Impact guide

From 'A method that works' to 'A method that inspires'

The Wageningen Science Shop has had a long run facilitating research projects. Over time, we've had to convince funders that we have an impact and that there is value creation in the work we do. Impact is, as you might know, an elusive concept, and difficult to quantify: how do you put numbers to your contribution to a learning curve, or how do you visualize the ripple effect that a meaningful conversation can have? In an effort to grasp these and more, there are myriads of impact assessment methodologies, and new ones are still being created.

By facilitating projects, being in contact with our commissioners, putting care into the outcomes, and seeing the consequences of our collaborations, we've seen over and over again that we do create positive change, and thus we have an impact on society. We've developed a method that works. From this moment on, we can fine-tune our approach, evolve with the times, and most importantly, inspire other research practitioners. We are moving on from "a method that works" toward "a method that inspires".

We present you with a deep dive into the Wageningen Science Shop, aimed at providing some inspiration for other research practitioners at WUR. An inspirational guide, if you will. First, you will be introduced to Science Shops and community-engaged research, and the thrilling and political history behind them. You will also be introduced in detail to our way of working: what our core pillars are, and a step-by-step guide to the acquisition and execution of our research projects, from beginning to end.

Hopefully, as a researcher or research facilitator, you can discover new or alternative ways of approaching your research process. Based on this, maybe you can try something new, like incorporating one (or more!) of these steps into your way of working. Maybe our steps cannot be applied to your process, but you can find ways to embed our rationale into your way of working. Maybe this is just a document that will show you how there are other approaches to research within this very university. There are many possibilities, but in any case, regardless of who you are and what your field is, we hope to evoke a sense of inspiration and creativity.

Science Shops & Community-Based Participatory Research (CBPR)

Science Shops

A Science Shop is an organization that performs free research projects with and for non-profit groups in society by responding to their questions or needs. It is a concept born in the 1970s in the Netherlands, with a two-fold goal: to raise public awareness of scientific research and to give society direct access to research and technology.

Since then, Science Shops have expanded outside of the Netherlands and evolved in many ways, adapting to their specific environments. Some are connected to a university or research institute, some are independent, and some are connected to non-profit organizations. Some involve only students, some involve researchers too. Some are dedicated to specific research fields, some are broad in their scope. Some don't even call themselves Science Shops but carry out tasks of the same nature. The heterogeneity is palpable and has shown the diverse and creative ways in which the space between science and society can be navigated. Currently, there are approximately 80 Science Shop-like structures in Europe and 20 more around the globe[1].

Community-Based Participatory Research

These Science Shop-like structures are organizations facilitating or performing Community-Based Participatory Research (CBPR). The concept of participatory research was born in the 1970s as a way to make science more relevant and empowering for underprivileged communities. It gained traction in countries in Latin America, Asia, and Africa, and was a response to mainstream economic developments failing to reduce poverty and inequality. It also gained traction when feminist and Marxist thinkers started defining and criticizing structures of power that produced knowledge from a so-called "ivory tower", far from the majority, maintaining and exacerbating power imbalances by serving a very narrow and elitist agenda. At its birth, participatory research was characterized by actively including the people being studied (as well as their popular knowledge), a focus on power and empowerment, and a marked political stance[2].

What started as a radical political act of empowerment has now been integrated into mainstream academia, and different approaches have evolved: participatory action research, citizen science, community-engaged research, or community-driven research (to name a few). Once again, there is a lot of heterogeneity when looking at the specifics, but the main premise boils down to the same principle: striving for meaningful and responsible methodologies whilst involving societal groups in scientific research. A typical classification of approaches is based on the level of societal engagement:

High engagement	Empower	The whole process is lead by direct decision of the non-experts. At times the researchers can be consulted, but not mandatory.
	Support	Societal actors are in the lead in the research initiation, they are supported by researchers or institutions.
	Collaborate	Working together on research initiation and/or execution, so there is co-ownership of the project.
	Involve	Creating opportunities to contribute to deliberations and research activities or to contribute te research execution.
	Consult	Requesting visions on research processes, facilitating contributions and structured discussions.
Low engagement	Discuss	Sharing information about research and opening up channels for discussion.

