TIP Working Party

CO-CREATION PROJECT

2019-2020

Case study from Belgium

BrusSEau - project on water management in Brussels

OECD

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ABSTRACT

BRUSS EAU
Brussel sensible à l'eau

BrusSEau (Brussel sensible à l'eau (or Brussels sensitive to water) is a research-action project (2017–2020) supported by a transdisciplinary team composed of a non-profit organisation (EGEB), three research centres (Hydr - VUB, Lieu and Habiter - ULB), two architecture and urban design offices (Latitude Platform and Arkipel) and a private company (Ecotechnic).

BrusSEau is based on a hydrological and social observation: the recurrence and the importance of floods, are essentially linked to the strong impermeability of soils and to the recuurent overflow of the unitary sewage network during heavy rainfalls.

These floods primarily affect the districts located in the lowlands, largely inhabited by already precarious populations. They are mainly linked to the saturation, during stormy events, of the combined sewer system by runoff waters. Far from being resilient, the current hydrotechnical system and its management appear as a deadlock. This water management does not take into account the heterogeneity of the territory and urban planning takes currently little account of rainwater; this does not allow the territory to be resilient in the face of high intensity storm events. However, this hydrological system is meant to face additional constraints in the future such as the intensification of soil waterproofing, global warming with its increasing risks of stormy episodes and finally, an increase in the density of population related to the increase demography.

Thus, our main question is: How to establish water management (i.e. a technical problem, confined to a small circle of experts) as a political problem involving a larger collective? Our basic assumption is that there is an interdependent relationship between the decentralization of water technology and operations and the decentralization of water management. However, it is possible to manage water on the basis of practices, also referred to as source management, decentralized over an entire catchment area, relying on low intensity technologies, appropriable by the inhabitants. It is therefore a question of wondering what is required for the collective development of new trajectories for rainwater management, withdrawn from the sewage network. To what extent such an approach brings added value compared to conventional solutions and management methods? And if by chance, these decentralized practices manage to collectively offer advantages, can we transform them in common practices?

In order to answer this, we need to accumulate a lot of knowledge: regarding decentralized devices that can handle rainwater, adapted to the specificities (geomorphological, hydrotechnical, political-institutional, socio-economic) of the territories, but also by taking into account and taking advantage of citizen expertise, field that is not deepen in Brussels. We propose to develop such practices jointly with residents by co-creating Hydrological Communities (HCs)(or Living Labs), located upstream and downstream of the valley. These HCs will experiment through the lens of three socio-technical devices, all which include participative designs:

- *The implementation in public and private space of tools for measuring hydrological flows,their appropriation by the inhabitants and thereby their involvement in a scientific diagnosis(WaterCitiSense)*
- *The development of iterative workshops in urban blocks where residents and architecture students will study together the potential of devices aimed at a more sustainable urban block, in hydrological terms.*
- *The design of New Urban Rivers, based on collaborative cartography workshops to engage in valid and achievable proposals (NRU) in terms of rainwater management.*

These already unusual tools, and completely new combined together, will, thanks to the close collaboration between project partners and the inhabitants, develop a new expertise(hydrological, historical, technical, etc.) refined and territorialized, as well as demonstrate the effectiveness of decentralised and participative systems for urban rainwater management. In doing so, BrusSEau will explore the economic potential of these systems (development of rainwater, creation of new jobs linked to their management) and will test the hydrotechnical capacity of the Region to accommodate them; and will promote solidarity between residents and support the development of citizen skills and expertise. BrusSeau aims also to encourage the emergence of a new, sustainable, resilient and participatory policy that is more sensitive to water.

1. GENERAL CHARACTERISTICS OF THE CO-CREATION INITIATIVE

Name of the initiative*: Brusseau, Brussel Sensible à l'Eau (Brussels sensitive to water)

Start date*: 01/01/2016

Expected end date*: 31/03/2020[1]

Country/ies where partners are based*: Belgium

Project budget *:

Share of budget co-funded by partners: /

Share of public funding (please provide details of the public authorities providing support): 100% (INNOVIRIS, Center for Innovation & Research in Brussels Capital-Region)

Share of budget co-funded by VC or other sources (please specify): /

Main focus (please select)*: Participative action-research project, which includes citizen science and transdisciplinarity

Goal and objective of the co-creation initiative

1*. What is the vision of the co-creation initiative?

Our main question is how to make water management (a technical problem, confined to a restricted circle of experts) a political problem (in the sense of polis) involving a larger collective? Our fundamental hypothesis is that there is an interdependent relationship between the decentralization of water technologies and the decentralization of the management of the latter. When democratising the knowledge and questions of water management in the city, by involving a larger collective, one can more easily shift from a technical problem, confined to a restricted circle of experts, to a political problem that can lead to a new model of governance.

