



# PLACES

Platform of Local Authorities and  
Communicators Engaged in Science

**Modules used: A3, B1**

**Science City**

**2012**

This is a standardized version of the original case analysis number 27. Specific names and locations have been substituted from the original document number 27 with generic references in order to preserve the anonymity of every participant.

In case you would like to read the original document, please contact [occ@upf.edu](mailto:occ@upf.edu).

**Index**

Abstract ..... 4

Introduction..... 5

Methods..... 7

Results ..... 9

Conclusions..... 17

Recommendations ..... 20

References ..... 21

## Abstract

This is a small city that, starting at the end of the XX century a strong and ambitious regional policy on research promotion and science communication, is becoming a model of city of scientific culture. This case study is part of the impact assessment of science communication initiatives and policies (SCIP) carried out in the framework of the European project PLACES. In particular, this study case assesses the impact of this city as a City of Scientific Culture, on two dimensions: public sphere (or citizens), policy sphere (or community and local dimension). The methods applied here were based on *The PLACES Toolkit for the Impact Assessment of Science Communication Initiatives and Policies* (3), with some modifications, such as the translation of the modules or its adaptation to the study. Two modules were used: Module A3 (Focus group with ordinary citizens, n=2, 9 people), module B1 (Semi-structured interviews with observers or stakeholders, n=8). Apart of them, document analysis was performed studying websites and data from the main organizations involved, as well as previous studies about impact.

### **Is this city a “City of Scientific Culture”?**

Citizens agree that their city has special features to be considered as a true “city of scientific culture” and that things are being done in this direction, particularly on the last decade. Observers (or stakeholders) interviewed are even more convinced that this is already a “city of scientific culture”.

### **Which are, if any, the impacts of the city as a “City of Scientific Culture” or of science communication initiatives and policies (SCIP) being carried out here?**

#### Impacts on citizens

Main effects, explained both for citizens and observers, are: a) increased citizen’s *scientific culture*, b) *increased knowledge and curiosity* (adults and children) and c) *increased professional and personal opportunities*.

#### Impacts on community (local, regional impact)

Main effects, explained both for citizens and observers, are: a) *cultural identity and local development related to scientific culture*, b) *tourism sector development*, c) *impacts on science and research*, d) *image, presence and visibility of the city*, e) *new jobs*, f) *new infrastructures*, g) *Business and entrepreneurship*, and h) *attraction of external funds*.

While citizens are proud of all these initiatives and their view of future is quite optimistic they also say to be worried by some problems.

## Introduction

The city is located in an Eastern region of the country. The city is the capital of its province, with a population of over 35.000 inhabitants. The city remained relatively isolated from the rest of the country due to its mountainous location, 915 meters above sea level. A campaign to give the city greater visibility began in 1999. Although the city is still the only provincial capital in the country which does not have a direct railway line to the main city, the situation has been greatly improved due in part to the 1999 campaign on transport connections.

At the end of the XX century, the city was mostly known by its Moorish heritage, the romantic story and a mausoleum, its gastronomy and some other symbols. Today the entire province, along with the surrounding region, has become also known by their paleontological heritage.

In 1998, the regional government created a paleontological foundation, which inaugurated in 2001 a science centre. The centre and foundation's main priority is to promote research, share knowledge with the general public and preserving prehistoric patrimony. The science centre has reached in 2013 almost 2 millions of visits. Taking into account that the city has over 35.000 inhabitants, it is easy to see that the centre has become a very important source of visitors to the city.

Apart from the science park, the city also has another science and science communication actors, among them, the new astrophysics observatory, *which wants to become an important research infrastructure for the city, and also a centre for science communication. The observatory is a public-private initiative with participation of the regional physics centre depending from the regional government, a Belgian company and a Spanish company.*

Other organizations and companies that are responsible for science communication in the city are the city campus of the regional university, the provincial museum of the city and other local museums in some way related to science. A bank also organizes public conferences, mainly related to the education sector.

This case study is part of the impact assessment of science communication initiatives and policies (SCIP) carried out in the framework of the European project PLACES.

