge.

According to Dunning, there are three reasons that lead firms to internationalize its operations through FDI: ownership, internalization and location advantages. While the first

two reasons refer to the internationalizing firm's own abilities, the location factor is given by the characteristics of the region in which the multinational is to be located: the region has to provide geographical advantages.

Which strengths and weaknesses do we find in the Andalusian situation? Research on this field shows that in Andalucía there are more weaknesses than strengths (what is logical in a peripheral region).

The main weaknesses are 1) Little size of the market, 2) Low qualification and education levels, 3) Scarce labour force (specially among women and young population) due to the little active population and the high unemployment, 4) Low R&D expenditure.

And the advantages seems to be grounded on 1) the lower salaries (that is, the relatively cheap labour force) and 2) low real state prices (we can observe how these two factors are being recently eroded by the high inflation and the real state bubble, contributing to the decrease of FDI flows). Another very important advantage seems to be 3) the climatically good conditions in Andalucía. This could appear of little importance, but this same reason is credited as being one of the most important motives of California's economical strength with comparison to the rest of the US.

What results from this diagnose is that multinationals will mainly invest in relatively low technological sectors (taking advantage of the lower salaries). This fact seems to be supported by empirical data: statistics provided by López y Mella show that most important sectors (those with competitive advantage) in receiving FDI in Andalucía are:

- Agri-food: Given the importance and the historical comparative advantage that Andalucía has had in the agrarian and fishing sector. We can observe FDI in international purchases of Andalusian companies like Koipe.
- Beverages, especially in the Sherry sector, with international companies like Allied Domecq, and the beer sector, through the purchase of Cervezas Cruzcampo by Heineken.
- Mining and the iron-steel industry, due to the historical importance of mineral deposits in Andalucía (multinationals like Boliden).
- Construction and real state, given the importance of tourism in Andalucía.
- Chemicals, mainly located in Huelva's chemical pole.
- Automobile: Renault in Sevilla, General Motors and Ford in Cádiz.
- Aeronautics, through the European consortium EADS.

2.- POLICIES AND INSTRUMENTS

Innovation policies in Andalusia receive an impact from European, Spanish, and Andalusian administrations.

As we will see, from this overlapping legal framework we infer that the Spanish Government establishes general policies, while the regional authorities implement them through the corresponding institutional building. At the same time, the EU seems to operate in a somehow own framework, establishing its own funding programs.

2.1.- The European Union innovation system

Article 157 of the European Economic Community Treaty, states that “The Community and the Member States shall ensure that the conditions necessary for the competitiveness of the Community's industry exist. For that purpose, in accordance with a system of open and competitive markets, their action shall be aimed at: [...] fostering better exploitation of the industrial potential of policies of innovation, research and technological development”.

This legal statement is to be implemented by European policies. As a result, the Lisbon Agenda listed innovation as one of the main priorities to bolster European's economic system. According to this statement, a set of instruments have been created.

First of all, innovation is weighted as a criterion when considering the granting of any public subsidy in the framework of a European program (there are more than 400 EU programs able to provide financial support). Thus, if any government or public agency, or a private person wants to get some financial support from the European Union for some program, it has to show its impact on the innovation system.

2.1.1.- Framework Program VII

The innovation field is specifically addressed in Framework Program VII for innovation. This program envisages a total 50,5 billion € for spending in its entire time span (from 2008 to 2012). Inside this program, the most important item is the cooperation program (32 billion €), which has a special importance to our purposes, since it encourages transnational projects.

Framework Program VII assumes a direct relationship between institutions and firms and the European Union. Thus, its field of action is the entire EU territory, it doesn't allocate financial support according to regional criteria. Framework Program evaluates every scientific or technological project according to objective criteria, related with the possibilities of innovation.

As the Framework Program VII confers financial aid according to objective criteria related with the quality of the program and the probability of success (criteria rated by independent committees), the ratio of success of a region's institutions and firms in obtaining financing from the Framework Programme can be used in order to evaluate the excellence of a region's innovation. Following this reasoning, over the years 2003-2004, Spain has obtained 5,9% of the total 7,4 billion € of subsidies given in the Framework Programme for innovation. Of the total amount given to Spain, Andalucía obtained just a 4,4% (put it in comparison with

the 17,8% share of Andalucía in the total Spanish population). This means that Andalucía obtained just a 0,2596% of the total European funds given in the Framework Programme VI.

