Platform of Local Authorities and Communicators Engaged in Science

Modules used: B1, B2

Science City

2012

This is a standardized version of the original case analysis number 17. Specific names and locations have been substituted from the original document number 17 with generic references in order to preserve the anonymity of every participant.

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Abstract

The aim of this pilot study was to refine and to calibrate a set of tools to measure, capture and analyze the “impacts” that various scientific culture initiatives and policies (SCIPs) in the particular case of this city in the North East of the country.

As a method, we carried out 11 semi-structured in-depth interviews with the main local stakeholders (among public administrators, university representatives, science museum workers, representatives of local NGOs, communicators) and a deep document analysis (websites, laws texts, existing studies on the local public perception of research and communication activities).

Results show a local dynamic reality of SCIPs, based on a strong local vocation towards environmental and sustainability topics that lead the political decisions and orient the communication of the scientific and technological culture. The role of the public body (the province) as leader in orienting the SCIPs is fundamental. The most important actor on the science communication scene is the museum of science, opening with a new science centre in 2013. Moreover, results show a relatively good collaboration among different actors in the field of the scientific research (university, scientific institutes, and museum) and the crucial importance of the local media as leaders in influencing the opinions of the citizens.

These results let us think of discussing the opportunity to include the city among the “city of science”, though there isn’t any formal status or even proposal on this issue at the moment.

Regarding the evaluation tool tested, they show a very good consistence with the main aims of the PLACES toolkit and deserve some changes to be more effective for the next users.

Introduction

The aim of this pilot study was to refine and to calibrate a set of tools to measure, capture and analyze the "impacts" that various scientific culture initiatives and policies in the contexts of science centres, of science events or festivals of cities of science have on a local level, in the particular case of this city in the North East of the country.

Considering the different dimensions and levels of research offered by the PLACES Impact Assessment Toolkit, we decided to take the Political Sphere as the privileged area to investigate in order to pilot the instrument.

We were interested in the views of our selected interviewees in their role as privileged observers or stakeholders in the process of SCIPs. We wanted to understand what they think about the impact of SCIPs on the political sphere and the city itself, and cross these results with the documents available on the topic.

For this reason the tools used were that of the individual semi-structured interviews (module B1) and the document analysis (module B2). In the period 6th-22nd of February 2012, we conducted 9 semi-structured interviews with relevant local stakeholders. In the weeks around, we collected the relevant documents through the internet and the interviewees themselves. As far as the topic investigated are concerned, we followed the topics listed in the interview guideline, namely:

- The local social and economic impacts of SCIPs
- Their possible impacts on quality of life
- The impacts of the local policies
- The impacts on education.

During the interviews, the participants were requested to think, comment, and express their knowledge and ideas on the local SCIPs taking into account also the future of these activities and policies in the city.

To better read the results of this pilot-study, it is necessary to refer to the characteristics of the province, from the geographical and administrative points of view. This influences crucially the types of policies, activities and financing related to the local science and technology communication:

This is the main city of an autonomous province, with a special regulation as described below. Its geography is mainly mountainous, from 65 metres above the sea level to 3.764 metres. The territory is divided into 11 districts that mostly mainly coincide with the main valleys. The province valleys are very important for the

economical and the social life. This city is also home to one of the country's highest ranked universities. In 2009 the total inhabitants were 524.826, of whom about 115.511 living in the city. The local economy is mainly based on tourism (skiing in winter, excursions in summer) and agriculture (above all apples and grapes for winemaking). Therefore, scientific and technological culture in the reality of the city is for the most part contextualised through topics relating to environment, climate and sustainability, key-features around which also the local politics articulates its discourses.