The selection of the city as a study case is based on several reasons: it belongs to the city partnerships of PLACES (being one that most actively participated). It is also an example of a relatively small city with important initiatives in the field of research and science communication (being the local

science centre the most representative and visible of them). This difference between the relative small dimension of this city and the high dimension of its science communication infrastructure makes it ideal to analyze, because one can assume that impact of such SCIP should be greater than in other cases (that its, big cities with big SCIP or small cities with small SCIP).

This is not the first time that the impact of the science centre of the region has been analyzed:

- In a paper about the city as a “paleontological laboratory”<sup>1</sup>, the impact that this SCIP has had on the citizens’ scientific culture was highlighted.

*The province is endowed with a rich and varied paleontological heritage. The sites with invertebrates and Paleozoic fishes, together with the popular Mesozoic dinosaurs and Cenozoic faunas –well-known mainly for their fossil mammals- turn the city into a suitable place for the research and dissemination of paleontological culture. Giving value to all these resources the project of the science centre emerged, opening its facilities to the public in June 2001. Paleontological research is a landmark of this institution and also a bastion to develop activities with the aim of bringing Paleontology closer to the general public.*

This paper shows the influence of the SCIP carried around the paleontological heritage of the city on the advancement of scientific knowledge and also on the region and its population. This paper concludes:

*The province, with its privileged paleontological scenarios, is a true paleontological laboratory. By creating a stable group of paleontologists, this laboratory is being used to transmit to society both the rich heritage of the city and the attractiveness of gaining knowledge about the history of life and of our planet.*

- The science centre has also been studied<sup>2</sup> as a successful model based on a thematic park that promotes the local development of the city. This paper reviews direct and indirect effects on this region. This analysis is more focused on the impact of tourism and commerce:

*In addition to the jobs created directly by the installation and operation of the park, one of the positive consequences has been the increased number of visitors and tourists to the city, which has also produced an effect that small business customers are detecting, particularly in certain tourism-related businesses, such as hotels and restaurants.*

*The park opens several opportunities and expectations for both tourism and economic development of the city. However, it is still an oasis town, equidistant from major economic centers in the national northeast quadrant.*

The present study assesses the impact of the city as a possible City of Scientific Culture, on two dimensions: public sphere (or citizens), and policy or local sphere (through the data and views provided by main stakeholders or observers).

## Methods

The methods applied here were based on *The PLACES Toolkit for the Impact Assessment of Science Communication Initiatives and Policies* (3), with some modifications, such as the translation of the modules or its adaptation to the study. Two modules were used: Module A3 (Focus group with ordinary citizens, n=2, 9 people), module B1 (Semi-structured interviews with observers or stakeholders, n=8). Apart of them, document analysis was performed studying websites and data from the main organizations involved, as well as previous studies about impact.

The next table summarizes the dimensions analyzed and the modules chosen.

	Science Centres	Science Events	Science Cities
Public			<i>Focus group with (ordinary) citizens: <b>MODULE A3 (n=2 focus groups, 9 and 8 people per group respectively)</b></i>
Policy Sphere			<i>Semi-structured interviews with observers or stakeholders: <b>MODULE B1 (n= 8 people)</b></i> Document analysis
Actors			

Table 1. In italics, modules used for each dimension analysed.

Cooperation with the director of the foundation, as well as his team, was very helpful all along this case study. He shared his knowledge and views about this case, and helped providing contact details and all information we asked for. Other organisations that have contributed in a helpful way were the city campus of the regional university and a local association of commerce. The association helped looking for volunteers to participate in focus groups and the university provided a meeting room with all commodities to host them.

Two focus groups with volunteer citizens were organized during the days 26 and 27 of June 2012. Both of them were conducted in a hall inside the city campus of the local university. The first group was of 9 people, 5 women and 4 men, within a range of ages from 25 to 71, and different educational level (4 reached less than university degree, 5 had a degree), they also represented different job areas, including two unemployed young women and a jubilee. The second group was very similar: 8 people, with ages among 24 and 57, most of them with a university degree. Like in the previous group, they worked in a variety of sectors, one of them was unemployed and one was student. A moderator was present during the focus group to conduct the conversation and encourage the participants to speak, and an observer took notes. The debate was recorded and subsequently summarized.