This project is the result of the merger, at the request of INNOVIRIS (part of the selection process), of two projects that had submitted an expression of interest form as part of the Co-create 2016 call for projects[2]:

- BrusSEau - Brussels sensitive to water (2016-COCO-09), presented by EGEB
- WaterCitySense (2016-COCO-49), presented by HYDR, VUB

Other partners involved in the co-creation project were related to one of these projects, on the basis of previous research projects and initiatives. All partners have thus agreed to pursue within the frame of the currently presented project in order to gather a steady consortia. The initiative has not been revised since then.

2*. What are the main objectives of the initiative?

Close collaboration between the project partners and the inhabitants is meant to develop new knowledge (hydrological, historical, technical, etc.) that will be more fine and territorialized, and that is in capacity to demonstrate the effectiveness of decentralized and participatory systems for the management of rainwater. In doing so, BrusSEau will explore the economic potential of these systems (development of rainwater, creation of

[1] The current consortium has been developing a new project proposal (Brusseau Bis) that aims to move further the research results produced during Brusseau towards operationalization.

[2] Starting with 2015, Innoviris, Co-create programme is financing each year several projects aiming to support innovation through a co-creation process by linking science and society in the Brussels Capital Region. More information about the call (in English): https://innoviris.brussels/co-creation. Or about the funded projects (only in French and Dutch): http://www.cocreate.brussels/

new jobs linked to their management) and test the region's hydro-technical system to be able to accommodate them; promote solidarity between residents and support the development of skills and citizen expertise. BrusSeau will also encourage the emergence of a new water policy that is more sustainable, resilient and participative and above all more sensitive to water.

There are no plans to commercialise a product or service. The goal is more to explore and deliver an innovative methodology for urban planners in terms of water management.

3. What are the main motivations of the different partners to collaborate in this initiative (e.g., need for finance, competences and skills, network & connections of partners, risk sharing)?

Main motivation is to gather a set of interdisciplinary yet complementary skills and competences, in order to explore cross-thinking and transversal research. Research can thus be performed at all scales, geographical (valley, sub-catchment, household) as well as societal (institutions, academics, inhabitants). The set of skills is meant to range from group animation to technical reports, from data modelling to architectural plans.

Functional roles of co-creation partners

4*. Please fill in the table below with the following information:

	A.	**B.**	**C.** Location			**D.** Main activities						
	Partners for co-creation	Project initiator(s)	Local/regional	National	International	Priorities setting	Research	Designing products	Experimentation and development	Commercialization / Support (marketing, consultancy, etc.)	Product launch	Financial engagement (share of funding, %)
Firms:												
Service	2		2						X			
Manufacturing												
Research organizations:												
Public research institutes	1		1				X		X			
Universities	3	X	3				X		X			
Civil society:												
Non-governmental organisations (NGOs)	1	X	1			X	X		X			
Personal engagement												
Government:												
Public authorities												
Government agencies												
Transnational organizations												

Notes: The project is meant to focus on specifically limited territories, population and context within the Brussels-Capital Region.

5*. Were there any conditions to participate the co-creation initiative? (e.g. amount of funding provided, data sharing conditions, type of expertise, etc.)

Main eligibility conditions were set by the funder INNOVIRIS. For instance, all partners[3] must be based within the Brussels-Capital Region (BCR), entities outside the BCR can be associated to the project but without funding, the project can carried out by an individual partner or a consortium and one main coordinator among the partners should be set as responsible for the internal coordination.

Internally, although no clear conditions were set for partners to integrate the project, the intention was to gather diverse types of expertise on water management in order to widen the research scope as much as possible and to build up solid results. No additional partners can be integrated in the consortium during the funding period.

For each co-creation partner, please, provide the following information:

6*. Name of organization and its scope of activities (local/regional/national/international) and website (if available)

7*. Please explain the rationale of involving this partner in the co-creation project

8*. Please explain the role and main responsibilities of this partner in the co-creation project

9*. What is the financial engagement of this partner in the co-creation initiative (i.e. what is the share of funding they provide overall and for each of the activities of the co-creation project)?

There is no financial engagement for any of the partners

1/ EGEB (États Généraux de l'Eau à Bruxelles)

The General States of Water in Brussels are a citizen association whose objective is to make water an urban common good. In other words, the idea is to create the conditions for a co-management of this element and in particular of rainwater and runoff. On the basis in particular of the concept of New Urban Rivers (NRU)[4]. In addition, for several years, the EGEB have been developing the concept and application of the Solidary Watershed which links the inhabitants of the bottom of the valleys with those of the top. The EGEBs work in a cross-sectoral and transdisciplinary fashion. The transformative action of EGEB is recognized and supported by Brussels-Environment.