The choice of piloting the toolkit for the analysis of impacts of SCIPs in the county in the town is influenced by two main features:

- The city hosts the museum of science that is third party of PLACES and one of the most important science museums in the country. Of particular importance is the transition the museum is facing in these years, and the fact that in 2013 it will move in a new science centre, projected by a world famous national architect in a formerly disused industrial area. It is also important to stress that the museum was born with a strong territorial vocation. Indeed, the concept of the museum is that of a consortium of museums of the province based on the local environment and traditions. The new website of the museum of science states that the priorities will be: the interest in local topics, the study of environment and the preservation of the identity roots, "raising awareness activities" aimed at the wider public on ecology and sustainability issues.
- The province has a special status so that from a political and institutional point of view, the province is autonomous, which means that it benefits from its own tax revenues which are given back to it by the state. The province thus manages substantial budget with respect to its size. At the same time, due to the historical and cultural context of the region, the province benefits from the transfer of regional competences to the provincial level.

A major consequence is that the province authorities are in a position of setting up and developing their own public policies with solid financial capacities for implementing them. This also implies that the financing of science in society activities comes easily from public funds rather than private investments.

As a very first relevant result, after carrying out 9 interviews with relevant stakeholders and the document analysis, we stress that the dimension and levels, which constitute the frame where the PLACES evaluation toolkit starts from, are strictly intertwined in the case of the city. Indeed, it was quite a challenge to fit the results inside the borders of the grid set toolkit: as more interviews were collected the richer became the panorama about the SCIPs activities in the province; consequently it became ever more complicated to contain the topic inside the cells

of the grid. Just for a short example, to talk about the “new forms of public/private interaction” –one of the issues investigated during the interview– in a reality as this city, where the public money finances most of the S&T research and the communication activities, lead us think of discussing the opportunity to include the city among the “city of science”, though there isn’t any formal status or even proposal on this issue at the moment.

Methods

On the basis of the potential targets listed in the Political Sphere module and of a first desk-research to explore possible targets, we recruited a set of relevant stakeholders and carried out the fieldwork in the period 6th-22nd of February.

The tools used were that of the individual semi-structured interviews (module B1, see Annex 1 for the language translation of the guideline) and the document analysis (module B2, see Annex 2 for a summary of the coding and analysis procedures). In the period 6th-22nd of February 2012, we conducted 9 semi-structured interviews with relevant local stakeholders.

Interviewee	**Date of interview**	**Tool (face-to-face/Skype)**
1. EC, Independent journalist	06-12-12 10:10	f-t-f
2. ML, Science museum director	06-02-12 14:30	f-t-f
3. ON, Local section of an international environmental NGO president	07-02-12 09:30	f-t-f
4. LB, Provincial directory director	07-02-12 15:00	f-t-f
5. DM, Public local agency press officer	15-02-12 12:00	Skype
6. MN, University and Research Department director	16-02-12 10:30	f-t-f
7. FM, Research institute director	16-02-12 12:30	f-t-f
8. MB, Project coordinator	22-02-12 17:00	Skype
9. AP, Province Public Works, Environment, and Transports vice-president and councillor	16-02-12 14:30	f-t-f

Table 1. Pilot study: the Political Sphere interviewees

Given the availability of previous visitor studies at the local museum of sciences and a preliminary study conducted by the museum itself to prepare the opening of the new science centre, we were able to collect valuable information about the Public Sphere.

	Science centres and museums	**Science events**	**Science cities**
Public			
Political Sphere (local/regional/cities)			
Actors			

Table 2. Dimensions and levels of research

The recruitment and the search for documents were facilitated by the people at the museum of science (AC, responsible for the international affaires, and ML, director and interviewee himself).

We wish to make two major comments regarding the recruitment are: the extreme kindness, the genuine interests taken in the research and availability of the interviewees and their staffs in fixing the appointments for the face-to-face (and skype) interviews –probably due to the time of the year where not many events are going on; and the difficulty of reaching the city by the interviewer because of the exceptional snowfalls in the centre of the country. The latter also introduced an emotional factor (trains blocked, following delays, moving of dates, etc.) and facilitated the flexibility of the interviewees in being available for spending a considerable time for the interview (the difficulty of the interviewer in getting the place took even a warmer hospitality). We wish to thank our colleagues in the city for the kind and very constructive collaboration on this part of the research on Impacts of SCIP within the PLACES project WP6.

