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Living Knowledge

International Journal of Community Based Research

Environment and Participation

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- The "Dialogue on Nanoscience and Nanotechnology" Project
- Promoting Participative Environmental Planning
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Living Knowledge
The International Science Shop Network

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Editorial

Looking back at 2006, it was a good year for Science Shops in the context of international cooperation. The Science Shop call the European Commission launched in early 2006 lead to 66 proposals of which 27 passed the evaluation thresholds. A pity, that only 1 M Euro were available in the overall budget and only a few projects can be financed. Nevertheless the call proved a large demand from civil society and Science Shops for such kind of financing. Luckily cooperatives of Science Shops have been successful in getting grants from different resources than this specific call

But it wasn't only a good year in the context of international projects. The Science Shop idea grew roots in many countries where Science Shops or similar organisations haven't been active or visible yet. The EC funded project TRAMS still supports the establishment of Science Shops in France, Romania, Greece, Spain, Iceland, Latvia, Estonia, Turkey and Belgium. A Science Shop summer school not only attracted TRAMS partners but also drew attention to the model in Hungary, Portugal, Italy, China, Japan, New Zealand and the United States and Canada. There now are Science Shops and national networks in Italy and Belgium, there was a Science Shop funding success in Wales and Canada and only a few days ago the first Science Shop in China opened its doors. And ... six years ago we did not know of each other!

The next event is coming very soon. At the end of August 2007 the third Living Knowledge Conference is intended to be held in Paris, France. So join this conference, share your experience and get access to a huge variety of specialists.

I hope you haven't been too stressed in the run-up to Christmas and would like to take the opportunity to wish you all the very best for 2007. I hope you all found the time to relax, despite all the hectic activities usually linked to the old years closure. Don't forget to keep some energy for the New Year's Science Shop activities.

Keep on contributing!
Yours sincerely
Norbert Steinhaus

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The next printed issue of *Living Knowledge – International Journal of Community Based Research* will be published in October 2007. Information about coming online editions and the editorial guidelines can be found at the homepage of the Science Shop network (www.livingknowledge.org).The magazine (print and online) welcomes the contribution of reports, articles, news, press releases and clippings, letters, contribution to discussions, job offers, internships, internet links etc. Reports and detailed articles should follow the editorial guidelines. Please feel free to contact the editors for your questions and any support.

Riga, LV

NGO Research Needs Survey in Latvia

The Baltic Institute of Social Sciences has finished the NGO Research Needs Survey in Latvia. The survey was conducted in spring 2006 jointly by the BISS and the sociology students of University of Latvia Faculty of Social Sciences, and was a part of TRAMS (Training and Mentoring of Science Shops) project.

The aim of the needs survey was to evaluate the interest of the active NGOs in cooperation with scientists and to identify the areas of interest for scientific information and research NGOs have. One of the methods used to obtain information was a survey questionnaire distributed by e-mail, in which organisations could tell about the cases they experienced lack of scientific information and about their research needs. Expert interviews with representatives of some of the organisations responding to the survey were also applied to get a more in-depth view. Non governmental sector in Latvia, as previous research points out, is not very developed, although gaining strength rapidly. During the period the Research Needs survey was carried out, NGOs in Latvia, especially in some regions, were difficult to reach via Internet and other means of communication because changes in legislation and lack of contact information of NGOs. About 400 NGOs that had an e-mail address were contacted. 100 organisations responded.

The survey results reveal that the NGOs having participated in the survey are interested in cooperation with researchers and their interests are mainly concentrated in the field of social sciences. Organizations express interest in both social research projects and secondary analysis of documents and statistics. The survey results also indicate several problems in accessibility of statistical data and research results to the non-governmental sector. Some of the responding organisations have also difficulties to formulate their research interests, and they only admit they would benefit from research. The results of the Research Needs survey indicate that Science Shops could be beneficial form of cooperation between the researchers and non-governmental sector, though the initiative should first come from the researchers' side.

A database on the research interests and needs of the NGOs surveyed was created, and is available on-line for students and other interested parties.

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Stockholm, S

What do Swedes think of Researchers and Scientists?

The latest opinion study from the Swedish organisation Vetenskap & Allmänhet reveals some surprising results. Nearly a quarter of Swedes, 23% consider astrology to be scientific. Fourteen per cent consider that Intelligent Design is a scientific subject. At the same time, more than half dismiss these as completely unscientific. This is one result of a new opinion study from the Swedish organisation Vetenskap & Allmänhet, VA (Public and Science). VA has carried out an annual survey on the public's attitude to science and researchers since 2002. The aim is to gain knowledge of the public's thoughts and attitudes as well as to monitor trends and changes in these attitudes – in other words to act as a science barometer. The most important conclusions from the 2006 study are:

- A large and stable majority consider that scientific and technological developments have made life better for ordinary people
- The public has high trust in researchers, but this trust is diminishing.
- An increasing proportion believes that science and technology are too hard to understand, reversing the trend of previous years.

- 90% have great confidence in the potential of research to develop more effective and environmentally friendly sources of energy.
- 70% believe that there is a strong possibility that research can contribute to increased economic growth. This shows a marked increase since 2005.
- 60% believe that there is a strong possibility that research can contribute to reducing climate change. This is a significant increase since 2003.
- An increasing number of people, now over 80%, want research into gene technology for the treatment of diseases to be supported.
- Medicine holds its position as the area considered most scientific by the general public.
- 90% believe that research results should be confirmed by further investigations before being presented to the public. It is an increase on the previous year.
- A stable two-thirds majority think that too many alarmist reports are published.

Contact: Karin Hermansson, Research Manager at VA, karin@v-a.se, tel. +46 8 611 3047, www.v-a.se.

Network

Science Shop Call

The European Commission published a pilot call for proposals („Science and Society 20") specifically devoted to the financing of Science Shops projects. This call for proposals has been very successful: the Commission received 66 proposals. These have been evaluated during the summer by a group of independent experts. 27 of these proposals passed the evaluation thresholds and were considered worth to be financed. However, the available budget for this pilot call was just 1M Euro and therefore just a few projects will finally be financed and will start in January. The pilot call proved a large demand and interest from the civil society and the Science Shops (and similar organisations) for such a kind of financing. Specific information on the financed projects will be available in January 2007.

Bonn, D

Scientific Understanding at Schools

The Bonn Science Shop and the University of Applied Sciences Höxter from Germany, Intermediu Bucharest and Intermediu Bacau from Romania and the Institute of Environmental and Landscape Management (ESSRG) from Gödöllo, Hungary, recently started an EU funded project on the development of further vocational training for child minder and teachers at primary schools called EFSUPS – Exploring the ground. Fostering Scientific Understanding in Primary Schools. This two year project is funded within in the Science education and careers 2005 call (FP6-2005-Science-and-society-16).

Contact: Norbert Steinhaus, norbert.steinhaus@wilabonn.de

Victoria, CA

Office of CBR

The University of Victoria, Canada, is strongly committed to civic engagement and to partnering with communities to develop collaborative solutions to some of the most challenging issues of our times. The university offers an unrivalled combination of: one of Canada's broadest and most active sets of community-based research initiatives, one of the country's largest experiential learning programs providing real-life experiences for its students, and an extensive and innovative continuing education program. UVic is establishing an Office of Community-Based Research that will build on the university's existing strengths in civic engagement by co-coordinating and encouraging research partnerships with the community that will:

- create new opportunities for collaborative research on issues that matter to communities
- provide strong evidence-based recommendations for public policies, programs and practices to meet community needs
- enhance the quality of life and the economic, environmental and social well-being of communities.

The new office will open in early 2007,**Contact** Budd Hall, Director, Office of Community-Based Research, bhall@uvic.ca

Brussels, B

Science Shops in Belgium

Thanks to the support of the Flemish authorities a network of university based Science Shops in Flanders has been created. The Belgian network of Science Shops consists of a central contact point, Wetenschapswinkel.be, and regional university based Science Shops: at the Universities

of Antwerpen, Brussels, Gent, Hasselt, Leuven and one at the Katholieke Universiteit Brussel.

The central contact point is managed by the Vrije Universiteit Brussel. One of the tasks of this central contact point is to create a database which consists all the Science Shop topics of Flanders. The main benefit of working with a central unit is that with a minimum of costs it is tried to give a maximum service to the non-profit organizations and to our new coming Science Shops. The regional Science Shop employee acts as a mediator between the organization who ordered the research, the student researcher and/or the expert.