The selection of the observers was done by the main author of this case study, after a first conversation with the director of the foundation. Each interviewee was selected for his/her experience as potential observer or stakeholder of the process, covering a diverse representativeness of different sectors. Sectors represented were education, research, mass media and culture sector. An attempt was made to also include a representative from the government, but after a couple of unsuccessful attempts, it was impossible to set an interview. Additionally, two representatives of journalism sector were interviewed instead of one, so final number of interviews was 8, as it was expected at the beginning.

Interviews were conducted in two sessions, from 11/7 to 11/9 and from 11/21 to 11/23. They were recorded and subsequently transcribed to a document. All interviews were conducted individually, with the exception of the science journalist, who was interviewed together with the newspaper editor. To preserve the confidentiality of the interview partners, information and statements quoted in the following analysis are not specifically attributed to individual partners.

<b>Code Name</b>	<b>Sector</b>
Teacher 1	Education
Teacher 2	Education
Researcher 1	Research in Sociology
Researcher 2	Research in Palaeontology
Researcher 3	Research in Palaeontology
Journalist 1	Science Journalism
Journalist 2	Journalism
Culture Representative 1	Culture

Table 2. Interviewees distribution (names of people and organizations in Annex 1)



## Results

### Results 1: Focus groups with citizens

Responses are grouped below under the two themes presented in the PLACES guide for focus group with citizens. These are: perception about the notion of “science city” or “city of scientific culture” (from now on SCi) and influence of a SCi on the citizens’ everyday life.

#### Perception about the notion of a “Science City” or a “City of Scientific Culture” (SCi)

None of the participants on the 2 focus groups had previously heard about the concept of a “Science City” or a “City of Scientific Culture”. Despite this, when asked of what these concepts suggested to them diverse words came quickly to their minds.

First of all, they associated the concept of SCi with *scientific knowledge* and a *big scientific community*, as well as a city with *science museums* and *research*.

They all agreed in the positive connotations of the concept “Science City”: In their words, it meant *strong economic base that allows the city to improve*. They quickly associated these concepts with the science park.

*It is a development source: innovation and research make GDP grow. And of course it makes the city more appealing to tourists, like the science park in our city.*

#### Influence of the city, as a SCi, on citizens’ everyday life

Citizens think that the city has many features to be an excellent SCi.

*[The city] could be a perfect city for a pilot study. It is a capital city, but a small one. It is a privileged city, but badly communicated.*

Citizens are very proud of the possibilities of the city as a city for experiment innovations or projects. They mentioned, for instance, that giving its natural particularities, the city has been place for pilot studies in several times. All of them remember one of these studies, related with the essay of a technological innovation or a digital project with schools. They were aware of these activities and pilots thanks to media: internet, television and papers.

In their opinion, more funds are needed by a city to be a true Sci. In their opinion, this need of resources and support is not particular for this city case. They can easily think of other cities as SCi, but they also think that more funds are needed to reach what they call “the SCi status”.

*Boston economy is based on the development of Harvard. Thanks to the university, the city is more advanced. We can achieve that here, but we need investments.*

Citizens were able to mention lots of scientific symbols and activities in the city related with such concept of SCi. Some of them came very quickly: the science centre, the astronomical observatory, an annual meeting on Earth sciences, conferences and activities organized by the bank or by the city campus, the activities at the summer university, the university addressed to senior citizens over 55, and more. However, they all agreed on the main aspects that turn the city into a SCi: the area's paleontological and geological resources.

When asked about symbols of the city, citizens think that the two main symbols are a *fossil* and a *star*, next to the gastronomical specialties and Moorish art.

They all agreed that the city is now better known than it was just a decade ago, and that it has advanced a lot in few years in the science and technology areas, all of it thanks to programs like the science centre and the astronomical observatory.

They absolutely think that living in a SCi keeps up the citizens' educational level. In this case, all agree that SCIP carried out for the last decade have had as a consequence a citizens' curiosity and knowledge about paleontology greater than in any other city of the country.

*Children from the city know much more about paleontology and dinosaurs than children from any other place in the country.*

However, they think that is too early to speak about vocations. In their opinion, this issue will be proved in a few years.

*The science centre wasn't here when I studied my degree. Maybe it will affect young children, but we will see it in the future.*

People with small children pointed out the science communication activities for primary schools "playing" with science activities. They consider such activities in schools capital, but they were also worried because "maybe due to the economic situation, these activities may stop".