The duration of the interviews, in fact, is in average about 1hour and 15 minutes. As far as the document analysis is concerned, we took into account:

Documents Type 1:

- Museum of sciences statute (reference 1)
- Scientific institution financed by the province statute 1 (reference 2)
- Scientific institution financed by the province statute 2 (reference 3)
- Provincial law March, 9th, 2010, n. 5: the province for the protection of the climate (reference 4)

Documents Type 2:

- Evaluation of the impact of the activities promoted by the two scientific institutions on the provincial system in the period 2005-2007 with particular reference to the provisions of the 2007-2008 planning and financial agreements signed with the province. (reference 5)
- Book about the science, technology and public opinion in the province. By the department of Humanities of the local university. (reference 6)
- Book about the impact perception of the scientific research in the province. By the statistical service of the province. (reference 7)

Sources of information on visitor studies (Public Sphere):

- Book about the science between the local and global provincial museum on natural sciences. Master Thesis, International School for Advanced Studies. (reference 8)
- Science museum evaluation research, to be presented at PCST 2012. (reference 9)
- Book on exploring visitor's opinion at the science museum of the province to evaluate a gallery about sustainability. (reference 10)
- Website to launch the science museum of the province and research on public perception of hot topics in science, technology and environment. (reference 11)

Results

Social and economic impacts of SCIPs in the province

Since the very beginning of the interviews and the selection of the document related to the SCIPs in the province, the dimension of the investments in certain research fields, research policies and science communication activities appear strictly intertwined. Indeed, the province's investment in research and in its communication focuses mainly on the topics of sustainability (ecology, nature, mountain environment) and technology. Main actors in terms of communication production are the museum of science, the university the city, and other institutions as the province agency for the environmental protection, the research institutes financed by the province.

> *Direct effects of local SCIPs are on communicators. The museum passed from 25 people to 120 in the last 15 years. Now we are working on the privatization of many communication activities. In this sense, the public funds were used productively, to foster connection with the private sector. In terms of indirect incomes, we strongly contributed to build a culture of sustainability, which has now become an industry in our province.* (ML, Science museum director).

> *Indeed, it is relevant if we think of the topic of sustainability: there is a real productive chain touching the communication of this topic to the local industries working, for example, in the wood market.* (AP, Province Public Works, Environment, and Transports vice-president and councillor)

> *The university and the science museum established the Plan Agreement 2010-2013, which stated the importance of the communication of science and technology and confirmed the museum as the main actor in the SCIPs in the region.* (MN, University and Research Department director)

Main sources of funds are public, while the bank foundations have an important but minor role in comparison to the province; private companies do not seem to have a real interest in communication (as communication of scientific and technological culture intended in PLACES) yet.

> *Main supporters are the bank foundations, which periodically bring out calls to finance cultural projects. But nothing in the private sector can compete with the public money coming from the province. (*ML, Science museum director*)*

Concerning the future of the local SCIPs, the sector of S&T communication and new forms of public/private interaction seem promising in the near future, with the opening of the new science museum (see the introduction of this report) and a general growing culture in this sector, especially in the green economy field.

*I believe these professions will grow in the future, linked to the attention of sustainability and sustainable tourism of the province. In the industrial field, most important example is the consortium of small local industries working in the green building field. (*AP, Province Public Works, Environment, and Transports vice-president and councillor*)*

*Every scientific institution invested in a communication office recently. At the foundation, for example, they even split the press office from the multimedia centre. (*EC, Independent journalist*)*

The science museum project is the main infrastructure. What is expected in the future, moreover, is an important investment in optical fibre: this is the real infrastructure needed to spread the scientific and technological culture. (DM, Public local agency press officer)

Quality of life

This section was centred on the topics of the impacts of: local media, public participation and the role of science communication activities in creating a local cultural identity.

The interviews took to relevant results on all the three aspects.