Specific missions:

- General, scientific and administrative coordination, setting up Round Tables and Conferences; creation of communication tools[5], communication (internal and external); links with public authorities; translation work;
- Animation of Hydrological Communities; mobilization of networks, meeting in neighbourhoods; preparation of residents for Round Tables and other conferences; extension work;

[3] The partners need to be small-medium Enterprises, non-profit organisations, research organisations or local and regional administrative authorities.

[4] NRU is composed of a set of hydrological devices integrated in the urban landscape of low technological intensity (rainwater tanks, ponds, rain and storm gardens, infiltration wells, roundabouts or floodable tree stands). Connected to each other, these devices manage stormwater through infiltration, slowing down, harvest or evapotranspiration. NRUs make it possible, in case of rainfall, to manage stormwater "where it falls", and to avoid run-off and consequent flooding.

[5] Brusseau project website: www.brusseau.be (only in French and Dutch), Facebook Group https://www.facebook.com/groups/1761589657420986/ and Facebook Page for the exhibition https://www.facebook.com/Brusseau-Expo-112102113533670

- Animation around hydrotechnical elements; support for the establishment of co-creation moments, preparation of Map-it[6], support for the outreach of inhabitants.

2/ HYDR, Hydrology department of the VUB (Vrije Universiteit Brussel)

The hydrology and hydraulic engineering laboratory (HYDR) of the VUB has acquired over the years a solid expertise in the decentralized modelling of hydrological phenomena on the scale of watersheds (including in urban areas), so many from a quantitative point of view than from a qualitative point of view. Thanks to the use of advanced imaging technologies, the laboratory is able to describe the urban landscape very finely, thus allowing the simulation of hydrological events at different scales (local and regional). In addition, the HYDR laboratory has extensive experience in validating data from field studies.

The VUB's hydrology and hydraulic engineering laboratory (HYDR) is primarily responsible for the following two missions:

- The establishment and monitoring of citizen observatories (WaterCitiSense) in which the inhabitants are no longer considered passive or as victims of extreme hydrological events, but are actively involved in monitoring and analyzing water flows. This feature includes the installation of dozens of instruments at privates in order to set up the hydrological diagnosis. Citizens are then invited to co-interpret the collected data to better understand the local influence of water flows on their flood issues, thus to build up stronger proposals. A tailor-made technical device suited to specific situations, made up of low-cost sensors, will, in addition to citizen observation, improve our knowledge and awareness.
- Detailed analysis of the urban landscape in relation to a high definition simulation of hydrological flows: a high resolution characterization of the urban landscape is now necessary if we want to correctly model the hydrological responses during rainy events, not only to simulate the flow / overflow but more so to have a better picture of the potential storage capacities of the urban landscape, and / or to determine the critical thresholds of the values which trigger undesirable hydrological responses.

3/ LIEU Interdisciplinary Laboratory for Urban Studies, ULB (Université Libre de Bruxelles)

LIEU brings together geographers, historians, architects and town planners, sociologists and arts and literature specialists who are passionate about urban questions. In particular, LIEU seeks to highlight the tensions at work in the production of urban spaces, by focusing on sociability, struggles and minority experiences (present and past) in cities. It is also a meeting place for urban knowledge, including one produced outside the academic world (by associations, administrations or private companies). It organizes open research seminars, field visits and is intended to act as a relay for public debates.

Specific missions:

- Collection and preparation of presentation documents and files specifically related to the New Urban Rivers (historical documents, maps, diagnostic walks, etc.)
- Link with the theoretical framework
- Specific research on the history and geography of the territories of the Living Labs / Hydrological Communities, that is to say: surveys in the

[6] Map-it is an open source collaborative mapping method. After an exploratory guided walk, the Map-it workshops offer participants the opportunity to map on a plan of the visited area, using a series of sticky icons, the findings, problems and opportunities related to the presence water in a territory. When the plan is covered with icons, remarks and comments, common diagnoses of the water issue as well as new urban design proposals emerge.

archives (particularly at the municipal level) to reconstruct a water memory (including cartography, iconography); Meetings and recording of privileged witnesses.

- Critical analysis and perspective of the experience in relation to the theoretical framework and to foreign research and work.
- Specific missions related to communication: reporting and publicizing the experience to university audiences (seminars, workshops) and Brussels institutions (study day, public events); contribution to the written materials resulting from the project (brochures, website, publications, etc.); synthesize the results of research and make them known (scientific articles, etc.)
- Supervision of project archiving

4/ HABITER

HABITER is the Center for Studies in Development, Territory and Landscapes of the Faculty of Architecture La Cambre-Horta dedicated to the study of the dynamics of transformation of landscapes, cities and territories of North and South of the world. HABITER develops its research activities in connection with the two other pillars of the university mission, namely teaching and service to society. The approach developed within HABITER is characterized by attention to the context - from the scale of the architectural object to that of urban, landscape and territorial systems - and to the socio-political, technical and spatial systems existing or to be implemented to ensure innovative forms of development, linked to new benchmarks for territorial development, governance and landscaped and ecological town planning.

