



ENHANCING THE RESPONSIBLE AND SUSTAINABLE EXPANSION OF
THE SCIENCE SHOPS ECOSYSTEM IN EUROPE

Modules for Training of Science Shops Staff

Science Shops: CBPR Project Management



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Objectives

In the area of expanding knowledge, after this module, participants will:

- Gain knowledge about CBPR, its relation to RRI, and the benefits and challenges of this research approach
- Strengthen their knowledge and understanding of the specific steps required to implement CBPR projects.

In the area of skills and attitudes, they will:

- Assess their commitment towards participatory research approach
- Be able to manage a CBPR project
- Be motivated to perform more participatory and responsible research projects

Session outline

Methodology	Material required	Duration Total: 3hr 45 min
1. Welcome	Training agenda (printed)	5 min.
2. Personal introductions and initial evaluation	- Small sheets with beginnings of sentences - "Post-it" notes (different colours)	15 min.
3. Sharing experiences Storytelling	Invited speakers or case studies	45 min. (including Q&A and discussion)
4. Presentation Part 1	- PowerPoint projector & large screen - Key messages - PowerPoint presentation	20 min. (including Q&A and discussion)
5. Interactive exercise 1 "Benefits of CBPR for different stakeholders"	- Cards with different types of stakeholders	20 min.
6. Presentation Parts 2–4	- PowerPoint projector & large screen - Key messages - PowerPoint presentation	45 min. (including Q&A and discussion)

7. Interactive exercise 2 “Plan your own CBPR project”	- Template for SciShops.eu Project Model Canvas	60–75 min.
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Description of methodologies

Welcome

The trainer welcomes participants, presents the session’s aims, distributes and comments briefly on the training agenda.

Personal introductions and initial evaluation

If there is a need (depending on the training programme), the trainer can ask participants to present themselves.

For the initial evaluation, attach 2-3 sheets of paper with questions for the participants on the wall. Questions could be:

- To what degree are you informed about CBPR project management?
- To what extent do you feel empowered to manage CBPR projects?
- How valuable do you believe CBPR projects to be?

Give sticky notes to the participants, ask them to write answers to every question (on a separate sticky note) and put them on the wall. At the end of this training, invite all participants to the wall and together go through all questions and comments to see if they were answered during the day.

Sharing experiences

Participants are asked to share their experiences of running CBPR projects. Alternatively, if there are no participants with such experience, the cases can be presented in the form of written stories/video or inviting a speaker to share their experiences (physically present, or online).

Written stories can be chosen from Deliverable 2.2. “Existing RRI tools and successful participatory community-based research case studies report” (Garrison et al. 2018). The choice depends on the audience of the training, e.g. if the training is performed in a Central East European country, it is worth giving examples of Science Shops from these countries. We recommend taking:

- One case based at a university, e.g. Science Shop Language, Culture, Communication, University of Groningen (the Netherlands, Western Europe), InterMEDIU (Romania, Central East Europe);
- One case based at an NPO, e.g. Bonn Science Shop (Germany, Western Europe), Science Shop based at Social Innovation Institute (Lithuania, Central East Europe);
- One case of an e-Science Shop – Universitat Oberta de Catalunya (UOC) Science Shop, Spain (there is no e-shop in Central Eastern Europe that we are aware of).

Presentation(s) are followed by a Q&A session or a plenary discussion. Questions for discussion could be:

- What are the benefits of CBPR?
- What are the challenges of running CBPR projects?

PowerPoint presentation

Key messages corresponding to the different slides

Science Shops represent an approach to Community Based Participatory Research (CBPR) as their main activity is to conduct CBPR projects. The aim of this presentation is to provide a general introduction to the idea of CBPR and how it is related to RRI. This presentation also provides an overview of the steps to be followed for implementing CBPR projects, including main challenges and recommendations.

1. What is CBPR?

Community-based participatory research (CBPR) is a way of organising research where scientists work together with non-governmental organisations, communities and other groups of society to co-create new knowledge or understanding of community issues. The new knowledge can later be used to foster change in the community (Branco et al., 2017).

Different authors describe various partnership approaches to research. Even though the term “CBPR” is commonly used to talk about “community-centered”, “community-involved”, “participatory”, or “collaborative” research, what they all have in common is the intentional engagement of community members in sharing their perspectives and local knowledge with scientists. The most important difference of CBPR from other approaches that conduct research in community settings is the active involvement of community members in all phases of the research process (Riffin et al., 2016).