Local media

Local media plays a central role in building the local culture of science and technology, above all in respect of the main topics of environment and health. As well as, they are central in disseminating and making popular the results of the local research institutions. Moreover, local media influence the public opinion especially in controversies, leading the debates and the decision making.

Very people they use the information to take a position in the debate, but without really knowing. A local example is the import of the Slovenian bear (ON, Local section of an international environmental NGO president)

We live in a place with a high concentration of media and one of the highest levels of literacy in the country. We have 3 local TVs, 15 radio stations, 3 local newspapers… this also means loss of resources… without the public funds all these media couldn't survive. The topics more relevant in terms of interest of the communicators and the public are health and environment, topic which will be even more pressing in the future. (DM, Public local agency press officer)

Differently from years ago, scientists are getting down from the ivory tower. And even the people here, people from the mountains, they have children and grandchildren who studied and became researchers. The local research centres are starting to go down from the hills where they were segregated for years. The local media are a mirror of it: every time we have an important guest in our scientific institutions, every time our scientists ask for a patent, it is reported on the

local newspapers and the news starts to spread out. All this starts to be part of the local knowledge. (ML, Science museum director)

Public participation

On this issue, main topic is confirmed to be sustainability.

The public opinion is more and more sensitive to S&T and environmental issues. Same for the media. And I'm sure it will grow in the future because the big topic of uncertainty is strictly connected to it. The quality of the environment where we live will become more and more important. We already started to invest in public participation events. (AP, Province Public Works, Environment, and Transports vice-president and councillor)

On the environmental issues, the local identity plays a big role: people are very sensitive. Our land means nature. It is also pride. When we organize evening conferences on the local fauna and flora, people come to listen to them. Numbers are not huge, but when we have 70-80 people, the 1% of the population who can take decisions in terms of voting and consuming, we are happy. 100 people mean a success. (ON, Local section of an international environmental NGO president)

In this context, it has to be specified that the city hosts two major festivals at national levels, strong competitors in terms of communication events (participation, also from outside the region) is very high.

Public perception of present and future the museum of science

Back to the participation to the science communication activities, the museum of science counts on 120.000-130.000 visitors per year. Considered as effective examples of the public participation and interest to science communication activities, we can take the recent evaluation of the new permanent exhibition areas of the museum of science (Annex 3 of this document, n. 3.1). The results, collected at the end of year 2009, show the characteristics of the public in detail, their judgement on the permanent exhibition and their suggestion for the future museum of science (opening in 2013). Main public are families (187 on 239, with an average age of 30, with a high education level–high school). The evaluation of the halls goes up and down according to the topic and the medium (in general, a part from the topic, the way they are communicated is the main reason of a positive judgment).

Core public are the schools of all grades and with the main aim to complement the curricula. Regarding the expectation on the future science centre, 11 in-depth interviews were carried out with teachers, students and other visitors, part of the "general public". Above all in this qualitative part of the research, it is evident how the link between the local and global dimension, central in the projecting phase of the new large space of the science centre dedicated to the sustainability and the relation science-society-nature, is fundamental in the

perception and the expectations of the citizens.

On the other side, the reason why to choose the science museum is based on the wish to have an interesting experience matching “leisure”, “scientific curiosity”, in “good company”.

All the results collected through this work are complementary to the survey that is a large research-action started by the science museum to collect the opinions of the citizens of the province, their wishes, and the state of their knowledge on the work in progress of the new science centre. A fully public participation method is undertaken to adapt the opinion of the citizens to the projecting phase of the whole communication project and, at the same time, to make its future customers loyal.

Cultural identity

Linked to these results, is the opinion of the interviewees participating at the PLACES “Module B1” about the cultural identity of citizens in the province. This is considered as a developing issue, above all regarding the topic of sustainability. Citizens are more and more aware to be part of a local society when the research institutes and the university are important actors. They look at the local research with a double perception of the risks taken by the technoscience advancements (pollution and contamination of the natural environment) and the opportunities given by it.

On the other side, still, this identity is based on the awareness of being part of an efficient system more than on the knowledge of what local researcher do in their labs.