2.1.2.- Cohesion and structural funds. The INTERREG

The European cohesion and regional Funds are managed in Andalucía according to the “Programa Objetivo Integrado” (POI), which at the same time is framed by the “Marco Comunitario de Apoyo para las zonas del Objetivo nº 1 de España”. This POI is drawn up by regional and national authorities, and has to be passed by the European Commission. The POI and its subsequent programs are carried out jointly by the central and the regional administration. The institution entrusted with the direct implementation of the POI program is the “Agencia de Innovación y Desarrollo de Andalucía”, Agency of Innovation and Development of Andalusia.

EU's structural and cohesion funds are aimed at particular regions, being Andalucía a top priority region since 1986. Cohesion funds basically aim at big infrastructure building, while structural funds are composed by four programs: European Regional Development Fund (ERDF), European Social Fund (ESF), European Agricultural Guidance and Guarantee Fund (EAGGF) and Financial Instruments for Fisheries Guidance (FIFG). Among all these instruments, only the ERDF is concerned with innovation. Over the years 2000-2006, 8 billion € were allocated to Andalucía. A 75% of them (6 billion €) came from ERDF instruments, and an 18,8% out of these 6 billion € were allocated to innovation activities (that is, a 1,128 billion €). This money devoted to innovation was channeled through the INTERREG program.

The INTERREG IV, officially approved by the European Commission on 11 September 2007, is the EU programme that helps regions of Europe work together to share their knowledge and experience. Launched in 2007, the programme will run until 2013.

INTERREG IV provides funding for all regional and local public authorities (private bodies can participate in the operations but at their own cost) of Europe plus Switzerland and Norway to exchange and transfer knowledge and good practice. Two main priorities are targeted: ‘Innovation and Knowledge economy’ and ‘Environment and Risk prevention’.

The programme has a budget of 321 million euros, financed from the European Regional Development fund (ERDF), and it is not organized into different zones, there's one single programme for the whole European territory.

Partners not member of the EU (like Moroccan institutions) can be eligibles under INTERREG IV *at their own cost*. INTERREG IVC projects have to involve partners who represent at least three countries, from which at least two partners must be from EU Member States and financed under the INTERREG IVC programme.

The co-financing rate under the INTERREG programme is up to 75% for partners from the more developed EU Member States (*among which Spain is classified*), and up to 85% for partners coming from less developed countries.

2.2.- Central Administration Framework

Article 149 of the Spanish Constitution endows the Central Government with a competence in the innovation field according to the following terms: “The State shall have exclusive competence over the following matters: [...] Promotion and general coordination of scientific and technical research”. This formula is understood by Spanish authorities in such a way that the Spanish Government has a competence just to establish sweeping objectives and frameworks for innovation and research policies, thus giving much leeway to regional authorities.

Although the State’s direct intervention in the economy has been abandoned, especially since the privatization waves in the 90s, public central administrations are still major players in basic research, education and health.

In line with this, Spanish central authorities total direct public expenditure in R&D amounted to 0,47% of the Spanish GDP (that is, 54,3% of the total R&D in 2003 according to OECD’s numbers, but if we take into account also public subsidies, the number is a 63,7%), a big number, but still lower than the 0,56% of GDP invested in R&D by public administrations in countries such as Italy. In Andalucía concretely, total Public efforts amount to a 0,55% of the GDP (a 70% of the total expenditure in R&D). We can thus observe that public presence in Andalusian’s R&D is greater than in Spain as a whole, and at the same time, private presence is much lower (what is worrying).

These numbers refer to budgetary allotments, but it has also to be taken into account the importance of tax deductions, given the beneficial treatment that R&D items have in the Spanish “Ley del Impuesto de Sociedades”.