Image adapted from SciShops.eu[3]

Relevance today

These participatory ways of approaching science are still relevant today. Scientific and technological developments increase exponentially and have massive implications in our societies, e.g. vaccines, artificial intelligence, or genetically modified crops. Yet the mainstream research model still follows an agenda set by governments, companies, and experts: science still occurs in an ivory tower, secluded from society.

Science and technology are essential human practices that must serve everyone, and not just the selected few. Furthermore, it has become clear that addressing the complex social and environmental issues of today requires a scientific practice that includes as many different perspectives as possible[5]. Yet today, amidst the 'post-truth era', science continues to be a black box to the majority, contributing to mistrust and resistance to advances.

Efforts to communicate science as a way to create bridges seem to be suboptimal, still based on the conventional information-deficit model – the idea that the public will accept and endorse scientific and technological advances if only the information on the matter is provided to them. In the hope of "developing a collective intelligence for problem-solving"[5], other approaches to scientific research that build trust, create tangible impact, and democratize the scientific process are still needed.

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The Wageningen Science Shop

The Wageningen Science Shop started in 1985, like many other Science Shops in the Netherlands, as a response to overwhelming student protests in the 70s. Since then, we've facilitated community-driven research with and for civil society, free of charge. We are embedded in the Corporate Value Creation at WUR, more specifically within the Team Knowledge for Society. In this team, we are surrounded by people who are dedicated to translating research into tangible, positive change in society. Within this context, we have defined one goal and worked towards that goal according to 5 core pillars.

Wageningen Science Shop DNA: goal & core pillars

Our goal: To create direct societal impact and to enrich WUR's research agenda by empowering small non-profit organizations through involvement with scientific research.

Our pillars:
1 Questions come directly from society.
2 Take questions from Dutch non-profit organizations or social enterprises with limited financial means. These questions need to fit into the expertise of a WUR researcher.
3 There is a strong educational component to our approach: we involve students, delivering real cases to work on.
4 Impact-driven: the process and the results are envisioned and designed to create positive change, both in society and within the university.
5 Open science: results are always available for anyone to access, with no paywall involved.

'Both studies have yielded full-term results and Amsterdam can follow up with the top 40 spaces that have been determined.'