*These kinds of activities will make the city to develop in a new way of thinking, discovering and searching.*

They also value that activities and knowledge are opened to the public.

*We don't have too much, but what we have is public.*

*The science centre opens its conferences to the public: adults and children.*

They think that one key point in this subject is the poor implication of citizens.

*Are the people from the city really involved? No. Population must say: we want this, and we are going to believe in it.*

Citizens think that living in a SCi can change their daily life, because

*It is enriching, affects education, cultural offer changes and culture is generated.*

They were asked if information about science events could easily be found and if they included those activities in their weekend program. One participant said that there isn't information about these activities, but not all agree on that. At the end of this part of the conversation, they were able to point out quite a lot of recent and past activities in this context. All of them took place in the city, including its science resources like the science park or the geology of the city, and they were shown to friends and family when they came visiting.

Looking at the future, citizens from the city admit to be worried about the possible consequences of the economic situation on these SCIP. They think that, if politicians and companies stop their support, all sacrifices will be in vain.

*We are evolving. This is a city with a big will, and step by step we are advancing and seeing our city grow.*

They also think that private companies should react and increase their investments, for more infrastructures are and will be needed in the future.

*The city doesn't have the capacity to welcome the number of tourists its activities attract. For example, we organised a festival and had problems feeding 1.000 people.*

*We should be able to develop tourism for one week, not for one day.*

In conclusion, these two focus groups showed that:

- Citizens agree that their city has special features to be considered a true "city of scientific culture" and that things are being done in this direction, particularly on the last decade.
- They all know quite well the main science communication initiatives and policies (SCIP) done in the city and they value them. They quickly can mention the science centre, the astronomical observatory, an annual meeting on Earth sciences, conferences and activities organized by the bank or by the city campus, activities at the summer university, the university addressed to senior citizens over 55, and more. However, they all agree that main aspects that characterize the city as SCi are the paleontological and geological resources of the area.
- Citizens also agree that all of these SCIP have had a considerable impact on themselves, as citizens and on the city itself. Among the most

important effects, they highlight the growth of their knowledge and curiosity about palaeontology and other scientific concepts, and the impact on the city itself, now with more opportunities for development and more visibility (now that it is better known). They highlighted too the positive impact that the science centre has had on the tourism industry. Despite this, citizens think that in order to be a true SCi, the city –like any other city in the world– needs stable economical support.

- While they are proud of all these initiatives and their views on the future are quite optimistic, they were also worried about two problems: 1) some potential impacts of the city as a SCi need years to be evident (like the increasing of scientific vocations) and they are worried about the possible consequences of the economic situation on all these SCi; 2) they also think that private companies should react to the changes that the city is experiencing as a consequence of SCi, and increase their investments in infrastructures and services. In terms of tourism attraction, they think that “the city should not develop a kind of tourism of one day, but -at least- tourism of one week”.

## **Results 2: Semi-structured interviews with observers**

Responses to the questions are grouped below under the four themes indicated in the PLACES guide for semi-structured interviews. Each interviewee is quoted with the code name (Teacher 1, Researcher...)

### Influences on the city

All interviewees agreed on the great importance and value of scientific culture for the city. It is a very small city with great scientific and cultural resources. This overall added-value will increase in the future, thanks to new discover and institutions. Right now, the city is known by the foundation and its paleontological research, but soon a new astronomic institute will be opened, that will improve with this culture of science.

*It is a small city which allows a direct relationship between scientist and society –  
Culture Representative 1–*

*The city is a small one, with lots of relevant places for science and culture. The small size of the city makes these scientific entities very well-known, and their impact is very big. The city has a strong relationship between science and palaeontology, and very soon also with astronomy –Teacher 1–*

There is not a common opinion about the role played by local authorities. Some of the interviewees pointed out that they are implied in these issues, although their economic support should be greater, while some others think that indeed they have provided an important economic support as well as an

important role on driving general programs of local development based on science and science communication:

*Researchers are really implied and lead this movement. Politicians have started to believe in the potential, but more implication is needed (...) At least, they are starting to speak about science. –Journalist 1–*

*We have always had their support, economical or institutional, and it is a very important support, because it is difficult to organise activities without it –Researcher 2–*

*Their role was to wake people up. To show that we are doing science in the city, and how this science can bring revenue. –Researcher 3–*

The involvement of researchers and experts is considered very high. They are very interested in communicating their research, and by self-initiative they go to media, schools and public to inform and communicate.