CBPR is defined by nine key principles (Israel et al., 1998):

1. Recognises the community as a unit of identity;
2. Builds on the strengths and resources within the community;
3. Facilitates a collaborative, equitable partnership in all phases of the research;
4. Fosters co-learning and capacity building among all partners;
5. Balances knowledge and action for the mutual benefit of all partners;
6. Addresses locally-relevant problems and considers multiple determinants of a problematic issue;
7. Occurs in a cyclical and iterative process that includes ongoing evaluation of successes and obstacles;
8. Disseminates findings and knowledge gained to all partners;
9. Involves a long-term process and commitment to sustainability.

CBPR is an approach to research that seeks to address locally-relevant issues collaboratively. Researchers and community members are encouraged to engage in all aspects of the research process, including decision-making, capacity building, knowledge generation, and the

dissemination of findings. Usually CBPR projects start with a problem identified by a local community or CSO. This type of research is designed to promote long-term commitment between researchers and community members. The goal of CBPR is to share knowledge and understanding with community members and create mutual benefit for all partners (Riffin et al., 2016).

The literature has pointed to a number of advantages (benefits) that can occur from using a CBPR approach (Riffin et al., 2016):

1. Ensuring that the research topic reflects a major issue identified by the community;
2. Improving the quality, validity and sensitivity of the research by drawing upon community wisdom;
3. Promoting trust between communities and researchers;
4. Improving the translation of research findings into policy and practice;
5. Enhancing the uptake of the research findings by community members.

Example

The Science Shop run by the Environmental Social Science Research Group (Hungary) conducted a project on “Forgotten citizens of Europe: Participatory Action Research for Local Human Rights” aimed at exploring local human rights issues and the experiences of the Roma communities in Southern Hungary. Alongside participatory research, a network of local stakeholders, professionals, activists, schools, and municipality was established and engaged in the project. The engagement of the municipality was of crucial importance to the implementation of the final result of the project – to establish an alternative school for Roma children in the local community.

More information: SciShops deliverable 2.5 “Existing Science Shops assessment” (Stanescu et al. 2018).

Some more key rationales discussed in the literature on community-based research (Israel et al., 1998):

- It enhances the relevance, usefulness, and use of the research data by all partners involved;
- It joins together partners with diverse skills, knowledge, expertise and sensitivities to address complex problems;
- It improves the quality and validity of research by engaging local knowledge and local theory based on the lived experiences of the people involved;
- It strengthens the research and program development capacity of the partners;
- It creates theory that is grounded in social experience, and creates better informed/more effective practice that is guided by such theories;

- It increases the possibility of overcoming the understandable distrust of research on the part of communities that have historically been the “subjects” of such research;
- It provides additional funds and possible employment opportunities for community partners;
- It involves communities that have been marginalized on the basis of, for example, race, ethnicity, class, gender, and sexual orientation in examining the impact of marginalization and attempting to reduce and eliminate it.

The European wide survey conducted by the SciShops project in December 2017 revealed that a vast majority of 642 respondents thinks that their organisation would benefit from community-based participatory research, with no distinctive differences between researchers, community organisations and policy-makers. However, there are some differences between the stakeholder groups in their views on what the main benefits of community-based participatory research are. Researchers identified building trust and understanding between researchers and society as the main benefit. Finding solutions to societal problems is also something that researchers consider to be an important benefit. Community organisations and policy makers, in contrast, identified knowledge transfer between different stakeholders as one of the main benefits of this type of research. Therefore, more attempts are needed to demonstrate other benefits of CBPR projects to all stakeholders.

More information: SciShops deliverable 2.3 “Stakeholder survey summary report” (Bergman M. et al. 2018).

2. Relation between CBPR and RRI

RRI is an inclusive approach to research and innovation, to ensure that societal actors (researchers, citizens, policy makers, business, third sector organisations etc.) work together during the whole R&I process. It aims to better align both the process and its outcomes of R&I with the values, needs and expectations of society (European Commission website, Responsible research & innovation).

Main RRI elements are public engagement, ethics, open access, gender equality, science education, and governance. CBPR reflects all the main elements of RRI:

Public Engagement:

- CBPR is research approach that is centred upon the engagement of the community – research with and for the community.

Ethics:

- CBPR responds to societal needs and values;
- CBPR is inevitably committed to ethical principles & legislation and to prevent misconduct, as a wide range of stakeholders are involved.