> *Our land is the citizenship, the inner landscape. If with innovation we mean the introduction of best practices in favour of the quality of the environment, in this sense citizens are part of an innovation society and the work of communication on sustainability strongly influences it… We have big research institutes here and they start to be better perceived by the population, fact that take them closer to an innovation society.* (AP, Province Public Works, Environment, and Transports vice-president and councillor)

> *Traditionally, people of the province are not used to give value to the projects born and developed in the region. They come from a land that is closed, because of geographical reasons. This awareness has a weight on the scientific citizenship, which is very locally oriented.* (DM, Public local agency press officer)

> *Citizens of the province do not perceive to be part of the innovation society, but of an efficient system. I give you an example: when I arrived at the centre for computational and system biology, some citizen of a small town where the science museum is located, came to make sure that scientists weren’t experimenting with animals.* (EC, Independent journalist)

Complementing these findings, the document analysis explored three main relevant documents on the perception of S&T issues in the province. Among them, we take here the research held by the province statistical service (2009) “The perception of the impact of the scientific research in the province”. The report presents the main results of a survey on the public perception of S&T topics and research activities/actors at a local level (telephone interviews) CATI on a sample of 806 people, stratified according to the gender, age –above 18– and geographical area.

Citizens show how the perception of the local scientific research is mainly positive: in a public system where the quality of life and the public services are evaluated better in comparison to in the rest of the country, the scientific research demonstrates to be an important aspect of the territory. People believe that its quality is higher that in the rest of the country, and that the provincial administration efficiently allocates the funds in its favour.

On the other side, people still demonstrate to have a scarce knowledge of which are the local research institutes (65% is not able to mention any research institute name and most of the people is able to remember only one name).

Policies

As far as the local policies on science communication are concerned, in our case study the answers are rich, strictly connected with the topic of sustainability and with the necessity to give value to the local research as the engine for the growth and the wellness of the whole community.

In this section, three main topics are explored: the importance of the local culture of science and technology, the involvement of non-expert, researchers and experts in decision making processes, and the actual and potential effectiveness of the policies.

About the first issue, importance of the local culture of science and technology, it is clear how the public support to SC activities is fundamental and revealed the strong role of the public administration in financing and coordinating most of the S&T and S&T communication activities in the city. In this respect, the case of this city represents an interesting and unique match of research and communication policies in the country.

> *We do not have big industries financing the research; the province has to play a kind of orthopaedic function. In the future, instead, it will decrease and the private contribution will grow.* (AP, Province Public Works, Environment, and Transports vice-president and councillor)

> *The local institutions have a role from a political point of view. The history of this place tells also about the investments in research. Here the slogan of basing the*

economy on the knowledge has a substance, in the university, in the two big foundations. The university in itself was born from a provincial institute. All the public schools are not depending from the national central state, but from the province… (MN, University and Research Department director)

A local scientific and technological culture is close to come. It is not the result of some unapproachable genius… we are province-dependent and this is a problem and an advantage. We have one of the highest rates of public investments in research, but of the lowest for private ones. To work in communication means for me to reduce this gap. (DM, Public local agency press officer)

About the involvement of experts, experiences of participation of the researches in the research policy are controversial, while a more and more vivid awareness of the necessity to be part of a complex and demanding knowledge society is entering their mentality:

It is sure that researchers nowadays are more aware of the necessity to justify their presence in the scientific institutions were they work and their work. University professors and high level officers in scientific institution are strongly connected with the local decision making processes. This is positive because if they fail, they can just blame themselves. (ML, Science museum director)

*I'm working at the university and research and we started reflecting and experimenting on a wider involvement of the researchers in the decision making, but still much has to be done: researchers are still not able to be fully effective in terms of self-government. (*MN, University and Research Department director*)*

Researchers are more and more aware that they have to look for funds by them selves and that they have to communicate. (EC, Independent journalist)

Here they listen to what a scientific consultant says much more than in other places in the country. (FM, Research institute director)

About the involvement of non-experts, it returns the leitmotiv of the environmental issue, as the main reason for the citizens to be active:

The public opinion is more and more aware –and worried– about environmental issues; they ask for more and more political answers, but they also found ways of self-government, as with the constitution of consumers groups to buy photovoltaic panels. Following this private initiative, we established financing facilities to support the purchase of the panels. (AP, Province Public Works, Environment, and Transports vice-president and councillor)

If a controversy explodes on the local newspapers, the reply of the administrators and the stakeholders is immediate. This works very well with the environmental issues at stake. (DM, Public local agency press officer)

I'm not able to think of any direct influence of the common citizens to policies related to S&T. More influence, even not direct, is in environmental issues. It seems as we completely trust in our administrators. (ML, Science museum director)

Regarding the actual and potential effectiveness of the policies, only the respondents closer to the high decision-making position were able to answer, with a general opinion of promising developments of the present investments in the future SCIPs.

Central importance in this case has the document analysis, especially in the case of the law and the statutes of the local scientific institutions.

Recently the province stated a quite unique local law (see Annex 2, 1.4 2010), that provides a frame aimed to develop a local sustainable economy, agriculture, tourism, and also to communicate to the citizen: "… The network monitoring the climate is based on locally based focal points. The network promotes the local climate observatory with the aim to develop the knowledge on the evolution of climate phenomena. And also to communicate and disseminate it involving other competent entities" (art. 5).

As well as the scientific institutes and of course the main actor in science communication on the territory, the science museum, declare their communicative mission in their statutes (see Annex 2, 1.1-1.3 2012). The analysis of the statutes affirm the commitment of the province (which, we remind, is the main financer of the research institutes and the museum) to base their communication policy merging technological innovation and ecology.

Education

In general, the possibility of answering the questions of this section implies a quite specific knowledge in the educational field. In our experience, this can be obtained for the science museums/science events representatives and directors of local schools. In this city case, they were a very tiny part of the total of the interviewees: 2 out of 9. Therefore, we strongly recommend to include, and to make it explicit in the guideline for the recruitment, a reasonable number of people able to argument about local schools and university.

> *I can say that we the interaction between NGO and local schools is more and more requested. This is a very positive sign in the national culture, usually oriented to develop knowledge of the classic and underestimating the knowledge of the environment.* (ON, Local section of an international environmental NGO president)

Regarding the other information collected in this section, and on Q.4B (Have scientific laboratories or technological firms opened their doors to the public?), the scientific institutes with public funds seem to be more careful on the educational activities:

> *There is a relevant increase in the participation of researchers to school activities. Beside the museum, there are many more activities compared to even few years ago.* (ML, Science museum director)

Finally, we didn't get relevant data about Q.4C (about the production of new educational material: DVDs, shows, games or something of that kind been produced through science in society or science communication activities) and Q.4D (new positions in academia in the field of science communication).

Conclusions

As far as the pilot study is concerned, main results are:

The local vocation towards environmental and sustainability topics, that lead the political decisions and orient the communication of the scientific and technological culture.

- The role of the public body (the province) as leader in orienting the SCIPs.
- The role of the museum of science as the main actor in the local communication, dissemination and participation of STS (science, technology and sustainability) issues.
- The relatively good collaboration among different actors in the field of the scientific research (university, scientific institutes, museum).
- The importance of the local media as leaders in influencing the opinions of the citizens.

Reflecting on the local SCIPs and the issues of public financing both the local research and the communication of technoscience, let us think of discussing the opportunity to include the city among the “city of science”, though there isn’t any formal status or even proposal on this issue at the moment.

This finding derives from the results of the case study using the tools offered by the kit, from the great availability of documents (and therefore local science communication activities), and from the definition of science-city shared by the researchers of PLACES:

Science city can also be understood as the creation of city in which scientific research, high-tech industry and high-quality living are all brought together in an organised relationship (reference 12); or as a new settlement which is generally planned and built by governments, aiming to generate scientific excellence and synergistic research activities by concentrating a critical mass of research organisations and scientists within a high-quality urban space (reference 12).