Contact: Sofie Van Den Bossche, Tel. +32 (0)2 629 2224, info@wetenschapswinkel.be, www.scienceshops.be

Glamorgan, UK

Science Shop Funding Success in Wales

The Higher Education Funding Council of Wales (HEFCW) has awarded the Centre for Astronomy and Science Education (CASE) at the University of Glamorgan £750K over two years to set up a network of Science Shops in south-east Wales. They warn in advance that they will be counting on advice and expertise to help them make this exciting new venture a success! More details will be available as their plans become more concrete.

Contact: Steven Robert Harris, University of Glamorgan, Centre for Astronomy and Science Education, 4 Forest Grove, Wales, UK. CF37 1DL, srharris@glam.ac.uk

Rome, I

Laboratorio Univesità Città

Recently the Dipartimento Interateneo di Pianificazione Territoriale e Urbanstica (DIPTU), Università di Roma "La Sapienza"decided to formalise an effective transfer of scientific knowledge to community action groups as far as planning processes are concerned by the establishment of a Science Shop called "Laboratorio Univesità Città" (LUC). The shop can rely on a part time assistant and the collaboration of many members of the Department. A specific section on the Department's web site will be created soon. For the future it is intended to extend the shop's activity from planning to other fields.

Contact: Paolo Scattoni, Science Shop Coordinator LUC, paolo.scattoni@UNIROMA1.IT

In addition, all Italian shoppers' are invited to participate in an Italian network ITSN (Italian Science Shop Network). Important objective of a national network is to strengthen the position of a community based and participatory research approach towards local, regional and national decision makers as well as to introduce Science Shops to other research bodies. Moreover it is intended to organize a workshop on Science Shops in Ispra, Italy, giving existing shops, interested new shoppers and decision makers the opportunity to share information and experiences in the Italian setting.

Contact: Michael Veith, info@science-shop.org

Shanghai, CN

First Science Shop in China

The Opening Ceremony for Shanghai Undergraduate Volunteer Service Organization for Science Popularization (Science Shop) of East China Normal University (ECNU) was held in ECNU on Nov.28, 2006, which declared China's first Undergraduate Volunteer Service Organization for Science Popularization in Shanghai open. On the ceremony, the ECNU Science Shop signed cooperation contracts with three neighborhood groups and cities as three experimental units for the Science Shop operation. Meanwhile, for citizen's convenience, the website of ECNU Science Shop was established to provide a platform for online communication. In order to encourage more undergraduates to participate in Science Shop projects, the university will give the validated participators 'innovation credit hour', which can be countered into undergraduate course credit hours. The university wants to set up an active science popularization group through the Science Shop, which can encourage and help communities to do research works and popularize science knowledge, bring up students' practice and innovative capability, and raise their social responsibility.

The different units design projects in research, consultation and training according to their professional characteristic and social requirement, such as: Finance Consultation, Children Development & Education, Green Life Service, Green Home Service, Legal Aid, Social Work, Digital Product Service, Mental Health Service and

Constitution & Health Test and Consultation

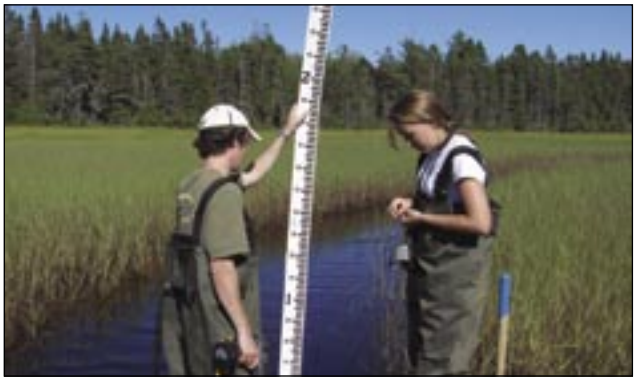
Contact: Stephen Xie (JING XIE), Director, stephen_xiejing@hotmail.com or stephen_xj@siyst.org.cn, www.scienceshop.ecnu.cn (available in English soon.)

Halifax, CA

The Community-Based Environmental Monitoring Network

by Catherine Conrad, Saint Mary's University; Halifax, Canada

This paper describes the Community-Based Environmental Monitoring Network (www.envnetwork.smu.ca) and issues related to environmental education experiences between academia and community based stewardship groups in the Atlantic provinces. Community-based ecological monitoring in Nova Scotia is discussed, with an emphasis on watershed stewardship groups.



What is Community-Based Monitoring?

Community-based monitoring is "a process where concerned citizens, government agencies, industry, academia, community groups, and local institutions collaborate to monitor, track, and respond to issues of common community concern" (Whitelaw et al., 2003, p.410). The current increase in volunteer and community environmental monitoring is in part the consequence of a reduction in funding for the environment by governments. Given the importance of informed environmental stewards, the ability to have access to environmental monitoring methods and technology is critical. While the scientific literature indicates that community watershed groups have the ability to generate data of adequate accuracy and precision, this can only be achieved with sufficient resources, through the use of standardised protocols, and use of Quality Assurance/Quality Control (QA/QC) procedures. There are a diversity of mandates among CBM initiatives, including education, the establishment of states of the environment, determining background levels against which future impacts can be compared, and habitat restoration. Citizens can gather monitoring information to produce long-term data sets that help them understand environmental change and possibly lead to influencing local planning and decision-making (Pollock & Whitelaw, 2005). Regardless of the specific mandate, they all tend to have the hope that their efforts will be utilized to assist in local decision making. Further proliferation of volunteer monitoring groups will undoubtedly influence environmental protection, stewardship and rehabilitation in North America (Savan et al. 2003). Constraints to CBM include data fragmentation, loss of interest by volunteers, inconsistent funding, data inaccuracy due to lack of standardized methods, quality control and participant objectivity (Stokes et al., 1990; Sharpe & Conrad, 2006). Community-based ecological monitoring programmes are on the rise (Spellerberg 2005) and with this expansion, there is a greater likelihood that they will generate data that will be used as a basis for decision-making. It is incumbent upon those with ecological monitoring expertise, to share their knowledge with the widest community possible, in order to address inevitable education and training implications.

Environmental Education: The Role of the Community-Based Environmental Monitoring Network

In 1999-2000, the author became a member of a local watershed group (the Sackville Rivers Association) and was amazed by the level of involvement and spectrum of environmental activities that this organization was involved in. As an academic, the author was perceived as someone with an "in", with access to knowledge and expertise. As monitoring efforts got underway and a program was being developed within this organization, it became quite evident that there were many stewardship organizations in the province of Nova Scotia and in the Maritime provinces in general, that would benefit from access to a variety of researchers in a University setting. It was also noted that stewardship groups would benefit from a formalized "network", where they could seek advice from one another on their environmental monitoring activities.

In Saint Mary's Academic Plan, it describes the university as being "… uniquely committed to service to the local, regional, national and international communities, a commitment which it realizes through outreach activities, community-based research programs, and contributions to life-long learning. Its reputation as an open and responsive educational institution has brought it a large measure of goodwill in the community." To this end, seed funding from the university was sought and provided to establish the Community-Based Environmental Monitoring Network (CBEMN). The CBEMN was established to further existing relationships with community groups and foster new ones. This Network, housed within the Department of Geography at the Saint Mary's University campus, serves as a location that members of the community can contact when they have a question about:

- How to monitor/measure the environmental quality of the ecosystems in their community (based on Environment Canada's Ecological Monitoring and Assessment (EMAN) Protocols.
- How to "access" scientific and social scientific data related to the environment.
- How to use these data and utilize technology as a tool to further their understanding of their communities.

The CBEMN serves as a source of information through direct contact with our office and through a mechanism for knowledge transfer across groups. In addition to the web site (www.envnetwork.smu.ca), newsletters are produced and training workshops are held. The Network takes a holistic and interdisciplinary ecosystem approach, advancing monitoring protocols that are aquatic, marine and terrestrial in scope.

The CBEMN is mutually beneficial to the University as well as the stewardship community. While helping the University to fulfill a component of the mandate of its Academic Plan, students have the opportunity to have applied, experiential learn-

ing experiences. Many students express an interest in learning while working on "real-world" problems. Since the creation of the CBEMN, students have worked on course work placements, through the Environmental Studies program, assisted stewardship groups in monitoring, through courses in the Geography Department and been employed through co-op work placements, through the Government of Nova Scotia's "Nova Scotia Youth Conservation Corps" program, and the Federal Government's Science Horizon's internship program. The environmental stewardship community is therefore able to access students and have work projects completed at no cost to their organization. As well, a large number of groups are able to take advantage of monitoring protocols, our monitoring "toolkit". To-date, over 100 groups from across the country have requested and received our monitoring toolkit.