Open access:

- CBPR results are free accessible.

Gender equality:

- CBPR is aware not only about gender inequality, but it is also inclusive and sensitive towards all marginalised groups in society.

Science education:

- CBPR contributes to creating a more scientifically literate society;
- CBPR equips students with competences responding to societal research needs.

Governance:

- CBPR can be easily integrated into universities and research institutions, embedded in academic curricula.

CBPR is also in line with RRI process requirements, for example:

- CBPR involves a broad range of stakeholders;
- CBPR process is often interdisciplinary;
- CBPR includes silent voices – those that are underrepresented;
- CBPR contributes to the education and empowerment of the community.

Science Shops through the whole process of implementing CBPR projects need to take into consideration the dimensions of RRI, for example, ensuring research ethics, considering gender balance of project participants wherever possible, etc.

More information: A general toolkit covering all dimensions of RRI is presented in the SciShops deliverable 2.2 “Existing RRI tools and successful participatory community-based research case studies report” (Garrison et al., 2018).

3. Steps for implementing CBPR projects

This part of the presentation is based on the “Practitioner roadmap and methodology toolkits”, prepared by SciShops project partners (Russo et al., 2018), which should be consulted for more information.

The practitioner roadmap provides an understandable, approachable and straightforward step-by-step guide for implementing projects in Science Shops. The guide addresses the key steps to run projects at Science Shops, why a given step is important, and what factors have to be taken into consideration.

The main phases of implementing CBPR projects are: Engagement; Research development and implementation; Dissemination, Evaluation and Exploitation.

Phase I: Engaging

Main steps of the Engagement phase

- Step 1. Identify the community of interest
- Step 2. Conduct an interest and needs assessment
- Step 3. Contact different stakeholders
- Step 4. Involve students and academic staff
- Step 5. Assemble a Community Advisory Board

The main issues in this phase are:

- **Participatory nature of CBPR.** The core principles and values of the CBPR framework ensure that community members participate in the research and developing outcomes that they can use to make changes in their own communities. This requires a high level of contact and interaction between researchers and the community. Participation falls along a continuum – from community members having minimal input and the focus primarily being on gaining community responses – to community members engaging in developing research tools and processes – to community members engaging in all aspects of the research, from the design phase, through data collection, data analysis, dissemination and action. In the CBPR framework, more participation is better (Burns et al., 2011). Therefore Science Shops should try to engage all relevant stakeholders to take advantage of their knowledge, skills and social contacts, as well as to ensure their involvement in all phases and steps of CBPR project implementation.
- **Involvement of students and academic staff.** CBPR project implementation often relies on the work of students, interns and academic staff. Different types of Science Shops (e.g. based within universities, NPOs or businesses) have different access to such human resources. Some universities, for example, may already embrace CBPR in their teaching, and for others more effort will be required to convey the benefits of CBPR to students and academic staff and motivate them to participate.

Phase II. Project development and implementation

Main steps of Research development and implementation phase are:

- Step 1. Identify clear CBPR goals
- Step 2. Appraisal of current research status
- Step 3. Identify common research question and hypothesis
- Step 4. Select the best research methods and assess their practical feasibility
- Step 5. Conduct research
- Step 6. Analysis and Interpretation

The main issues in this phase are:

- **The role of the researchers and coordinators.** Research projects run by Science Shops are implemented by, or under supervision of, experienced researchers or university

teachers. Therefore, they usually have the necessary expertise in conducting research. Thus Science Shops coordinators do not need to be researchers themselves or to have in depth experience of the research process.

- **The weight of the research component in the CBPR.** By its nature, CBPR is applied research as it seeks to change issues that are critical to communities. However, sometimes what is needed for communities is not only a report containing the research results, but other services, products or outcomes to be developed based on the research results. The research component in the CBPR project could therefore range from being a consultation with an expert with knowledge, to desk research, a measurement (e.g. measurement related to the design of a children's playground), to a social survey or laboratory experiments. The research that can be undertaken also depends on the capacity of the Science Shop mother organisation as not all Science Shops have access to laboratory equipment. In addition, if students are to be involved in CBPR, the time frame of their courses must be taken into account, as well as their abilities to use some research methods. Some research methods may also be too expensive to undertake (e.g. a national social survey most likely will be too expensive for a CBPR project without funding).