2.2.1.- Plan Nacional de Investigación Científica y Desarrollo Tecnológico

At the central administration level we find the “Plan Nacional de Investigación Científica y Desarrollo Tecnológico”, which is basically composed by allotments allocated in a competitive concurrence basis for concrete projects (like the European Framework Program VII) of technical innovation and human resources promotion. The current “Plan Nacional de Investigación Científica y Desarrollo Tecnológico” is planned to have a lifespan from 2008-2011. A very important actor in the Spanish innovation framework, the “Comisión Interministerial de Ciencia y Tecnología” is entrusted with the drafting of this national plan, in a process open to the participation of all the concerned stakeholders.

In the period 2000-2003, under the “Plan Nacional de Investigación Científica y Desarrollo Tecnológico”, 1,5 billion € have been given as direct subsidies, and 2,7 billion as low interest loans. Andalucía has received a 10.9% out of 23.859 admitted projects, while an 11.1% of the total 1,5 billion € subsidies.

Other active institutions envisaged by the “Plan Nacional de Investigación Científica y Desarrollo Tecnológico” are the CDTI (Centro para el Desarrollo Tecnológico e Industrial), which has allotted to Andalucía in the year 2005 14 million €, through 31 projects. The activities of this institution are very important, since it has a clear international orientation, having offices in Morocco.

Another important actor is also the ICO (Instituto de Crédito Oficial), whose purpose

is to allocate loans to firms who have embarked in internationalization projects.

2.3.- The specific regional framework

The Andalusian Statute (Andalusian regional fundamental law), establishes in its article 54 that:

“1. Corresponds to the Andalusian Autonomous Community, in the subject of scientific and technological research, the exclusive competence in relation with research centres and structures of the Junta de Andalucía and the projects funded by it. This comprises:

- a) The establishment of its own research lines and the monitoring, control and assessment of its projects.
- b) The organization, working regime, control, monitoring and accreditation of centres and structures located in Andalucía.
- c) Regulation and management of scholarships and grants announced and financed by the Junta de Andalucía.
- d) Regulation and professional training of the research personnel, and support to the research.
- e) The spread of science and transference of results.

2. It corresponds to the Autonomous community the shared competence over coordination of research centres and structures in Andalucía.

3. The collaboration criteria between State and Junta de Andalucía over the matter of research policy, development and innovation, will be set in the frame of what is established in Title IX. Likewise the Junta de Andalucía will participate in setting the State's will with respect policies that affect this topic in the European Union's field and in other International Institutions and Organizations' field”.

Despite its late arrival in the field of science policy, Andalucía has made considerable effort to meet the pace marked out by the European R&D Framework Programmes and the National Spanish Plans. A 41,49% of the sums invested in research and development in Andalucía during 2002 were taken from the Andalusian regional Government's own funds.

A key reorganisation element has been creation in the year 2004 of the Innovation, Science and Business Council (Consejería de Innovación, Ciencia y Empresa) in an effort to take advantage of existing synergies in activities promoted by the former Education and Science Council (Consejería de Educación y Ciencia) and the Employment and Technological Development Council (Consejería de Empleo y Desarrollo Tecnológico). This new council has been assigned responsibilities relating to science policy, universities, research centres and businesses to integrate science policy and technological development and innovation.

2.3.1.- The PAIDI

Andalusian Government has developed the **Research, Development and Innovation Plan of Andalusia (PAIDI)** focused on promoting R&D as motor of social change and

modernization of Andalusia. The current PAIDI has a lifespan from 2005 to 2010. The PAIDI works in a similar way to its counterparts the European Framework Programme and the Spanish R&D Plan, so it is the basic legal reference for regional innovation policies in Andalucía.

PAIDI Goals:

- 1) Generation of knowledge and value enhancement strategy.
- 2) Development of an enterprising and innovative culture within university, researching entities and companies.
- 3) Improvement of sharing channels of promoting technological development and innovation.
- 4) Involving of private initiative on Andalusian Knowledge System through the research, technological development and innovation.