One of the most widely utilized resources provided by the CBEMN is the "Equipment Bank". Through small grants from the TD Friends of the Environment and the Halifax Regional Municipality, as well as through donations of equipment from Environment Canada, and the Department of Fisheries and Oceans, the Equipment Bank was established. A wide variety of monitoring equipment is housed and maintained at the University and is loaned to groups at no expense to them. The benefits of this include the ability for groups to conduct monitoring with sophisticated equipment that they might otherwise not be able to afford, they are trained in the proper use of the equipment by students and staff at the CBEMN and they do not have to worry about annual maintenance, proper storage and calibration.

Examples of CBM: Experiences from the CBEMN

There is no precise count of how many stewardship and/or CBM groups are currently operating in Nova Scotia, but it is believed that the number is close to fifty. Most of the CBM groups in the Province engage in some sort of watershed monitoring, testing for variables such as pH, temperature, dissolved oxygen, salinity, macroinvertabrates, and various bacteria, while fewer undertake terrestrial or wildlife monitoring. Oddly, there are few marine monitoring programs being undertaken in the Province, even though most CBM groups are based on or near the coast. This is a function of the fact that Nova Scotia's Department of the Environment is not specifically mandated with protection of non-drinking watersheds, and therefore communities have assumed, by default, the concern and burden of understanding the state of their fresh water systems. Groups that are linked with the CBEMN have primarily been concerned and therefore engaged in freshwater monitoring. Their work is either baseline or in response to a perceived impact; with very little results and in-put in terms of integrating into the decision-making structure. Community watershed groups undertake water quality monitoring activities in more than 10 of Nova Scotia's watersheds. Since the early 1990's they have gathered in excess of 55 monitoring-years of water quality data at over 200 sampling sites.

Even though CBM is a relatively new phenomenon, there are still groups that have been involved in the monitoring of their environment for many years. The many groups that make up the landscape of CBM in Nova Scotia carry with them many different experiences and attitudes when it comes to CBM. It is difficult to gauge the success and effectiveness of such groups, especially when it comes to linkages to environmental management and decision-making (Conrad, in press). Regardless, one of the most acknowledged outcomes of community-based environmental monitoring programmes is environmental education (Spellerberg 2005).

There is a wide variety of type of monitoring that groups can undertake, from simple Nature Watch programs, through to more complex and long-term monitoring of their ecosystems and watersheds. Some groups are involved in a variety of types of monitoring and at a variety of scales. A notable example in Nova Scotia is the Clean Annapolis River Project (CARP), which is one of the Atlantic Coastal Action Plan (ACAP) sites, provided with core funding from

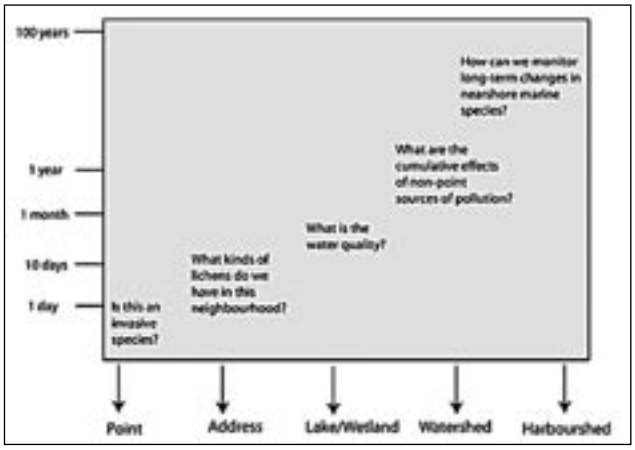


Figure 1: The scale and duration of a spectrum of monitoring questions posed by community-based environmental organizations.

Environment Canada. For those groups who are not provided with core funding from a government agency, it is particularly important that they have access to educational resources. Many groups that approach the CBEMN express an interest in doing multiple types of monitoring. Sometimes they have a very specific purpose in mind (i.e. they feel that a river in their community is polluted and want to verify this or not; they want to know if a species in their lake is native or an invasive) and sometimes they do not (i.e. they want to get an understanding of the "state of their environment").

Citizens in general are interested in learning more about their local environments on a variety of scales (Figure 1). The literature indicates this to also be the case elsewhere in Canada (i.e. Pollock and Whitelaw, 2005).

The importance of environmental stewards and volunteers filling in gaps of knowledge about our ecosystems should not be ignored, although many groups have recently expressed frustration regarding their inability to link their monitoring efforts to the management processes (Sharpe and Conrad 2006; Conrad, in press).

Conclusions

There are similar initiatives in Canada to the CBEMN. The Citizens Environment Watch (CEW) in Ontario is one example. While the CEW has established partnerships with many organizations to promote volunteer monitoring, the relationship with the University of Toronto is most central to their operations (Savan et al. 2003). This author also notes that as useful and beneficial as linkages between the environmental stewardship community and academia may be, there are a number of notable caveats.

Associations with university experts can undermine citizen confidence in their own ability to produce credible results, and academic

focus on peer-reviewed publications might influence the goals and focus of the monitoring work. Therefore some degree of autonomy is critical. The CBEMN does not drive the agenda of monitoring efforts. Groups approach us with their questions and we provide assistance and guidance. It is important to note, as the foundation of community-based research implies, that we are not researching on members of the community, but rather provide research assistance for communities. It is importance for groups to feel in control of the purpose, and methodologies of the work being undertaken, for ownership of the monitoring. In many cases, groups request that the CBEMN conduct an extensive program of monitoring, but we emphasize the need for volunteers from within the community to be fully interested and engaged and to direct the purpose and goals of the program in order for it to be a useful and successful initiative. Caveats aside, making strong linkages between dedicated university researchers with community members can result in meaningful and useful research results for everyone involved.

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Barcelona, E

Promoting the Participative Environmental Planning

Approximation from Local Environmental Auditing in a Science Shop Framework in Catalonia

by Mª Àngels Alió & Sandra Estrella, Geographers Group for Social Ecology, University of Barcelona, Spain

The recognition of the existence of co-evolutionary dynamics between society and the environment determines the necessity of proposing new strategies for local policies, with a greater involving in the urban planning. So we must turn to new instruments of intervention, more considered and more complex, which includes the environmental dimension of territory and the expectations which have often been expressed by the population. Environmental planning, across the 21 Local Agendas and other tools of the new generation, offers a cross-section view in relation to regulations that emanate from other fields and that affect the spatial and temporal dimensions of a territory. Such diversity of interactions between physical and social processes becomes very explicit at a local scale, because it is mainly then when the actors involved in the making of decisions play an active role over the use of the environment and its consequences.

This paper presents some aspects concerning to the citizen participation process of environmental project done by the Geographers Group on Social Ecology (2GES) of the University of Barcelona[1]. This project, developed during 2005, consisted in the elaboration of the environmental local auditing of Sant Sadurní d'Anoia, a little town of Catalonia, near to the metropolitan area of Barcelona[2]. The environmental auditing has two main objectives: 1. to develop a report with proposals for introduce the sustainability criteria in the economy and the local management and 2. to demonstrate that it was possible to work together between the citizen and the auditing team[3] .

The participative program followed the model that has been experimented in other municipalities for the same 2GES team but it was specifically adapted to Sant Sandurní d'Anoia according an agree together between 2GES team and ADEMA -the local ecologist group. Also this program was accorded with the environmental department of local council.

The participation process contemplated different kinds of citizen participation according to the elaboration schedule of the environmental local auditing. The program (Table 1) differentiated three main auditing phases. In the beginning, the participation was reduced to actions to diffuse and explain the environmental auditing project and to explain what could be attainted by the citizen implication. After, in the diagnosis phase, the direct participation with the auditing team was promoted. Thus two main ways to participate were prepared : a) across specific opinion polls for citizen organizations that had to be answered altogether for the members of each organization; b) with assistance to work reunions by the auditing team. During the same phase interviews to people and to a selection of citizens organizations have been done.

Table 1. Summary and sequence of citizen activities through the Municipal Environmental Consulting of Sant Sadurní d'Anoia.