Paul de Dooij | GPA

Our impact

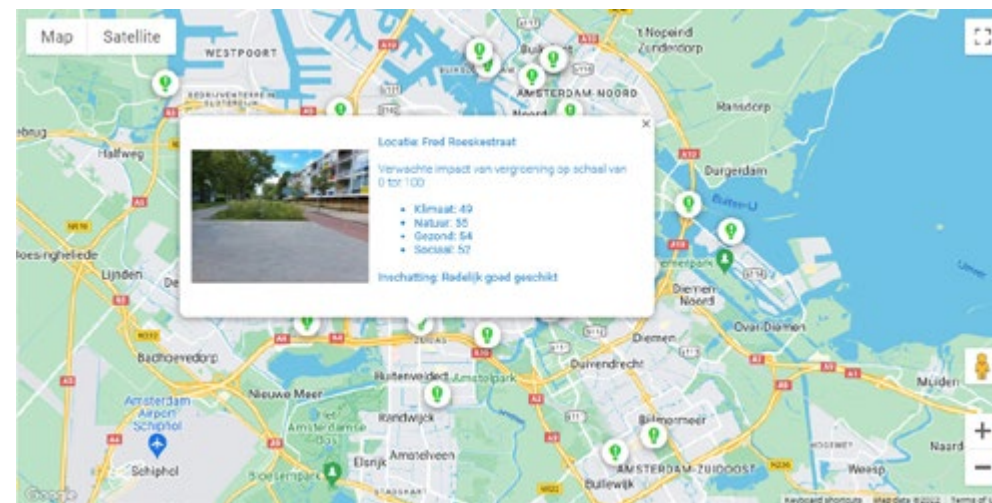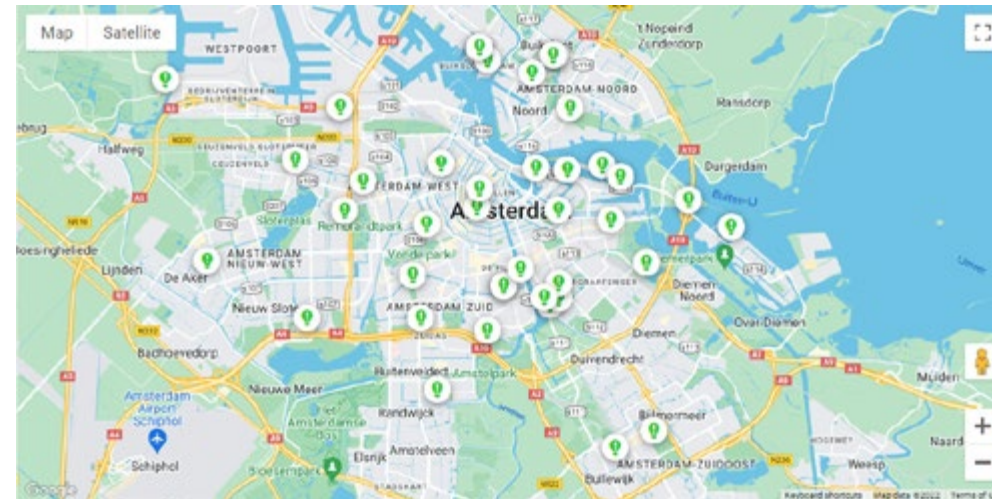|		2018	2019	2020	2021	Visualization
	New questions	69	65	74	74	
	Ongoing projects	43	47	52	51	Funnel
	Finished projects	14	15	17	19	
	of wich…					
People	Commissioners	18	16	18	19	
	Students	126	123	169	154	
	Researchers	26	34	46	41	
	Other stakeholders	52	58	62	76	
Outputs	Reports	12	3	8	13	
	Student projects	31	24	47	23	
	Scientific publications	2	1	2	0	
	Presentations	68	27	39	39	
	Brochures & factsheets	8	8	10	6	
	Dialogues	0	3	4	2	
Themes	Food production	13	18	17	19	
	Green transitions	10	6	7	7	
	Rural & Urban Environments	11	14	11	10	Donut
	Nature & Culture	4	4	3	10	
	Food & Health	5	5	14	5	
	Total	**43**	**47**	**52**	**51**	

A couple of case studies

Grassroots regreening of the city of Amsterdam (+ need to choose a picture)
How can communities contribute to healthy and livable cities in the face of urban densification? The non-profits *De Gezonde Stad* and *Groen Platform Amsterdam* (GPA) joined forces to figure out how they could develop new (small) green spaces in the city of Amsterdam. Together, they reached out to the WUR Science Shop and started a research project to map potential

areas for greening the city. The project was special because the process to decide which criteria have to be considered when creating such a map was co-created with locals, in an iterative process that included local initiatives in every step, from data collection to final validation of proposed locations. In short, a participatory GIS (geoinformation science) approach was developed and implemented.

As a result, 40 optimal potential greening spaces were validated and visualized in an inspiration map (Figure). *De Gezonde Stad*, carrying out a program to co-create pocket parks with different stakeholders, immediately contacted neighbors of potential sites to offer support in greening their area. The municipality of Amsterdam used this map as input for their own development project of 100 new green spaces in the city. For a few sites, meetings have already taken place between the municipality and local communities to assess the type of greening that could take place. Furthermore, this participatory project also resulted in a scientific publication (link?) that can serve as an inspiration for scientists, policymakers, and other stakeholders to link bottom-up initiatives and local government priorities for healthier and more sustainable urban environments.