*Our work must arrive to society, because it is a tool for the economy of the city. If people know what we are doing, they will interest about it, they will come and tourism will increase. –Researcher 2–*

There is no consensus about which policies would be the most effective. But they agreed in the support to scientific centres as a first step, with a greater implication of authorities.

*We must believe that the city can be a City of Science, and support what we already have. Support research institutions and wait for the results –Culture Representative 1–*

*I would like politic decision, support from the private sector, and participation or collaboration of citizens. –Researcher 3–*

### Quality of life

The impact on the media is very high, as well as their involvement.

*They are very involved since all this [foundation] started. They have been more and more involved (...). They are very interested. –Researcher 2–*

*Media are acting with intelligence. They know that one of the few possibilities of development for the city is inside the scientific institutions, and they are making society aware of this importance. –Culture Representative 1–*

*A local newspaper has been publishing for 10 years a science page written palaeontologists themselves –Journalist 1–*

Some interviewees explain that the science section of the local newspaper is a weekly section born from the collaboration of the newspaper and the foundation. It is coordinated by the foundation's director and every week some palaeontologist writes on a regular basis. It now includes an international section aims at promoting the city among the international community and in particular, its potential in palaeontology and geology.

The impact of the science communication activities in the cultural identity has been great, all interviewees agree. Thanks to these activities, people in the country associate the city with dinosaurs, and they think that some day it will be known because of the astronomy as well. For them, for the province, to be known by its research and by its scientific culture offer is a positive model of development that makes them proud.

*We notice the impact even in commercial products: they are interested in quality products related with science, not vacuous ones. –Researcher 3–*

*Some years ago, the impact of palaeontology was limited to a small circle of people. Now it's a model. –Culture Representative 1–*

*Society absorbs interesting subjects like palaeontology. It is part of our province, and it has a touristic appeal, so villages are interested on it. Citizens are implicated, and they feel happy if things work. –Teacher 1–*

Interviewees agree that SCIP that are being carried out in the city are quite well known by citizens, particularly the science park, but they also recognise that public is still waking up.

*They [citizens] are waking up. Science has been seen as a difficult subject since the beginning (...) Scientists want to open their knowledge to society (...) Public is going to be more and more implied, we live in a knowledge society and they want to know. – Journalist 1–*

*They had showed their interest. They come with fossils that have found, to ask you and learn. We need to achieve a greater implication, to reach most of the society. – Researcher 2–*

### Social and economic impacts

All interviewees, in their role as observers, explain that there are no doubts about the impact of the science park attracting tourism to the city. As a consequence, since the opening of the park, new hotels have opened, and the owners notice when the park is closed (it is regularly closed during a time of the year). Scientific tourism is an important part of the economy in the city

*The city knows if the park is closed or opened. It is like ski stations, economical impact is very important. –Researcher 3–*

*Economical impact of science is difficult to measure, but there are lot of people working on science here: teaching it, doing it or communicating it. Economical impact on the city is enormous. –Researcher 1–*

*Repercussions are great. More visitants, new hotels... The more activities and conferences, the better impact. It is a direct repercussion: it is not necessary to wait years for it to be real. –Culture Representative 1–*

*The park is going to reach 2 million visitants. That is a big amount for a city of 35.000 inhabitants, and implies lot of money. The regional centre for physics and cosmos studies organises summer courses, and people pay for it, sleep in the city, eat in the city... –Journalist 1–*

The most important financial support measure is the city's investment fund, created to promote the economical development of the area. The support of national and regional government is also an important measure.

*The city's investment fund was created in 1992, supported by the national government and the regional government. Its aim is to promote economical development policies, and the park and physics centre were born thanks to it. Without the investment fund, we wouldn't be here speaking about science. –Journalist 1–*

*Public administration was the key, together with some banks, the only private sector that collaborates. –Researcher 1–*

Concerning the most effective financial support measures, interviewers are torn between both private and public support.