Timetable	Participation Type
Phase 1. Descriptive memory	
December 2004	Presentation of Environmental Auditing to the annual reunion of citizen associations
January 2005	Distribution of an opinion poll to all houses of municipality.
Phase 2. Diagnosis	
September, October and November 2005	Specific opinion polls for citizen organizations sent and call for participation in pre-diagnosis reunions.
	Interviews with a selection of citizen organizations.
	Pre-diagnosis meetings
December and January were entirely dedicated to work in the auditing team	
Proposal Phase or Action Plan	
February 2006	7. Presentation of poll results and Action Plan's draft.
March 2006	8. Citizen proposals and end comments to Action Plan.

Six pre-diagnosis meetings with different issues have been organized (one reunion for one week). The number of participating people was low quantitatively, but all the assistants participated actively in all the reunions asking questions, and making comments and proposals on the work document. (Table 2). The diffusion of each session was public but, in the practice, most of the participants were members of the ecologist or other citizen organizations

All meetings had been organized like work reunions. With this finality the auditing team prepared one discussion document for each of issue that, with the exception of the last reunion, had the objective to show the provisional results of the diagnosis draft, to check the information collected and to explore the citizen perception before the proposals will be elaborated in the next auditing phase. In order to attaint this goals each discussion document was composed by graphic information and tables that showed the main results of the diagnosis draft in order to comment on the main aspects of the environmental situation of the municipality. The following table (Table 3) shows an example of these documents, focusing on household waste aspects.

The last reunion was dedicated to local future scenarios in relation to environment and the possible changes to local sustainability. It was organized basing on two tables that cross different factors and

Table 2. Issues of the pre diagnosis meetings

Ecosystems and water flows
Mobility and atmospheric flows
Wastes and energy
Impact of economical activity, environmental behavior and citizen participation
Urbanism and planning
Sant Sadurní d'Anoia's future scenarios

that permitted to write proposals. The information obtained in this reunion was considered to be used by the auditing team in the last phase, when it had to organize the proposals' program.

The described process has to be understood as a commitment that will lead the municipality's transformation towards sustainability. In fact, it could also be considered as a pre-experimental phase of the Local Agenda 21 that should be developed in a broader sense, so that not only citizens get involved but also the majority of economic actors.

[1] The Geographers Group on Social Ecology organized the workshop. They also have done other environmental projects with citizen participation. Some of their publications on environmental Local Auditing and Citizen Participation during 21 Local Agendas are available at the Environmental Resources Center, http://www.ub.edu/cres.

[2] Sant Sadurní d'Anoia is a town (14.000 inhabitants in 2004) located in Penedès corridor near to the metropolitan area of Barcelona. The Penedès is an agrarian area specialized in vine production. Since some years important citizen opposition rises from this area against urban sprawl from the metropolitan area of Barcelona with the aim to preserve agrarian landscape and to promote the quality of natural factors.

[3] This work was possible thanks to different agreements between the research team, the Town Halls', the town where the work was realized, ADEMA, the ecologist organization of this municipality, and the Diputació of Barcelona, a public institution that gives technical support to municipalities in the administrative area of Barcelona.

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Table 3. Pre diagnosis. Draft to comment with the citizens on the household waste point.

HOUSEHOLD WASTES. POLICIES AND MANAGEMENT	
POSITIVE ASPECTS	NEGATIVE ASPECTS
A remarkable improvement has been reached with the implementation (May 2005) of the „door-to-door" municipal collect recyclable system of residential and commercial waste, especially about the recover of household wastes. Within the three first months of implementation of this system, 83, 39% of generated wastes has been recuperated, against 27, 61% during the same period of the previous year.	During the last few years the municipal waste generation has increased in absolute figures.
Since the implementation of the new collect system which has resulted in less containers in the streets, there has been an improvement in the conditions of street use due to a diminishing of malodours and noises.	In relative terms, the kilograms per inhabitant per day have also increased in the last few years.
Information and environmental education campaigns addressed to citizens about collect recyclable system of residential and commercial waste have recently increased.	Few information campaigns about waste minimization have been promoted.
The use of the local landfill by the citizens has doubled in the last four years.	

Paris, F

Sokori – Science and Citizenship in Europe

by Lionel Larqué, Sokori head leader, France

A brief history of the birth of a French "multi-actor" programme

It is obvious that the links between sciences and European societies have been changing deeply and ambiguously, though they had been stable since the beginning of the nineteenth century. They are both more and more contested and a source for initiatives of citizens who are eager to develop new forms of relationships between their lives and public policies. According to one's position, this evolution can appear as revealing worrying tensions or as a means to revivify democracy.

But we have also observed that the major French networks involved in scientific mediation (museums, associations…) haven't taken the measure of those evolutions. Their traditional activities go on. This attitude can be explained by: 1) a dynamic of no-politicization; 2) a strategical focussing upon propaganda speeches and projects. Another explanation for this kind of autism is that all the members of the scientific field such as research institutions, laboratories, researchers, universities, mediation actors, journalists and mass-medias think and act quite alone, they keep to themselves. Sometimes, they treat other actors - like mediators - with disdain. At last, we have great difficulties thinking concretely, in terms of local development, local actions or activities, local inventions for and with people. In other terms, it is hard to politicize our projects.

As the first French network of scientific mediators, the AFPD has recently decided to develop the first step of a training programme for their 150 employees and volunteers (one thousand) between 2005 and 2007. It is called the Sokori programme. To keep consistent with our analysis, we have decided not to act alone. One of the specificities of the AFPD is to be connected to various types of networks: as a major actor of scientific mediation; as the national partner of the National Research Scientific Centre (for kids and youths); as a member of the French International Solidarity platform (CRID); as part of some think tanks (like the AITEC).

The programme is financed by the French Leonardo-Socrates European Agency. It might help all the participants to go and study one specific European initiative. This programme consists of five phases: First of all, we select the participants according to their motivations. 85 people have been selected: few researchers (10); some French institutions delegates; some members of international solidarity organisations (15) and a majority of scientific mediators. Aged 25 (average); 50% men and 50% women (this kind of parity was achieved naturally).

Once they have been selected, all participants have to follow a 5 day seminar on major topics: the history of the European construction; the Lisbon strategy (and its obvious limits); what could be a scientific third economic sector; what is an international partnership (in the European and international sense); the issue of the people's participation upon scientific and technical problems (consensus conference); scientific public policies and research governance; at last, we have decided to include some media workshops (to facilitate the elaboration of their own speeches).

Then all participants were able to choose their European partner. But all participants were allowed to suggest a new European partner (according to their main interests). Furthermore all the missions have to be organised by a group of participants (no one is allowed to go and study alone). Each mission lasts two weeks. It has to be completely prepared by the French members of the group and their European partners. One asset of this programme is that the European partners are very varied: local authorities, NGO, museums, traditional scientific associations, foundations.

In May 2007, all these missions will have ended. The national organisation committee will organise an assessment session with all the French participants to analyse: 1) their personal, intellectual and political experiences; 2) their professional experiences; 3) the opportunities that will have emerged in terms of local development.

One of the major limits of the first steps of this programme is linked to the nature of the Leonardo programme. The persons authorized to participate have to live in the same country where the project has been accepted (France in our case). That's why all the participants have to study with each European partner the conditions and the motivations of a kind of Sokori-follow on.

That's why we have decided to organise in the European Parliament in Brussels, a seminar at the end of 2007 with different networks involved in concrete actions: social movements, local authorities, NGO, think tanks, researchers etc… More to come later.