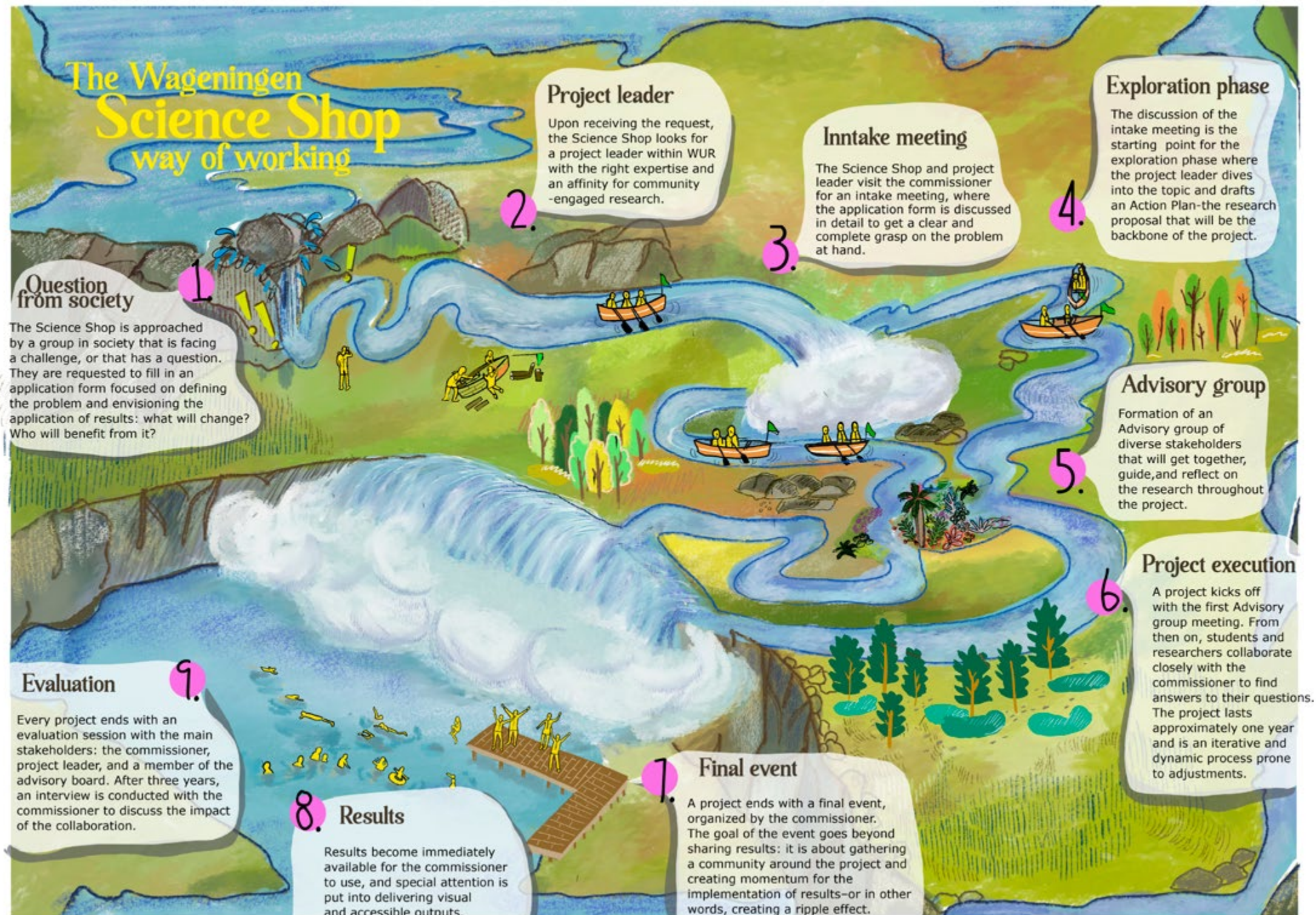Buurtgroen020.nl/inspiratiekaart

'I always mention the Science Shop when I discuss our work with other parties. The fact that I went through with my plans is largely due to the Science Shop. I wish the same for other organizations.'

Robert Greene | HungerNdThirst Foundation

Our way of working

The Wageningen
Science Shop
way of working

1. Question from society

The Science Shop is approached by a group in society that is facing a challenge, or that has a question. They are requested to fill in an application form focused on defining the problem and envisioning the application of results: what will change? Who will benefit from it?

2. Project leader

Upon receiving the request, the Science Shop looks for a project leader within WUR with the right expertise and an affinity for community -engaged research.