Taken as a main driver for the political and economical decisions in the province, sustainability influences not just the local SCIP, but also the idea to create a place where “scientific research, high-tech industry and high-quality living are all brought together in an organised relationship” (the law about the province for the climate, the investments on a green industry told by the respondents and available through the document analysis, the constitution of a new science centre based on the concept of sustainability, the local vocation of communication on the natural resources clearly integrate in this sense).

For this reason, this case study can give a contribution in the definition of a “city of scientific culture”, as one of the objectives of the PLACES project is to define the concept and the operational definition of it.

Regarding the toolkit, as more interviews and documents were collected the richer and more nuanced the panorama of the SCIPs activities in the province became, it became ever more complicated to contain the topic inside the cells of the grid established in the introduction (dividing among “dimensions” and “levels”) to frame the whole evaluation process of PLACES.

About the tools tested (module B1 and B2), main conclusion is their usefulness of to frame the right context where to set the whole evaluation process.

As far as the particular case we studied is concerned, the two crucial and more difficult topics to face during the interviews were that of the “policy” session: the public participation and the decision making processes. These are the fields where “political” issues play a major role and different points of view emerge and contrast. Great importance, in this case, had to ask about examples and documents available.

In our case study in particular, exploring the SCIPs in a relatively small reality as the city, and through its main stakeholders, offered the unique chance to collect information about the fundamental mechanism at the base of the SCIPs.

For this reason, we consider this part of the toolkit essential not just to describe the progress of the present SCIPs and access/evaluate them, but also as an “explorative” phase, to deepen before and while planning SCIPs.

Recommendations

Two different types of recommendations derive from this city pilot study: on one side the recommendation regarding the local SCIPs, suitable to the local research institutes, policy makers and communicators; on the other side the recommendation regarding the evaluation tool tested in this study (module B1 and B2).

On the first side, the present analysis offers a valuable range of information and suggests the usefulness to better frame the local SCIPs in order to continue the positive trend reported by the respondents. This could start, for example, producing a more complete map of local science communication activities, so to better coordinate/differentiate them.

A further suggestion is to improve the communication via web 2.0: despite structural investments are foreseen to implement the possibility of connection to the internet (optical fibre), and despite the province is an advanced example of use of the web compared to other national regions, still the e-science communication have large possibilities to develop.

On the second side, besides the comments on the parts of the toolkit tested and the suggestions how to possibly change them –already reported above (see Results) –, there are two main evidences that we would stress for the future users:

- The importance to build a context before the interviews take place, paying attention to integrate the different phases of the evaluation process document analysis and the semi-structured interviews in between/afterwards
- The fact that the content and the quality of data can change enormously depending on the interviewees, without the chance and the need –as for the studies on the public (module A)– to obtain an average. This phase of the evaluation, when chosen among the different tools offered by the PLACES toolkit, offers the big chance to describe and enlarge the field of knowledge on local SCIPs.

For this reason, during the recruitment, we recommend to ensuring the participation by respondents from different fields and institutions and, eventually, to ask the interviewees who are not experts of some areas covered by the guideline to suggest other possible and suitable participants.

About the document analysis, we conclude that the web research should be carried out at the very beginning of the evaluation process, as a general frame were to locate the further information and to make sure that all the document and

interviewees are pertinent.

Furthermore, the document of Type 1 analysis should be better differentiated from that of Type 2, and a sounder coding frame should be formulated for future users.

Recommendation on the evaluation tool (module B1-B2)

Being basically focused on the economical aspect (more than on the social one), the document analysis did not take relevant results to complement the answers of this section. For this reason, we recommend to systematically collect data on economic aspect in some other formal way if that it considered to be of importance for the case studies (in this respect, it would be more useful to ask the administrative team of science museum/events for some focused information).