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European partners

Austria: Institut für Gesellschaftswissenschaftliche Forschung, Bildung und Information, Österreichisches Oekologie Institut, Science Week Austria, **Belgium**: Foundation Roi Baudouin, Les Petits Débrouillards Belgique, Vrije Universiteit Brussel, **Bulgaria**: Evrika Foundation, **Cyprus**: Cyprus Mathematical Society, **Czech Republic**: Associace Malych Debrujaru, **Germany**: Rasselbande, Unabhängiges Institute Für Umweltfragen, Wissenschaftsladen Bonn, **Denmark**: Dansk Naturvidenskabs-Formindling Danish Science Communication, Technical University of Denmark Science Shop, Teknologi-Radet Danish Bord of Technology, **Estonia**: Tallinn Technical University, Humanities and Social Sciences - Complementary Training, **Greece**: Science and Technology Park of Crete, **Iceland**: Rannis, Technical University of Iceland, **Italy**: Controvento, Grammelot, **Lithuania**: Baltic Institute of Social Sciences, **Netherlands**: University of Groningen Chemistry Shop, **Portugal**: Ciencia Viva, **Romania**: Asociatia Intermadiunet Romania (INRO), **Slovenia**: The Slovenian Science Foudation, **Slovakia**: Adevyk, **Spain**: Parc Cientific de Barcolona, **UK**: Institute of Sciences In Society Foundation, University of Liverpool, Department of Sociology, Social Policy

Barcelona, E

The "Dialogue on Nanoscience and Nanotechnology" Project

by Marta Soler & Lourdes Rué, CREA

This one year project was contributing towards raising awareness of scientific culture in society as a whole. It aimed at opening up the research conducted in the Barcelona Science Park to the public in general, particularly research from the Laboratory on Nanobioengineering Research. The project stemmed from another project entitled "Opening the Science Park to the Neighbourhood". The Science Park is a university institution which is part of the University of Barcelona, and it primarily focuses on innovative scientific research.

In 2003 the "Opening the Science Park to the Neighbourhood" (OSPN) project was initiated and it had the objective of creating channels of dialogue between researchers and the public. Our point of departure was the idea that there are a lot of things going on within science communication, but that this communication takes place mostly in one direction: from researchers to the public, but never the other way round: from the public to researchers. Within the context of this project the idea was to involve people in an egalitarian dialogue along with researchers in order to exchange different points of view.

The "Opening the Science Park to the Neighbourhood" project was a framework within which many activities related to to science and technology in science & society were included, such as the TRAMS project, a project fostering the creation of mediation centres, called "Science Shops" which establish the communication between science and society. Within this framework, a project entitled "Contemporary Science Communication: Science is close to participate", which was funded by the Spanish Ministry of Education and Science was also carried out, and its main objective was to create a dialogue on the topic of nanotechnology. This project was carried out by CREA, in collaboration with the Communication and Scientific Dissemination Department within the Barcelona Science Park, and it contributed towards raising awareness of scientific culture in our society in many ways: by opening up this research to the general public and by creating a real channel of communication between the research community and the public, as well as promoting scientific vocation through the creation of activities and mechanisms to allow the general public and researchers contact each other. By means of this project the "Xarxa d'Amics del Parc Científic de Barcelona" [Friends of the Barcelona Science Park Network] was created, which now has more than 160 members. The initiative involved different kinds of participants such as: representatives from cultural organisations, consumer associations', educational organisations, local organisations (such as neighbourhood organisations), environmental associations and patients. A database and an email distribution list were created in order to ensure that communication took place via a two-way dialogue between all the actors involved in the project.

The development of this project contributed towards improving scientific knowledge in society through the dissemination of the lines of research carried out by the Barcelona Science Park and those developed by other centres of research working in the areas of nanoscience and nanotechnology (at both national and international levels).

The aim of this project was to promote the value of scientific and technological activities as tools to advance and to develop motors in society, and to encourage people to view it as a contribution to development and social well being. Firstly, the topics that participants were mainly interested in: These interests were identified in accordance with the way in which the thematic areas were classified within the Spanish Ministry of Education and Science R+D National Plan. These thematic areas were the following (ordered by most to least interest shown):

1. Biology (prioritising nanotechnology and nanobiology and also topics related to health sciences)
2. Agricultural and Nutritional Sciences and Technology
3. Environmental Sciences
4. Social Sciences and Economic Sciences (prioritising migration, then women's issues, and thirdly issues related to education)
5. History
6. Technologies within the Information Society
7. Chemistry, chemical materials
8. Design and Industrial Production
9. Space Sciences, Mathematics and Physics
10. Energy
11. Security and Defense
12. Transport and Construction

This one-year project had three stages which were as follows:

1. Survey on public knowledge of nanotechnology. A questionnaire was created in order to detect and identify doubts, concerns and questions that the general public had about nanotechnology research. Various organisations and schools from the Spanish regions of Catalonia, Aragon and the Basque Country were contacted. The survey was carried out via email as well as face to face (in the Catalan organisations). The target group included: citizen's associations, patients associations, consumer associations, cultural and educational associations, environmental organisations, NGOs, adult education schools

and secondary schools. The questionnaire firstly introduced the concepts of nanoscience and nanotechnology, its potential impact, applications, etc., and then there were 13 questions on the general public's communication with scientists. Data was obtained related to people's worries, concerns and interests and thus it was possible to find out more about them. More than 500 people responded to the questionnaire.

2. **Working groups** were created in Barcelona. Several of them included members from a federation of cultural and educative associations which involve non-academic adult people, while several others included students from high schools and their science teachers. There were two sessions with each group: during the first session, a researcher from CREA introduced the topic of nanotechnology, a great deal of questions were asked, and people were encouraged to get informed about the topic. The second session involved a discussion on what they had learnt. Then the participants filled in a questionnaire for the researchers.

3. **A seminar called "Dialogue on Nanoscience and Nanotechnology"** was organized at the Barcelona Science Park, to which the people contacted were invited, as well as researchers from the Science Park and people involved in scientific communication. Some people from the working groups attended the seminar, as well as people from other organisations. The seminar was a meeting point where researchers from the field of nanoscience and nanotechnology within the Science Park were able to join laymen, who are not involved in the scientific arena, but are interested in it. The dialogue was focused on some key areas: 1) how to introduce current key topics of research into high schools, as a way to motivate students to learn about science, 2) ways for researchers to listen to the opinions of the public, such as through advisory panels involving the end-users, 3) how to improve scientific communication, so that people are more well informed about a research which costs millions of Euros and which could potentially have a real impact on their living. People wanted to know more about the field of research which involves nanoscience and nanotechnology field of research.

The "Dialogue on Nanoscience and Nanotechnology" project opened up a public debate on nanoscience and nanotechnology on different levels of our society, and it involved students as well as laymen. The results of this public debate basically arose from the analysis of the two previous stages, which were, on the one hand, the presentations and introduction to the topic of nanoscience and nanotechnology (and included in the questionnaires and the analysis); and, on the other hand, the work carried out in high schools and other educational centres, including public organisations, in which work groups were created. Besides, in all of the fieldwork from this scientific discipline, participants shared their thoughts, questions and concerns, which were summarized by a researcher from CREA. Everything was presented in the seminar "Dialogue on Nanoscience and Nanotechnology", which was held at the end of November 2005.

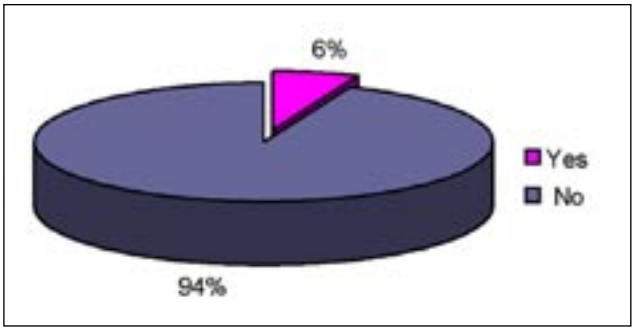
Next, the results of each one of the before mentioned previous stages were presented. Firstly, the results from the analysis of the questionnaires were presented, secondly some of the contributions from the participant which were collected in their own meetings were provided, and they are quoted literally, and finally some of the contributions given in the seminar are added.

Stage 1: Results from the survey on public knowledge of nanotechnology

After an analysis of more than 500 questionnaires, it is possible to talk about the real ideas and knowledge that these people have with regards to nanoscience and nanotechnology, as well as the information they need. A questionnaire was developed in order to collect information on the public's knowledge in this subject area. The questionnaire began with an introduction, where the main topic was presented, followed by 13 questions: 2 open questions, 2 multiple-choice questions and 9 closed questions. Most of the people who participated were under the age of 30 (72%), or between 30 – 65 years old (19%), only a few were much elder (4%). The remaining 5 % did not answer the question about their age. Women (48%) and men (52%) were relatively equally distributed in terms of the genre distribution of the sample.

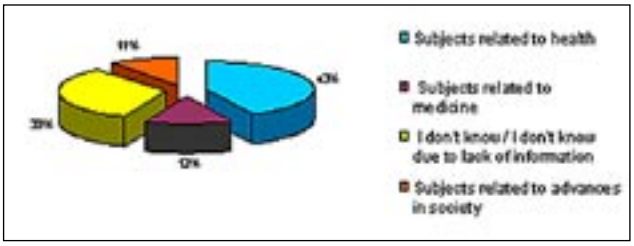
The first question asked if the respondent knew the word "nanotechnology": 39% said "yes" while 61% said "no". Among the people who answered "no", almost 42% declared that they had heard the term a few times while 54% had never heard it before. In spite of this, 61% of the respondent stated that they would like learn about it more in-depth and receive more information about nanoscience and nanotechnology research.