3. Inntake meeting

The Science Shop and project leader visit the commissioner for an intake meeting, where the application form is discussed in detail to get a clear and complete grasp on the problem at hand.

4. Exploration phase

The discussion of the intake meeting is the starting point for the exploration phase where the project leader dives into the topic and drafts an Action Plan-the research proposal that will be the backbone of the project.

5. Advisory group

Formation of an Advisory group of diverse stakeholders that will get together, guide,and reflect on the research throughout the project.

6. Project execution

A project kicks off with the first Advisory group meeting. From then on, students and researchers collaborate closely with the commissioner to find answers to their questions. The project lasts approximately one year and is an iterative and dynamic process prone to adjustments.

7. Final event

A project ends with a final event, organized by the commissioner. The goal of the event goes beyond sharing results: it is about gathering a community around the project and creating momentum for the implementation of results–or in other words, creating a ripple effect.

8. Results

Results become immediately available for the commissioner to use, and special attention is put into delivering visual and accessible outputs.

9. Evaluation

Every project ends with an evaluation session with the main stakeholders: the commissioner, project leader, and a member of the advisory board. After three years, an interview is conducted with the commissioner to discuss the impact of the collaboration.

a meandering river by Becca Arredondo

1

The Science Shop is approached by a group in society that is facing a challenge, or that has a question. They are requested to fill in an application form focused on defining the problem and envisioning the application of results: what will change? Who will benefit from it?

Community-driven
The initial question that sets the research in motion comes directly from civil society. This means that, through our projects, it is civil society that sets the research agenda and decides what will be researched within WUR. In this process, we democratize research, enrich WUR's portfolio, and tune into topics that society deems relevant.

Implementation
The red thread that links all steps of the process is the implementation of results. From the very beginning of the process, we ask the question: how will results be implemented? Our main aim is not to generate scientific papers or reports, but to enable positive, tangible change within society. Implementation or application of results, as well as impact, continue being discussed at every step of the collaboration.

2

Upon receiving the request, the Science Shop looks for a project leader within WUR with the right expertise and an affinity for community-engaged research.

Project VS Process
Project leaders will be managing not only the content of the research, but also the collaboration process. The distinction is key, as the two are equally important for the success of the collaboration. The Science Shop offers support to the project leader in terms of process management: internal communication, network management, active dissemination of results, assessment, and impact evaluation.

3

The Science Shop and project leader visit the commissioner for an intake meeting, where the application form is discussed in detail to get a clear and complete grasp on the problem at hand.

Co-creation of knowledge
In this interaction, the experience of the commissioner is central to the development of the research question. It is from their perspective that the issue is tackled; it is the stepping stone for the rest of the research project. It is in this moment that we get out of our ivory tower and span boundaries (academic vs layperson, rational vs experiential) to start a process of co-creation.

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4

The discussion of the intake meeting is the starting point for the exploration phase, where the project leader dives into the topic and drafts an Action Plan – the research proposal that will be the backbone of the project.

Action

As its name indicates, the Action Plan goes beyond a research proposal: Science Shop projects are action (or impact) oriented. We explicitly make a plan for the application of results, the change that is expected, who will be affected, etc. both inside and outside of the university. Although we acknowledge that this plan is not definitive, it urges all actors involved to think of the change that will be created.

5

Formation of an Advisory group of diverse stakeholders that will get together, guide, and reflect on the research throughout the project.

Democratization

The careful assembly of an Advisory group can enrich a research project by bringing different perspectives to the table. It is a way to ensure responsible and meaningful research for many different actors. Varied (and sometimes even conflicting) interests are welcome and desirable, as they will create a very critical research process from the very beginning.

Reflexivity

Periodic Advisory group meetings allow for an iterative and dynamic way of working, where new developments can be discussed, and new arrangements can be made accordingly. This wide array of perspectives ensures a critical lens on the project, which can result in adjustments or deviations from the original plan. modified accordingly. This flexibility is key to ensuring that the questions of the commissioner are answered and that we will create positive change together.