PAIDI principles:

- 1) Integration and cooperation of Andalusian R&D System.
- 2) Quality, excellence and pertinence within the knowledge creation.
- 3) Coordination and complementariness on technological development.
- 4) Providing guidance to the results.
- 5) Protection of the created knowledge and copyright.
- 6) Interaction and transfer among public and private agents about researching and technological development.
- 7) Researching and technological development as global process.
- 8) Equality

PAIDI AGENTS

The PAIDI, as a development strategy, is in charge to organize and to articulate, in form of operational network, different involved agents. The PAIDI agents can be grouped in the following categories:

- **Technological and Knowledge Spaces.**
- **Organizations oriented to the Generation of the Knowledge.**
- **Organizations oriented to the application and transference of Knowledge and Technology.**
- **Organizations supporting the coordination and management of the Knowledge and the Technology.**

The Andalusian Council of Innovation establishes the qualifications of the agents of the Andalusian System of the Knowledge, the main characteristics, functions and requirements.

A) Technological and Knowledge Spaces

The Technological-Scientific Parks (Parques Científico-Tecnológicos - PCT) are technological and knowledge spaces, equipped with advanced technology infrastructures, with companies and organizations that aim their objective to the investigation, the technological development and the innovation. These Technological-Scientific Parks operate as the most important technological nodes in Andalucía, and they are the following:

- Oil and Olive Orchard Scientific-Technological Park (Parque Científico-Tecnológico del Aceite y del Olivar), in Jaén.
- Almería Innovation and Technology Park (Parque de Innovación y Tecnología de Almería, PITA), in Almería.
- Aznalcóllar Environmental Park (Parque Medioambiental de Aznalcóllar, PAMA), in Sevilla.
- Andalucía Aeronautical Technological Park (Parque Tecnológico Aeronáutico de Andalucía - AERÓPOLIS), in Sevilla.
- Cartuja 93 Technological Park (Parque Tecnológico Cartuja 93), in Sevilla.
- Andalucía Technological Park (Parque Tecnológico de Andalucía - PTA), in Málaga, one of the most important in presence of multinationals, with firms such as Air Liquide, Thomson, Caterpillar, Nokia, Siemens, Telefónica, or Vodafone, and where are located the headquarters of the International Association of Science Parks (IASP).
- Health Sciences Technological Park (Parque Tecnológico de Ciencias de la Salud), in Granada.
- Rabanales 21 Scientific-Technological Park (Parque Científico-Tecnológico Rabanales 21), in Córdoba.

However, from the parks listed above, only the ones in Sevilla and Málaga are really dynamic. In this line, according to the IASP, southern Europe technological parks apply much less strictly admission criteria than technological parks in the north.

Another different category, the Parks of Enterprise Innovation (Parques de Innovación Empresarial - PIE), are characterized just by a geographic proximity objective (they don't have necessarily to be equipped). They are comprised by delimited spaces where companies or organizations are grouped, reaching technological synergies in order to induce economic development within the scope of influence, interrelating with surroundings by means of processes of diffusion, application and transference of the knowledge.

B) Organizations oriented to the generation of knowledge: Centres of Knowledge Generation

Basically, Universities and Public Investigation Organisms through Institutes, centres and groups of investigation, the Institutes of Investigation and the Research centres of Junta de Andalucía, the groups of research of the Public Health System of Andalusia, as well as the Advanced Technological Centers and the R&D departments of the private companies. These agents contribute with their active knowledge generation through their activities of investigation.

The Andalusian Council of Innovation (Consejería de Innovación) specifically develops tasks of investigation through Andalusian Institute of Agrarian, Fishing, Food Investigation, and Ecological Production (IFAPA). The IFAPA, is a tool to stimulate the producing agents, the entrepreneurship in the agriculture and fishing sectors (two of the most important economic sectors in Andalucía).

Areas for Technical and Scientific Research (AICT) are the priority fields of research, established by the PAIDI, and reflect the strategic priorities of Andalusian R&D system:

- Aeronautical.
- Space.
- Biotechnology.

- Agro-industrial and Food.
- Exact and Experimental Sciences.
- Health.
- Social, Economic and legal Sciences.
- Humanistic and artistic creation.
- Technologies of the production.
- Nanosciences, Nanotechnologies and materials.
- Natural Resources, Energy and Environment.
- Information and Communication Technologies.
- Social Integration, and Immigration.
- Globalization and Cooperation.
- Violence and Behaviour Social.
- Historical and Artistic Patrimony.
- Territorial Integration, Transport and Intermobility
- Tourism.