Answers to the question "what is more interesting for you with regards to this topic" were very varied. The responses demonstrated that people wanted to find out about the following topics: about the procedure which is followed in order to decide upon the aim of the research, about the kind of material and the kind of tools which are used in the laboratory, about the type of experimentation which is carried out in this study area, and the procedure for introducing the products into the market as well as other areas. The areas which were asked about the most were related to the following: practical applications, applications of the new technologies, how the order of priority of the goals are decided upon and by whom, and how public funding is invested for each one of these goals, the living organisms which are experimented on, how the construction is carried out on this small scale, what the investigation process is, studies for access to the research on nanotechnology, the direct repercussions on people and, the use of toxic products etc.
One of the most common responses to the question asking whether people had any prior knowledge of the discussion related to nanoscience and nanotechnology was "no" (94%).



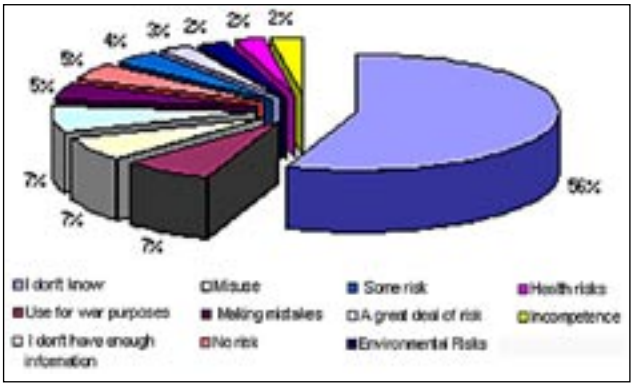
Graph 1: Knowledge on any subject of debate related to nanoscience or nanotechnology research (percentages).

The next question was related to the benefits and advantages of nanotechnology research'. The participants' responses are shown in the graph below:



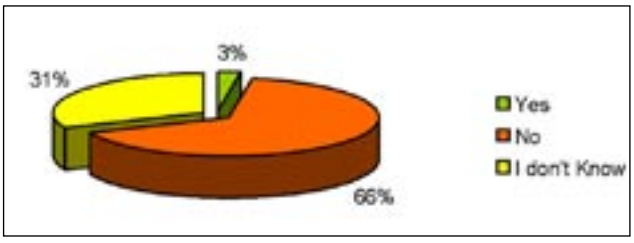
Graph 2: Fields, in which it is considered that research in nanotechnology is beneficial (percentages).

This graph underlines the answers collected by public's participation in relation to the risks of research in nanoscience and nanotechnology :



Graph 3: Risks related to nanoscience and nanotechnology research observed by the public (percentages).

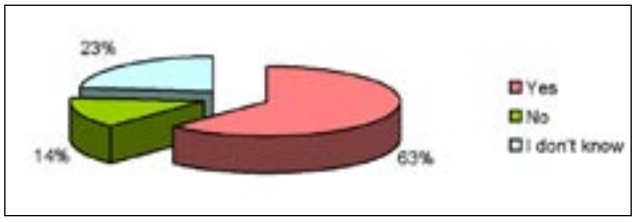
On the other hand, in response to the question of whether everyone received information on research in the same way, most of the participants believed that research does not reach everybody in the same way. Therefore, 66% of the participants replied "no", 31% responded that they did not know, and only 3% responded "yes". This graph shows the percentages of the answers' distribution:



Graph 4: The connection between the availability of information on and the diffusion of the results of research in nanoscience field in relation to various social sectors (percentages).

More than half of the people that responded to the questionnaire expressed their concerns with regards to the impossibility of being updated on scientific advances.

About 63% of the respondents think that it is important that the public's opinions are involved in the decision making process for deciding upon the research priorities in the field of nanoscience and nanotechnology; 23% do not know; and only 14% think that the answer is "no". Their thoughts how these opinions should be collected, included: by civic organisations, by civic platforms on this topic, by organisations linked to health, environmental movements, NGO´s or other organisations. Amongst the various ways to collect opinions which were suggested by the participants in the survey it would be useful to point out the following ones: through communication, publicity, scientific committees chosen democratically, through new technology, democratic mechanisms of political control over research, through surveys, conferences, seminars in schools and high schools, political representation with a real interest in representing the public, and the creation of a Researcher Advisory Board which is not influenced by financial interests.



Graph 5: Degree of public's interest in scientific subjects (percentages).

The last question asked was related to the existence of Advisory Boards for research in nanotechnology in some European countries which take the public's opinions into account in order to contribute towards the improvement of this kind of research. The question was whether people thought that the creation of an Advisory Board is needed in our country: 70% of the answers were "yes", 26% were "I don't know" and only 5% answered "no".

Graph 6: Degree of public's thought that society should be involved in research in the decision making process (percentages).

Stage 2: Creation of working and discussion groups

Working and discussion groups on scientific subjects were set up, and they were comprised of people who are not traditionally considered to be involved in subjects related to scientific research or activities with a cultural scope due to their level of education and their socioeconomic situation. Most of the participants were from schools for adult education, small neighbourhood associations, and cultural associations. Some of them were from ethnic minority groups. The creation of working groups was a positive experience for everyone. One of the benefits was that people of different ages, and with different backgrounds and interests shared their thoughts and opinions regarding science. Many people started to think that science is a field in which they are also able to participate. The working groups dealt with nanoscience and nanotechnology research and people connected with civic organisations or educational centres were involved in these groups. Most of them had never heard the word "nanoscience", or "nanotechnology" before.

The working groups collected the opinions of people who usually are not involved in initiatives like this one. However, in this case, they themselves were the actual end-users. In addition, by contact with the public their requirements were listened to and the importance of providing a social dimension to research was transmitted by them.

The establishment of working groups and discussion groups helped to overcome stereotypes such as the lack of interest in science and the lack of science related skills in our society in general, and with regards to scientific research in particular. They also helped people to interpret and understand scientific knowledge. Initiatives like this one demonstrate that the public has a real interest in science and also needs an advancement towards new ways of receiving knowledge and a participative method of communication in science.

The working groups and discussion groups were very successful due to the participants' perception of scientific learning and their background in dialogic learning. Knowledge can be constructed dialogically. (Flecha, Gómez & Puigvert, 2001).

In the working groups many people agreed upon the need to open up this dialogue, for instance, through the creation of Monitoring Councils on particular research areas, as was shown in the results of the questionnaire.

Next, it would be useful to include some quotes from some of the people who participated in this project, specifically in the work groups and in the discussion groups on nanoscience and nanotechnology, which may help future development in this area:

- "I do believe research must be carried out in all t possible fields, because in the long term, it will be of benefit to humanity."
- "The more research you do the better, always, and it should be for everyone and accessible to everyone."
- "Advances in science, are kept in a limited amount of countries, so they do not benefit the global population, because not every country has the resources available to carry out this kind of research, even though these countries need these advances just as much as every other country does."
- "Just like in literature, dialogue in science is good."
- "Everyone should receive scientific information and their opinions should be taken into consideration. It's very important. The definition of new channels of communication and new ways in which to collect people's opinions and reflections is more necessary and more important every day."

Stage 3: Seminar called "Dialogue about Nanoscience and Nanotechnology" was organized at the Barcelona Science Park

The "Dialogue on Nanoscience and Nanotechnology" project culminated in a seminar entitled "Dialogue on Nanoscience and Nanotechnology" which was described previously. The seminar was a meeting point for researchers from the area of nanoscience and nanotechnology. Them and other members of the research community as well as laymen came together to have a discussion on this topic.

The inclusion of the opinions of, members of the public, especially people who have not traditionally been involved in scientific research, were seen as an innovate element within this project and one which improved the scientific knowledge and culture which the public have as well as their knowledge of the science and technology.

The use and development of new methods based on the inclusion of social groups' opinions in the analysis and dissemination of the project contributed towards enabling the project to have a social impact and helping to ensure that policy recommendations result from the dialogue between scientists, educators, policy makers, professionals, vulnerable groups, and the public as a whole. Furthermore, raising awareness of the responsible role which science has in society and bringing science and scientific subjects closer to the public with regards to the issue of scientific communication is an important step forward.