As far as the assessment of the PLACES evaluation tool is concerned, we suggested some changes in the guideline, namely:

- To move this section more further in the guideline
- To change Q.1A (see annex 1), broadening it (e.g. changing with "what are the main economic impact of SCIPs at the local level")
- To specify the interviewer to take into consideration the results of the document analysis while (especially Q.1C, Q1A, etc., with data coming from the chamber of commerce or similar entities, able to precisely provide information about the topic).

Recommendation on the evaluation tool (module B1-B2)

In terms of the assessment of the guideline (module B1), the introduction of this section does not immediately clarify the first question regarding the impact on the media. For this reason, we suggest to exchange Q.2A with Q.2B. Furthermore:

- Q.2A - people not directly connected with a profession in communication tend to understand it as if the local media have an impact on the SCIPs. Later, asking the rest of the question "Do you think that the local media have become more sensitive to science and technology?" makes it clearer. It would be much better to just ask: "Do you think that the local media have become more sensitive to science and technology?", and later asking about the future.
- Q.2B - We suggest specifying here, for the advantage of the interviewer, the first part of it ("What about public participation?") as mandatory, and the rest only if necessary to complete the information.

Overall, indirectly from the participants' answers, more than "Quality of life" this session could be called "SCIPs social impacts".

About module B2, the description of the work of the researcher using the toll should be more detailed and should show examples of documents and website codification and analysis.

Recommendation on the evaluation tool (module B1):

Q.3A - These questions sounded too generic after introducing the issue of policy in S&T communication. We suggest moving it to the end of the section, after Q.3G, as a completion more than an introduction.

Q.3C - We would introduce this question asking: “Do the university, research institutes, industry or companies S&T-related actively enter the local life?”, and we would keep the next questions for later:

- If, when and how they influence the decision making processes
- How science communication has changed this and will possibly change it in the future.

These changes would facilitate the answers by the respondents not directly involved in science communication activities, but the opinion of whom is valuable to enrich the frame around SCIPs and the decision making processes on S&T. This question could be deepening adding as next: “How would you address participative initiatives among stakeholders in [name of the location]?”

Q.3E - Respondents tend to understand it as Q.1E (Have any new forms of public/private interaction come about through science communication activities and events?). Therefore, we suggest changing the question in this way: “We have talked about the interaction between public and private sectors before. Focusing on Science communication activities, can you think of an example when new partnerships between local institutions or businesses were created?”

Through the results of our case study, we realized that, except for stakeholders directly involved in science communication, respondents tend to answer about the link between local institutions and businesses in general.

Recommendation on the evaluation tool (module B1)

We suggest exchanging Q.4A with Q.4C as Q.4B and C are more generic.

Furthermore, we suggest turning Q.4B in this way: Are the local scientific institution open to participate in the school life of (the relevant place)? And, later, if not deepen by the respondents: What are the main activities they organize/take part of? And conclude with the question about the future.

Finally, instead of the present Q.4C, we could ask, if there is an academic interest in the local university in disciplines related to science communication and science-in-society. Also in this case, anyway, we could look for this information

during the document analysis (i.e. surfing the local university website), which revealed more useful findings in our research.

References

Documents Type 1.

1. Museum of sciences statute
2. Scientific institution financed by the province statute 1
3. Scientific institution financed by the province statute 2
4. Provincial law March, 9th, 2010, n. 5: the province for the protection of the climate

Documents Type 2.

5. Here the author refers to a book about the evaluation of the impact of the activities promoted by the two scientific institutions on the provincial system in the period 2005-2007 with particular reference to the provisions of the 2007-2008 planning and financial agreements signed with the province 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.
6. Here the author refers to a book about the science, technology and public opinion in the province 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.
7. Here the author refers to a book about the impact perception of the scientific research in the province 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.

Sources of information on visitor studies (Public Sphere):

8. Here the author refers to a book about the science between the local and global museum on natural sciences of the province 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.
9. Here the author refers to a report on science museum evaluation research of the province 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.

10. Here the author refers to a book on exploring visitor's opinion at the science museum of the province 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.
11. Here the author refers to a website to launch the science museum of the province where this case study was performed and research on public perception of hot topics in science, technology and environment. 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.

General sources:

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