*In the future we need to continue with the investment fund. Cutbacks are important, and without it we will have to say goodbye. –Journalist 1–*

*We should convince the private sector. Sometimes territories don't know how to run their scientific resources. Maybe we could persuade the private investment. –  
Researcher 1–*

When we asked about the investments in infrastructures, all interviewers were able to point some examples, so is true that new investments were made.

*The park is relatively recent, the physics park is quite new, and we have also duplicated the number of hotels, a new palace of congress, there is the intention of a new museum... –Culture Representative 1–*

As has been said in the previous section, the only paper from the city has a science section (it also started to show the PLACES logo in the last page of the paper, to make people aware of the project), bakeries are making products related with palaeontology, and dinosaurs' toys and telescopes for children can be seen on shop window's toy shops.

### Education

All agreed that, apart from research promotion and tourism, one of the greatest impacts of science communication activities in the city is on education. Researchers are extremely implied on these activities, so students can see science and scientist very close. In general, we can say that researchers in the city are very close and opened to the public.

All of them also agreed on the lead to new courses. Not everyone can or should become a scientist, but at least they can feel the importance of science for society, and particularly for their city.

*I have students that now are working here in the park as palaeontologists. These kinds of subjects are appealing to children, and even more if they have the dinosaurs in their own city. –Teacher 1-*

*People are interested in these issues since childhood. In the future it will increase, because they are still young projects. If the projects continue, the impact will continue or will be even bigger. –Researcher 3-*

Due to the big implication of researchers, teachers and schools, school visits have increased since the beginning of this project lead by the science park. Researchers are very interested in communicating their work to citizens, including children and students, and teachers are interested in new ways of learning, and these visits are a great way of learning science.

*The physics centre is not opened yet, and teachers are interested in it. Understandably, for you can meet scientists; there is an incredible range of influential people close to you. Activities such as courses have been promoted –Journalist 1-*

The impact of activities of science communication is big at every level, due to the implication of the main actors, such as teachers, researchers or journalists. Although there are reasons to be optimistic about the future, it is also a fact that the financial crisis is playing a negative role in such issues. All interviewees point out that, even with the crisis, the city is having a great economical impact through tourism, and if the political sphere and actors can avoid the economical situation, the impact of these activities will be greater in the coming years.

*This is a circle, where everyone benefits from it, and everyone has to support good science and its communication, so society can have cultural and economical benefits. We must support this circle in the future. –Researcher 2-*

*There is something very important in the city: the close institutional relationships. There is a continuous exchange of culture, and a very interesting collaborating work philosophy. –Researcher 1-*

*In the city there is direct contact and direct observation with pieces and objects, and that is very appealing. In the future, we will go through two crises: an economical one and another of mentalities. We cannot forget that science is important and we shouldn't exclude it. –Culture Representative 1-*

*We can say that this city, thanks to science, is inside the World. –Journalist 1-*

*The city is reviving as a cultural and scientific city –Teacher 2-*



## Conclusions

This is a small city that, starting at the end of the XX century a strong and ambitious regional policy on research promotion and science communication, is becoming a model of city of scientific culture. This model has some particular features: a) it has been centred on a particular field of research, the palaeontology, due the rich paleontological heritage of the region; b) apart of research development and conservation of an historical patrimony, tourism attraction is also on the basis of these policies; c) scientist's involvement in the project has been a key factor for its success, but many other actors contribute.

After a double assessment by focus groups with citizens and semi-structured interviews with observers or main stakeholders (scientists, journalists, teachers and representatives of other cultural sectors) we have reached to the following conclusions:

### **Is this city a “City of Scientific Culture”?**

Citizens from the city agree that their city has special features to be considered a true “city of scientific culture” and that things are being done in this direction, particularly on the last decade. Despite this, citizens think that in order to be a true SCi, the city –as any other city in the world– needs long term and continuous economical support.

Observers (or stakeholders) interviewed are even more convinced that the city is already a “city of scientific culture”.

### **Which are, if any, the impacts of the city as a “City of Scientific Culture” or of science communication initiatives and policies (SCIP) being carried out in the city for the last ten years?**

#### Impacts on citizens

##### *Scientific culture*

Citizens can quickly mention the main science communication initiatives and policies (SCIP) done in the city in recent years and are proud of them. They regularly attend some of them and are proud to show them to their friends or relatives when they come visiting. They received more information about science and particularly local research thanks to these activities and also thanks to the consequent bigger coverage that these issues receive by local media.