All these areas, to a greater or lower extent, are present in Andalucía, and according to chapter II Title II of the “Estatuto de autonomía de Andalucía” (the aforementioned regional fundamental law), they fall within the competences of the regional authorities.

C) Organizations oriented to the application and transference of Knowledge and Technology.

It refers to actors that put the knowledge system in value, orienting the activity of the agents responsible for the knowledge generation towards the needs of the enterprise sector, putting in circulation the knowledge, generating technology and innovation, promoting the creation of new companies and contributing to the competitiveness of the system. Apply to this category the Advanced Technological Centers, the Centers of Innovation and Technology, the Organizations of Transference of the Knowledge, the Centers of Creation and Consolidation of Companies with Technological Base. There are a myriad of organizations and institutions that, according to the Andalusian Council of Innovation apply to these categories.

D) Organizations supporting the coordination and management of the Knowledge and the Technology.

In this category we can find: the Network of Technological Spaces of Andalusia (RETA - Red de Espacios Tecnológicos de Andalucía), the Andalusian Agency for Quality Evaluation and University Accreditation, the Technological Corporation of Andalusia, the Agency of Innovation and Development of Andalusia, INVERCARIA, and the Network of Spaces of Scientific and Technical Divulcation of Andalusia (Red de Espacios de Divulgación Científica y Técnica de Andalucía - RECTA).

The Network of Technological Spaces of Andalusia (RETA) is an instrument for the Andalusian Council of Innovation for the coordination and development of Andalusian innovation system. RETA is a communication channel between the centres and public groups of investigation, the Public Administrations, the technological spaces, the organizations of knowledge transference and the companies.

The Andalusian Agency for Quality Evaluation and University Accreditation is an

organism dependent of the Andalusian Council of Innovation in charge with the monitoring of the system's quality, proposing quality criteria, designing and managing the processes of quality evaluation.

The Technological Corporation of Andalucía (Corporación Tecnológica de Andalucía - CTA), as a structure for coordination and management promoted by the Andalusian Council of Innovation, stimulates the applied research and the generation of innovating enterprise projects; it is in charge to integrate companies with similar technological objectives. The Technological Corporation of Andalusia is the supporter of projects jointly carried out by Universities, research centres and companies in strategic sectors. It will also play the role of consultative organism helping to define the high-priority lines in strategic sectors, and it will constitute an instrument to evaluate the impact of projects financed by the regional Andalusian.

The Agency of Innovation and Development of Andalusia and INVERCARIA are strategic organizations for the Council of Innovation for company promotion, and stimulating the enterprise sector, working as publicly owned venture capital companies.

The Network of Spaces of Scientific and Technical Divulcation of Andalusia (Red de Espacios de Divulgación Científica y Técnica de Andalucía - RECTA), is the organization for management and coordination of science activities, promoting their creation and accessibility, in order to stimulate the research and the diffusion of knowledge culture.

3.- DIAGRAM OF THE ACTORS INVOLVED IN THE INNOVATION PROCESS IN ANDALUCÍA

According to the role played by the actors described above, we observe that the innovation process in Andalucía is affected by three administrative systems: European, Spanish and Regional, whose interaction through the different plans is the following:



4.- AN OVERVIEW ON THE MOROCCAN INNOVATION SYSTEM

Diagnose

In 2003 Morocco had 17 390 research staff and 26507 university students (Moroccan Ministry of Education, 2003 report). The majority (58 percent) were employed in the university sector.

At present about 0.7 % of Morocco's national GDP is devoted to research, and the government's goal is to reach 1 percent of GDP by 2010. But patents issued by Moroccan nationals accounted for in 1997 only a 6% of the total patents issued in Morocco (OMPI). So we see a lack of correspondence between total efforts (0.7 % of the GDP) and outcomes. This seems to be due to the lack of dynamism in a private sector long protected and sheltered.

A National Research Fund was created in January 2001. Its role is to diversify and reinforce the resources already allocated to R&D by public authorities, and to provide the means for civil society to participate in research activities.

The institutional framework

The national system of scientific and technical research in Morocco is guided by elements such as long-term 20 years strategies and five-year plans. The government's Five-Year Plan for 2000-2004 articulated the priority lines for research. This plan aimed to align S&T research with socio-economic development priorities (namely agriculture, fisheries, mining and transport).