Phase III: Dissemination, Evaluation and Exploitation

CBPR projects do not end with the writing of a research report. A necessary phase is a follow-up of the activities, which includes dissemination of the project's results, evaluation and impact assessment, and additional efforts to support the exploitation and long-term sustainability of the research results.

Steps of Dissemination, Evaluation and Exploitation phase:

Step 1: Select the right communication and dissemination activities

Step 2: Perform project evaluation and impact assessment

Step 3: Support exploitation and long-term sustainability

The main issue in this phase is:

- **Ensuring impact.** The work of a Science Shop needs to go beyond a report on the research results. Even if the dissemination and exploitation of research results are the main responsibility of the communities that raised the issue, the Science Shop can help them in planning dissemination, communication and exploitation activities and be involved in these activities to encourage the exploitation of results by using its expertise, skills and social contacts. Some CBPR projects may have a minor impact on their local community or some disadvantaged social group, e.g. to enable the NGO's or communities to better serve their members or the social group that is represented by researching the demand for services or preparing the design of the children's playground. Other projects may achieve a bigger impact in the long-term, e.g. establishing a specialised school, improving the quality of drinking water, etc.

More information: SciShops deliverable 2.5 “Existing Science Shops assessment” (Stanescu et al. 2018).

4. Quality management

One of the biggest issues for Science Shops is research quality management, especially in cases when research is entirely made by students, interns or volunteers. Quality of research is usually one of the reasons why NPOs and community organisations are sceptical towards requesting research from Science Shops. However, Science Shops have developed several ways to ensure the quality of research:

- **Supervisors.** When research is entirely carried out by students, interns or volunteers, it is important to ensure that their work is supervised by an experienced researcher, which could be a lecturer at a university or other higher education institution, or someone from the Science Shop staff with experience in research. It is obligatory in cases where a Science Shop project is undertaken as a part of training course requirements that the students receive course credits.
- **Consultants.** When there is a lack of some type of knowledge (on the research topic or methods, or otherwise), it is worthwhile to involve external consultants who can help to solve the problems arising and answer research related questions (e.g. consultants from a consultancy company, professional organisation or other professors with expert knowledge of the topic).
- **External stakeholders,** especially civil society organisations which supply the research requests. Their participation in all research activities (formulation of the research question, creating research tools, collecting and analysis of data, interpretation of results) can validate the conclusions and result in better and more appropriate recommendations.
- **Advisory board.** Establishment of an advisory board for CBPR projects, which involve different stakeholders, can also improve the quality of research by developing consensus on the research question, methods of investigation, and data interpretation.

Aside from the quality of research, it is also important to ensure quality of the whole CBPR project management. There are at least two ways to achieve this:

- **Regular communication** among those involved in the project implementation. Such communication is an indispensable part of any project management process. This may require weekly or biweekly meetings face-to-face or online, depending on the need; sometimes there is a need to communicate more frequently than at other times. Regular communication meetings can be a useful opportunity to plan and discuss activities as well as provided feedback to the coordinator.
- **Evaluation** of project management, which can be internal (performed by the project team) and external (performed by someone outside of the team) and can use

quantitative and qualitative approaches. This question is addressed in more detail in Training module 6.

5. Challenges of CBPR

There are a number of challenges related to CBPR. Some of these challenges relate to stakeholder engagement (they are presented in Training module 4, “Stakeholder engagement”), some are more related to research methodology and implementation. The latter challenges are discussed here as distinct challenges, even though they are interrelated with barriers for creating successful partnerships (Israel et al., 1998):

- **Questions of scientific quality of the research.** Community-based research is continually challenged by the questions raised regarding its validity, reliability, and objectivity for both basic research and evaluation research. The predominance of the scientific method may make it difficult to convince academic colleagues, potential partners, and funders of the value and quality of collaborative research.
- **Proving intervention success.** The success of a particular intervention in a community-based research effort may be difficult to prove. For example, such interventions are often conducted in communities with multiple interventions, and it is difficult to tease out the effects of the particular intervention being evaluated.
- **Seeking a balance between research and action.** Creating a balance between research and action that is mutually agreed upon by the partners involved is not a matter of deciding between research versus action, but a question of emphasis and timing. Community members are frequently, although not always, more interested in how the data promotes community change rather than using the data to address basic research questions.
- **Time demands.** The active involvement of all partners in the research process, including questionnaire development, survey administration, and feedback and interpretation of data, exacts a tremendous commitment of time from all participants. Community members may well have many other obligations and may perceive some of the issues of concern to researchers (e.g. sample size, generalisability) as less than pressing.