##### *Knowledge and curiosity*

Citizens highlight particularly the growth in their knowledge and curiosity about palaeontology and other scientific concepts. They affirm that children in the city

know more and have more curiosity of such issues than in any other city of the country.

#### *Professional and personal opportunities*

Citizens explain that now that the city has more opportunities for development, more visibility and a flourishing tourism industry, they also have more opportunities, even when the situation is very critical for the rest of the country and for a small city like city.

#### Impacts on community (local, regional impact)

##### *Cultural identity and local development*

The impact of SCIP in the cultural identity has been great, as all interviewees and citizens agree. Thanks to these activities, people in the country associate the city with dinosaurs, and they think that some day it will be also known because of the astronomy as well. For them, to be known as a province by its research and by its scientific communication activities represents a positive model of development to be proud.

##### *Tourism sector development*

Both citizens and interviewees, in their quality of observers, explain that there is no doubt about the impact of the park attracting tourism to the city. Since the opening of the park, hotels have doubled their offer. This has two consequences: scientific tourism is now an important part of the local economy and the city has gained visibility.

##### *Science and research development*

In the scientific field, now there are more scientists doing research and explaining it. Local research and local researchers has gained prestige and appreciation by citizens. Scientists are now closer or even in direct contact with citizens, teachers, students (it has been quite easy because of the small dimension of the city). Research is also improving in terms of quality and internationality. More conferences and scientific meetings are being organised. Plans for the future are very optimistic, particularly in the field of astronomy.

##### *Image, presence and visibility of the city*

Thanks to SCIP, and particularly to the park, the city is now better known by the rest of the country. International visibility is also greater, and PLACES is an example of the opportunities that SCIP has had on the city to be more visible at the international sphere.

##### *New jobs*

All these activities have generated new jobs. Now there are more scientists working and also more science communicators. It affected other fields: there are more jobs in tourism (hotels, restaurants) and also more opportunities for some local sectors (transport, services, commerce, etc.).

### *Infrastructures*

The main infrastructure resulted from the SCIP carried out in the city is the science park. A congress palace is also built and the building of an important astronomic observatory is about to be finished. It should be noted that the building of those big infrastructures also represent a source of jobs and local economical benefits.

### *Business and entrepreneurship*

The city has many examples of new business projects and products that have appeared as a consequence of all this activity in the field of SCIP. Food products with the shape of dinosaurs or a flourish commercial industry of scientific toys are just two of many examples.

### *Attraction of external funds*

SCIP in the city has attracted investment from both national and regional governments. However, both citizens and observers agree that it is time for private initiatives to invest in the city.

### Problems

While citizens are proud of all these initiatives and its impacts and their view of the future is quite optimistic, they also admit to be worried about two problems:

- 1) Some potential impacts of the city as a SCi need years to be evident (for instance, the increase of scientific vocations), so they are worried about the possible consequences of the economic situation on all these SCIP
- 2) They also think that private companies should react to the changes that the city is experiencing as a consequence of SCIP and increase their investments in infrastructures and services. In terms of tourism attraction, they think that “the city should not develop a kind of tourism of one day, but -at least- tourism of one week”.

## **Recommendations**

The majority of observers pointed out the necessity of a greater implication from policymakers. Citizens also said that a stable support from policymakers is capital. Besides this, due to the economical context the country is living, funds and investments are crucial: public funds (leaded by the city's investment fund) must continue, but private support could be helpful if companies understood how beneficial could a City of Scientific Culture be.

## References

1. Here the author refers to a book about a paleontological laboratory in the city where this case study was performed. The name of this book has been suppressed in order to maintain the anonymity of this case report. If you need more information or wish to know more about it, please send a message to [occ@upf.edu](mailto:occ@upf.edu).

2. Here the author refers to an article about the impacts of the science park on the city where this case study was performed. The name of this article has been suppressed in order to maintain the anonymity of this case report. If you need more information or wish to know more about it, please send a message to [occ@upf.edu](mailto:occ@upf.edu).

3. De Semir et al. (2012) *The PLACES toolkit for the impact assessment of science communication initiatives and policies*. Barcelona: Universitat Pompeu Fabra.