From this experience, it was observed that there is a need for projects such as this one, in order to bring science and society closer together. Furthermore, these initiatives demonstrate that the public has a real interest in science, which disproves the stereotypes. This type of initiative also helps to raise awareness for the need for research projects, on any topic, to include the participation of the end-users in order to improve the quality of the research process and to increase its social impact.

CREA, Centre of Research in Theories and Practices that Overcome Inequalities. University of Barcelona.

Located in the Science Park of Barcelona, University of Barcelona, CREA is a research center belonging to the University of Barcelona. CREA researchers' expertise covers a wide range of disciplines (sociology, education, psychology, economics, anthropology, linguistics, biology, communication engineering, etc.) and research areas (ethnic minorities, women, disabilities, labour inclusion, education, citizenship, social theories, art, science-society etc.). Since 1991, CREA has been participating and coordinating European and national R&D research. CREA served as the coordinator for the RTD project "WORKALÓ" (FP5) and integrated project "INCLUD-ED" (FP6), and has been a partner in several others.

CREA is composed by more than 70 researchers (including professors, students and other professionals) from different disciplines and expertises. CREAs research work is embedded within a solid theoretical background that has been developed throughout years working in dialogue with the most relevant contemporary authors in the social sciences (for instance, Ulrich Beck, Judith Butler, John Searle, Amartya Sen, Alain Touraine, Paulo Freire, Gordon Wells, and Michel Wieviorka). Also, CREA works closely with associations, representatives, end-users and a wide variety of stakeholders of the research is developing, through a different modalities. For example, through the development of communicative methodology, advisory councils and multicultural teams, it is possible to guarantee a better connection with the end-users of our research. In this combination, CREAs work breaks down with the gap between theory and practice, researcher and researched, bridging through its scientific endeavour science and society.

Marta Soler Gallart obtained her Doctorate at Harvard University and is Ramon y Cajal Researcher in the Department of Sociological Theory at the University of Barcelona. She is member of the CREA Research Center at the Barcelona Science Park. Besides others she participates in the FP6 project "TRAMS. Training and Mentoring of Scienceshops"

Lourdes Rué Rosell graduated in Biology at the University of Barcelona. She is currently researcher at CREA at the Science Park of Barcelona and working in the project "TRAMS", and in the project "Opening the Science Park to the Neighborhood". She is doctoral student at the Department of Didactics of Experimental Sciences at the same university. Lourdes Rué is taking part of different networks at national and international level, being one of them the International Science Shop Network Livingknowledge. She is a member of Euroscience (a grass-roots organisation generally open to any citizen interested in science and technology and its links with society).

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Conference

Communities Building Knowledge

Innovation through citizens' science and university engagement

The preparations for the 3rd Living Knowledge Conference are getting more concrete. The conference is intended to be held in Paris, France, from August 30, 2007 until September 1, 2007. A pre-conference session will give a general introduction on Science Shops as second and condensed Science Shop summer school. The conference will be organised by the International Science Shop Network, Fondation Sciences Citoyennes (FSC) and the International Network of Engineers and Scientists for global responsibility (INES).

The 3rd Living knowledge conference aims at disseminating and exchanging information on community based, activist and participatory research, on citizens' science and cooperative innovation. It will present the work of a whole range of structures and science-society interactions. This will include Science Shops, NGOs, universities engaged with citizens, independent institutes, participatory action research centres and social movements, all responding to a growing demand for research coming from wider civil society. These groups, which operate outside of public research institutions and private research laboratories, undertake a comprehensive range of research topics, including research on local and global environment, health, safety, mobility, unemployment, poverty, minorities' issues, disability, research on voluntary action and social capital and national and international development. They offer a broader perspective on what should be included in science and research. The conference will address a number of key questions:

- How does citizens' research work, what kinds of knowledge does it produce and with what consequences?
- How does citizens' research challenge traditional scientific frameworks and techno scientific paradigms and what new options does it open to scientists?
- What visions of society does activist research promote?
- What are the social and policy contexts necessary to promote community based research activities?

The conference will lead to the presentation of a large variety of experiences from across Europe and beyond that will reflect the social utility, the innovative power and the scientific value of these initiatives. It will also reflect on the actual societal context in which top-down science is increasingly contested. The conditions for democratised research and socialised innovation will be discussed. The aim is to ensure that research and innovation become compatible in their design and operation with democratic values, institutions and practices throughout all social domains.

The conference is aimed at people already active in or interested in community based and participatory research (citizens, researchers, students, civil society organisations, administrative officers, policy makers, etc.). Our intention is to build bridges, explore ideas, and discuss strategies in order to empower one another. The conference aims to share best practice amongst community based and participatory action research networks.

Many civil society organisations however are still relatively uninvolved in research policy issues, even though they may spend a lot of their time addressing issues that are the result of research decisions made 20 years ago. We suggest that it is time for CSOs to move upstream and engage in dialogue with scientists and science policy decision makers. On the other hand, many scientists fearing the "unscientificness" of the outer world still hesitate to engage with civil society. But our knowledge-society needs the involvement of CSOs in research and innovation and it needs researchers willing to work with them. This will further enrich research, broaden science's societal legitimacy, diversify socio-technical options according to specific contexts, increase environmental, social and economic well-being, democratise innovation and strengthen our democracy.

Since citizens come from the "other side" of the problems, and since they have different preoccupations from researchers, they are able to approach and to contextualise the problems in other ways, they propose other norms of judgement, they want to know other things and they utilise a broader range of data than the scientific experts. Since the consequences of research activities have such an impact on daily life, science and research should be as much considered from the citizens' perspective as from that of the scientific establishment, industry or governmental bodies.

The conference organisers suggest that there are choices and alternatives to this situation! A science for all must be built with all and include knowledge formerly devalued. Furthermore, the diversity of approaches in different countries is considerable, yet there has been relatively little information sharing and cross-national learning between countries, universities, public administrations, policy-makers, grass-roots associations and Science Shops.

Consequently the conference will focus on:

- Empowering of people and promoting of active citizenship
- Building equitable and supportive research partnerships with civil society organisations
- Developing concepts and tools for civil society research in order to contribute to the development of the research agendas and research methodologies at public research institutions like universities or research organisations
- Enhancing scientists' and researchers' capacity to work for and with citizens
- Facilitating transnational community based research themes by developing concepts and procedures for transnational community based research co-operation.
- Developing strategies and concepts to help civil society organisations to influence Science & Technology policy agendas
- Gaining support for new modes of innovation to be designed and implemented and to legitimate them??
- Developing scientists' and policy makers' awareness of public concern issues
- Supporting the development of new Science Shops and participatory research organisations

COMMUNITIES BUILDING KNOWLEDGE - INNOVATION THROUGH CITIZENS SCIENCE AND UNIVERSITY ENGAGEMENT: The 3rd Living knowledge conference, 30 August to 1 September 2007, Paris, France. A draft programme, more details, the call for abstracts and requests for support will be announced on the Living Knowledge website (www.livingknowledge.org) as well as on the Living Knowledge discussion list. Please check for updates.

THEMES OF THE CONFERENCE

1) University-Community Engagement

- Strategic discussion on Science Shops and university engagement
- The role of Universities in Community Based Research
- Methods for embedding Community Based Research in universities
- Community Based Research and changes in higher education
- How academic education can support becoming a citizen scientist
- Methods for rewarding academic researchers who are involved in Community Based Research

2) Citizens' science and social movements

- What does ‚citizen science' and ‚participatory action research' mean today?
- Popular epidemiology and risk communication
- Relationships between science and current social movements
- Democracy and technological change
- The role of technology in creating and perpetuating power relations
- Access of citizens to knowledge production
- Role of Science Shops and NGOs in linking science and society

3) Research policy – from local to global

- Ways of building and strengthening relationships between Community Based Research practitioners and local policy makers
- How to develop the relationships between Science Shops and the EC
- How to influence the policy context for CBR and Science Shop work at local, regional and international levels
- Ways of influencing research agendas at a European level to meet the needs of Community Based Research and CSOs,
- The role of CSOs

4) Innovation: added value for communities

- Innovation and intellectual property rights
- NGO innovations
- Democratic models of science
- How to open up research and innovation to wider society
- Civic entrepreneurship
- Social economy

Conference

Popular Education Network

The Fourth International Conference of the Popular Education Network (PEN) will take place on the Maynooth Campus of the National University of Ireland, near Dublin, from Friday 20 to Sunday 22 April 2007, hosted by the Department of Adult and Community Education. This conference builds on the success of previous PEN conferences held in Edinburgh (2000), Barcelona (2002) and Braga (2004).