The main recommendations or facilitation factors to overcome these challenges are (Israel et al., 1998):

- **Methodological flexibility and different criteria for judging quality.** Given the aims and the dynamic context within which community-based research is conducted, methodological flexibility is essential; that is, the use of methods that are tailored to the purpose of the research and the context and interests of the community. Furthermore, different criteria for judging quality, as well as different techniques for establishing the trustworthiness of data have been proposed such as triangulation, involving multiple sources of data, methods, and investigators.

- **Involvement of community members in research activities.** The involvement of community members in the actual conduct of the research enhances the quality of the process and the results. This may include, for example, involving community members in the development of research instruments, as well as hiring and training community members as interviewers for a community-based survey.
- **Conduct community assessment/diagnosis.** A key factor facilitating the successful conduct of community-based research is the ongoing analysis of community strengths, resources, structure, and dynamics. This continual process of getting to know the community enhances the relevance and appropriateness of all aspects of the research and intervention.
- **Conduct training on CBPR.** Given that community-based research is a different approach from what many researchers, community members, and policy makers are accustomed to, the conduct of training that addresses both process and methodological issues, as well as advantages and limitations of this approach, can be useful.
- **Involve partners in the publishing process.** The involvement of partners in the process of writing and publishing has been suggested as a way to obtain more in-depth discussions, reflection and increased understanding of the methodology, results and overall process of conducting community-based research. Community and practitioner partners can be involved, for example, as co-authors in a writing team, as respondents to initial manuscript drafts, or as reactants to preliminary data analysis and interpretations.

Interactive exercises

Interactive exercise 1. “Benefits of CBPR to different stakeholders”

Aim: This exercise helps to understand the benefits of CBPR and the expectations of different stakeholders.

Number of participants: not limited; participants are asked to form 5–6 groups.

Duration: 15 min.

Process: Participants work in groups. Each group takes the role of one of the stakeholder groups, e.g. university, researcher, community organisation, policy maker, student, etc. (cards with different roles can be prepared in advance and each group blindly picks one card). Every group reflects on what the benefits of CBPR to their chosen stakeholder are.

Wrapping up: Groups are asked to present the results of their discussions. The instructor finishes with a summary/discussion about what are mutual benefits and what benefits are specific to some types of stakeholders.

Interactive exercise 2. “Plan your own CBPR project”

Aim: The exercise helps to understand the logic of planning of a CBPR project and experience the different perspectives of different stakeholders.

Number of participants: not limited; participants are asked to form groups of 4–5 persons.

Duration: 60 min.

Process: Participants work in groups. Each participant takes on the persona of one of the stakeholder groups, e.g. researcher, community organisation, policy maker, student, etc. (pieces of paper can be prepared in advance, each assigning the different roles, and participants can blindly pick one of them). Every group develops a project based on a specific community request for research and using the SciShops.eu Project Model Canvas¹.

Some examples of community challenges:

- **Water quality.** Members of the local community are concerned about the drinking/tap water quality and approach a research group to help them with this issue.

¹ The Project Model Canvas was used by Pedro Russo in SciShops.eu summer school held in Castelldefels, 16-20 July 2018.

- **Multilingual children training.** Parents in the local community are concerned about the language teaching methods for their multilingual children and approach a research group to help them with this issue.
- **Child obesity.** Members of the local community are concerned about the rise of child obesity in the community and approach a research group to help them with this issue.
- **Wildfires.** Members of the local community are concerned about the increase of wildfires in the community and approach a research group to help them with this issue.
- **Roma minority integration.** Researchers approach a local community to study the causes of the poor situation of the Roma minority in that community. Researchers (among them, two of Roma origin) are also interested in the potential solution to the problem.
- **Biodiversity.** A local beekeeping community approaches researchers to study the decline of bees in the community. They are also interested in potential mitigation actions.

Participants are asked: How would you (as a group) develop a Science Shop project? Please fill out the corresponding components of the SciShops.eu Project Model Canvas.

The SciShops.eu Project Model Canvas is included in the Appendix.

Wrapping up: Groups are asked to present their prepared plan on a specific community request. The trainer leads a discussion on the benefits and challenges of this exercise and its respective results.

References and further reading

Literature

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