The *Permanent Inter-ministerial Committee for Scientific Research and Technological Development* (established in 2001) is the most important S&T policymaking body in the country. It is made up of ministers with S&T responsibilities and presided over by the prime minister. It establishes the directions for promoting scientific research and technological development, and provides guidelines for coordinating and overseeing research activities in different government departments. It also suggests how resources should be allocated to research projects and programme areas, in line with national priorities.

The *Government Authority in charge of Scientific Research* acts as the secretariat for the inter-ministerial committee, and is responsible for developing and implementing government science policy.

The *Ministry of National Education, Higher Education, Professional Training and Scientific Research* is the central government ministry in the country's S&T system. The key department within this ministry is the Department of Higher Education, Professional Training and Scientific Research, headed by a Secretary-General.

Performing institutions

The *National Centre for Scientific and Technological Research* is the most important R&D actor at national level in Morocco. It participates directly in research activities, and conducts its own research.

In the higher education sector the *public universities and their associated faculties, schools and research institutes* are the main R&D performers. There are 14 public universities.

There are also 15 *government and semi-public R&D institutes*, mainly in the fields of mining, phosphates and energy.

The *private sector* is the least active player in Moroccan research.

5.- CONCLUSION: SOME PROPOSALS ON INNOVATION AND INTERNATIONALIZATION IN THE WESTERN MEDITERRANEAN BASIN

According to Maggioni and Uberti, Andalucía presents a great international projection in being involved in international research networks. A great institutional support was given in the former INTERREG IIIB (2000-2006) for the cooperation in the innovation field between Andalucía and Morocco, but this is not the case anymore in the current INTERREG IV. Nowadays, it seems that the most important innovation flows from Andalucía to Morocco stem from the unpopular relocation of firms (like the enlargement of the Tangier's factory of Delphi's automobile company after the closure of the factory in Cádiz).

Some proposals for contributing to an innovative environment in the Mediterranean would be:

- 1) Promote a change in culture, in businessmen's consideration towards innovation: innovation as an investment rather than expenditure. We have paradoxically dealt with two regions (Andalucía, Morocco), in which public efforts to enhance innovation are not having a clear outcome. According to this, most economists agree on the fact that innovation should rely mostly on businesses initiative (more linked to value generation) rather than on public initiative, and a cultural change becomes a precondition to this.
- 2) Promotion of Mediterranean R&D cooperation policies and institutions. We've not seen a clear Mediterranean strategy to innovation. However, we consider that there are transnational synergies that should be exploited (for example, in agriculture or environmental technologies). A cooperative rather than a competitive stance should be stressed.
- 3) Promotion of North-South cooperation in education issues. We can't envisage a coherent Moroccan innovation policy with a literacy rate of 52% and primary school attendance of 86%.
- 4) Try to speed up administrative modernisation and reform. The role of catalyser that public administrations have to play in research and innovation cannot be fulfilled if the administration is corrupt or hasn't power enough to implement its plans. This can be easily found in the case of Morocco (Khrouz, Hajji, Bousetta).
- 5) Promotion of financial markets, in order to channel money properly. Venture capital companies are not very well developed in Europe (in contrast with the situation in the United States).
- 6) Promote the link between Foreign Direct Investment, multinationals, and local development.
- 7) Protection of copyrights and intellectual properties in the Mediterranean basin: some Chinese companies locate in Morocco or Algeria taking advantage of the different legal framework to counterfeit European products (statement during conference pronounced by the CEO of Cruzber SA in Pablo de Olavide University in the framework of Cátedra Extenda).

- 8) Sponsorship of an institution for the attraction of Foreign Direct Investment in the innovation field.
- 9) Try to emphasize the interaction leisure-tourism-innovation. Trying to transform the south of Europe into a “new California” (a long time purpose proclaimed by Andalusian president Rodríguez de la Borbolla in the late 80s) seems to offer serious possibilities of realization, as it shows the tremendous success of the technological park of Málaga (PTA), in which it has been proved the attraction exerted by a good weather and leisure opportunities on executives, businessmen and scientists.

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