The conference will be workshop-based, with the emphasis on discussion, dialogue and debate rather than the formal presentation of academic or research papers. The conference is an opportunity for university-based teachers and researchers and others involved in higher education, who share a common interest in popular education to meet, exchange ideas, learn from each other and enjoy some much needed solidarity and conviviality.

As in the past, the conference will be organised on a strictly non-commercial basis. The conference fee is 100 euros. This covers administrative costs, paper work and refreshments while the conference is in session. Details about booking accommodation, will be sent to those who express interest in participating. Participants are expected to make their own travel arrangements.

Contact: *jim.crowther@ed.ac.uk*, *www.acesector.org.nz/conf/confs.htm*

Publication

Interfaces between Science and Society

The aim of the project of science has been to provide answers to questions about the world and how it works. Often, this lofty role has been characterised by a narrow and dogmatic scientific training, an unwillingness to communicate to differing stakeholder needs, a refusal to accept and to manage uncertainty, complexity and value commitments, and the reduction of knowledge assessment to colleague peer review on narrowly technical issues. Times have changed. As the world faces increasingly disparate challenges, science is subjected to increasingly vehement demands from a society calling for transparency, openness and public participation in science policy. Science is going through an evolutionary process — perhaps the most painful process it has ever encountered.

Research on the interfaces between science and society is a burgeoning area. A new conception of knowledge now appears to be emerging, based on the awareness of complexity, uncertainty and a plurality of legitimate perspectives and interests.

Democracy is extending into the previously quite exclusive scientific realm, and science must now submit to public scrutiny and participation in the governance of knowledge. This book provides much-needed reflections on the methods and tools for knowledge quality assurance, particularly on its inputs to extended policy and decision-making processes.

The overall aim is to improve the relationship between science and society. The discussion involves six themes: communicating between plural perspectives; accepting and learning how to manage uncertainty, complexity and value commitments; acknowledging new conceptions of knowledge; implementing transparency, openness and participation in science policy; valuing communitybased research; and exploring how new ICT can support inclusive governance. Taken together, these themes provide both a framework and vision on how to conceive, discuss and evaluate the changes that are occurring. The chapters cover theory, practice, approaches, experiences, ideas and suggestions for a move beyond 'talking the talk' to 'walking the walk'.

Science and policy interfaces are dynamic processes needing to permanently redefine themselves and their roles. This book contributes to the enrichment and deepening of our understanding of these important new trends in the social relations of science, which are fundamental to our understanding of the prospects for further progress.

Science and Society Interfaces, edited by Ângela Guimarães Pereira, Sofia Guedes Vaz and Sylvia Tognetti, European Commission Joint Research Centre, Italy, November 2006, 366 pp, ISBN 1-874719-97-7,£35.00 www.greenleaf-publishing.com

How to design and organise public deliberation on science and technology?

CIPAST Training Workshop, June, 17th-21st, 2007, Napoli

The training workshops of the CIPAST consortium are instrumental tools to foster organisational learning, dissemination of good practices across institutions and countries, as well as critical self-reflection. The CIPAST consortium will organise the second training workshop on 'How to design and organise public deliberation' in Napoli, from June 17th to June 21st 2007.

The workshop will present the state of the art knowledge on public participation in science and technology and will refer to concrete experiences in European countries. The workshop is also designed to test training tools. Drawing on this workshop, the CIPAST consortium will produce a training package, available through its website, for further training initiatives.

This workshop will welcome people who have a strong interest in public participation in science and technology, who may already have organised participatory exercises or willing to do so, or who simply want to learn more about public participation, as well as participants that attended the first CIPAST training workshop in Dresden.

The CIPAST Napoli training workshop will be partly based on your inputs:

1. Propose a Poster: Please send an abstract (300 words) and specify whether you need CIPAST support for the preparation. All posters selected will be protected by a Copyleft licence and will be available through the CIPAST website.
2. Propose a case study: Please send an abstract (500 words) describing the case you submit: the context, the questions raised , and the relevance of this case for the CIPAST Workshop. The selected cases will be prepared in collaboration with CIPAST members.

Please send your proposals to **Delphine Ducoulombier** at ducoulombier@ivry.inra.fr before **15 February 2007**. The selected projects will be developed further by the participant in collaboration with CIPAST consortium members in April and May 2007.

You can already pre-register for the workshop by replying to **Jennifer Palumbo**, Citta della Scienza, Progetti scienza e Società, E-mail: palumbo@cittadellascienza.it, Tel: +39 081 570 21 58 / +39 081 6100952, Fax: +39 081 7622670. Online registration is possible at the CIPAST website www.cipast.org

Do not hesitate to propose ideas on the discussion group (cipast@yahoogroups.com). You can subscribe for the discussion group on the CIPAST website (www.cipast.org) or send an e-mail to norbert.steinhaus@wilabonn.de.

Networking & Training Session for UK and Ireland

The Science Shop at Queen's University Belfast is holding an informal networking and training session for UK and Republic of Ireland based Science Shops on Thursday 1st and Friday 2nd February 2007. It is anticipated that this will be of interest to new and emerging Science Shops as well as to people who are considering setting up a Science Shop in their own University. This session will provide a broad overview of the work done by Science Shops across Europe and the European Commission context for the work. It will also allow informal information exchange between participants and there will be ample opportunity to discuss current Science Shop practice and to consider the challenges and rewards of setting up a Science Shop within your own institution.

Contact: Emma McKenna or Eileen Martin at Queen's University Science Shop, email science.shop@qub.ac.uk; tel: 028 9097 3107/3410

Citizen Participation and Democratic Governance

PRIA's 25th Anniversary Dialogues in Delhi, February 5-8, 2007

PRIA began its journey with a belief in the tenet 'knowledge is power'. Meanwhile, building on its international linkages PRIA broadened the network of civil society actors drawn together by a common goal to include local, national and international organizations exchanging experience and learning; strengthening civil society voices advocating for participation and an empowered citizenship. Its journey of participatory research, which began from a small hut in New Delhi, has today extended its outreach to directly touch the lives of the poor and marginalized living in 12 states of the country and many countries beyond.

The Seminar on the 5th of February, 2006 is a celebration of this participatory research network and attempts to explore ways of deepening this networking and learning exchange. It is an occasion not only of celebration but an opportunity to bring together academicians, practitioners, civil society activists, bureaucrats and citizen leaders from across the country and the world to reflect on what participatory research has given us and what more it has to offer.

For further information on PRIA and the seminar you may visit the website www.pria.org.

What is a Science Shop?

A „Science Shop" provides independent, participatory research support in response to concerns experienced by civil society. Science Shops use the term „science" in its broadest sense, incorporating the social and human sciences, as well as natural, physical, engineering and technological sciences.

There is not one dominant organisational structure defining a Science Shop. How Science Shops are organised and operate is highly dependent on their context. Organisations that meet the definition of a Science Shop and do provide civil society with knowledge and skills through research and education on an affordable basis will be taken into account.

There are forums for all parties interested and involved in Science Shops and other forms for community based research. They can give input to but also get in-formation from the Living Knowledge discussion list, the bimonthly newsletter or this magazine, which provide users with resources and tools related to community-based research.

Living Knowledge Website:
www.livingknowledge.org
International Science Shop Office
isso@bio.uu.nl

If you want subscribe or unsubscribe to the magazine or the newsletter please send a message to C.F.M.deBok@uu.nl or visit our website at http://www.livingknowledge.org and select 'Discussion list and Newsletter'

EC Services

The EC printed a flyer on Science Shops. This flyer focuses on different target groups, universities, students, citizens groups and local authorities. The flyer can be downloaded from the Living Knowledge website.

Printed copies can be ordered for free at the European Commission from liz.versterlund@cec.eu.int.

The new Science and Society portal of the European Commission replaces the previous Science and Society website. The portal is open to all news and organisations related to Science and Society.

http://ec.europa.eu/research/science-society/home_en.cfm.

Still available at the old EU website are specific pages with general information about Science Shops as well as the minutes and single contributions of two Science Shop workshops organised by the European Commission

http://europa.eu.int/comm/research/science-society/scientific-awareness/shops_en.html