6

A project kicks off with the first Advisory group meeting. From then on, students and researchers collaborate closely with the commissioner to find answers to their questions. The project lasts approximately 1 year and is an iterative and dynamic process prone to adjustments.

Student involvement

Students are involved in every project in different ways: Academic Consultancy Training (ACT), cases in BSc and MSc courses, internship, or thesis. Their contribution is a win-win situation for the process: they are provided with real-life cases with tangible impact on society, and the research benefits from their innovative and fresh perspectives on the issue.

Cross-pollination

A wide and varied amount of stakeholders are involved at different stages of every project: students, researchers, practitioners, citizens, industry, government... This diversity allows for a cross-pollination of ideas and perspectives that enriches the research.

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7

A project ends with a final event, organized by the commissioner. The goal of the event goes beyond sharing results: it's about gathering a community around the project and creating momentum for the implementation of results – or in other words, creating a ripple effect.

Community

Gathering all stakeholders involved in the project with a feeling of celebration (and not just dissemination of results) creates a fertile environment for connecting in ways that go beyond the project itself. New synergies can be made to follow up on the project, implement results, connect with new people... The celebratory environment fosters a feeling of connection with the project and with the community around it.

Ownership of results

The final event is hosted by the commissioner, in the place where the commissioner is based. This brings the whole project community to the place where results will be implemented, stimulating a feeling of ownership over the project and its results, and empowering the commissioner to use the momentum and the results to create impact.

8

Results become immediately available for the commissioner to use, and special attention is put into delivering visual and accessible outputs.

Open science

All Science Shop results are accessible and available for anyone to use – not just the commissioner of the research. This is an essential part of a more responsible and democratic scientific process.

Accessibility

Reports full of scientific jargon can be an important barrier separating science from communities and exacerbating power imbalances. Presentations, visuals, infographics, fact sheets, and other understandable outputs contribute to the production of science that is attainable to anyone.

9

Every project ends with an evaluation session with the main stakeholders: the commissioner, project leader, and a member of the advisory board. After three years, an interview is conducted with the commissioner to discuss the impact of the collaboration.

Learning

The evaluation process gives the Science Shop essential feedback to learn and grow. It is important to take the time to look at what went well and what went wrong to continue evolving and attain our goal successfully. This reflexive exercise makes the Science Shop way of working dynamic and adaptable.

Aftercare

The final interview (three years later) emphasizes not only our focus on impact, but also on aftercare: we acknowledge that the commissioner's mission doesn't end where our project ends, and this interview is an opportunity to look back at the whole journey, reflect with some perspective, and check on the status of their progress – including opportunities for follow-up collaboration.

References

1 Livingknowledge.org. 2022. *Living Knowledge: Partners*. [online]
   Available at: https://livingknowledge.org/174/ [Accessed 9 August
   2022].

2 Encyclopedia.com. 2022. *Participatory Research | Encyclopedia.com*.
   [online] Available at: https://www.encyclopedia.com/social-sciences/
   encyclopedias-almanacs-transcripts-and-maps/participatory-
   research#:~:text=Participatory%20research%20integrates%20
   scientific%20investigation,members%2C%20and%20to%20
   democratize%20research. [Accessed 9 August 2022].

3 https://www.sciencedirect.com/science/article/pii/
   S0160791X01000513?casa_token=11BLi9D4_
   wIAAAAA:HxUpp6seD8mayRINH_
   Xzo8mSlwId7MZX49Yu66D8BTcChFaHthsTxdG3SD6MFjhWBpI0faNery4
   *Practitioners who challenged conventional top-down approaches to
   international development pioneered CBR several decades ago. In the
   early 1970s, researchers—primarily in Asia and Latin America—began to
   question the reductionism of most research, and its inability to solve the
   myriad problems individuals were facing. Working with oppressed
   communities, researchers began to collaborate with community members
   in designing and implementing research projects that had direct
   relevance to their struggles.*

4 SciShops.eu. 2022. *Home - SciShops.eu*. [online]
   Available at: https://www.scishops.eu/ [Accessed 9 August 2022].

5 https://unesdoc.unesco.org/ark:/48223/pf0000379949.locale=en

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