The experience of the HABITER research center in various territories on research projects or services to society, will bring to the Brusseau project an integrative vision (governance, social and environmental) of the difficulties suffered by urban areas in the transition to an environment resilient and healthy lifestyle. Added to this, the HABITER center will support the evaluation and link the approach and results of the Brusseau project with international experiences such as, for example, that of the development of the "Water Sensitive City" in Australia. The centre's expertise in the field of architectural research will bring new working methodologies for the development of projects anchored in the reality of the territory monitored.

5/ LATITUDE, Platform for Urban Research and Design

Latitude is an association conducting interdisciplinary urban analyzes bringing together urban designer, graphic designer (communication), anthropologist, environmental engineer, hydrologist, etc. It designs and conducts participatory processes with diverse audiences (residents, young people, local authorities, etc.), develops tools facilitating participation and consultation with major players, masters knowledge of many national and international practices in terms of water management and regional planning, and is conducting expertise on the theme of "public space and social stability". In addition, the association puts its expertise at the service of public policies based on strategies designed and tested in situ with local stakeholders.

Latitude offers expertise in the practice of participatory design, which requires the commitment of residents for the realization of water management systems at the level of the urban block. Latitude’s experience on alternative water management measures will be used to relate the social / participatory and technical / hydrological dimensions of the Brusseau project. In this sense, Latitude will participate in the development of integrated water management scenarios, which will be inspired by the process of participatory design and tested by the hydrological model.

6/ ARKIPEL

Arkipel is composed of architects. The office targets its projects on the basis of relevance and transversality in terms of sustainable approaches, targeting eco-construction in the holistic sense as well as the societal approaches involved. The field of competence developed touches architecture as much in its materiality according to the principles of sustainable construction, the reasonable choice of construction materials, life cycle analysis, recovery as in other aspects such as registration in the territory, alternative water management, taking into account biodiversity, health, waste or energy.

Arkipel has also been involved for several years in the reflection linked to the concept of the New Urban Rivers which allows to recreate and reinterpret the water paths in the heart of the city, itself reorganized in terms of watersheds. This reflection aims to act directly on the risk of flooding and to recreate a water cycle in an urban environment.

Beyond the role of designer, the team relies on a participative approach and in-depth training of its interlocutors, who empowered thus become partner-expert.

Specific missions are:

- Preparation and animation of participatory mapping workshops following the Map-It methodology allowing to realize observations around the issue of rainwater in the urban context and to collectively develop scenarios of alternative rainwater management in public space and New Urban Rivers.
- Graphic syntheses in the form of maps, block diagrams of technical solutions and technical details.

7/ ECOTECHNIC

The main area of expertise and activities of EcoTechnic is the development and provision of equipment and services related to water management, from the most classic and standardized equipment to tailor-made technical equipment according to the needs of customers and users.

Due to its position as a technically involved player in the field, Ecotechnic will take charge of certain "material" parts during the studies. Installations, controls, readings of results and monitoring of piezometers, flowmeters, water sample collectors. These operations, followed by reports and interpretation of results, complemented by video or human network inspections, are information likely to better identify and analyze the problem encountered on a case-by-case basis. In addition to the facilities, Ecotechnic will provide training for other stakeholders (from hydrological communities) in the field.

2. MANAGEMENT STRATEGY

10*. Who is responsible for co-creation process management?

As only funder of the project, INNOVIRIS represents the head process manager of the co-creation. Nevertheless, EGEB (partner n°1) is assigned to conduct and insure internal process management. The members of EGEB are sharing the responsibility of the project management in parallel to their other project related tasks. No administrative personal has been hired for the project. The project does not have a fixed physical centre. Regular meetings are organised at the individual office spaces of the partners.

11*. What is the frequency of interaction between co-creation partners? (please select)

Regularly

Plenary sessions are set monthly (sometimes twice a month). The plenary sessions aim to discuss main results from the fieldwork, to establish future workshops and presentations, to set working groups for specific issues, to set the agenda of the project

and to discuss project management issues. Other meetings of the designated working groups, involving often several partners, are regularly set within the month, according to the ongoing topics of research. Meetings mainly take place face to face and are held in the offices of Ecotechnic, EGEB and the universities' campus.

12*. What are the main means of communication among co-creation partners? (Please choose all appropriate answers)

a) Official meetings at the end of the reporting period (monthly plenary sessions usually held in the same place)

b) Sharing of newsletters, documents, reports, publications (by mail or through a shared cloud)

c) Digital tools (email communication)

d) Conferences, workshops, etc. engaging external stakeholders (several times per year)

e) Personal meetings (on a regular basis)

13. Is there a partnership agreement for the co-creation initiative? Yes

13A. Is the agreement formalised? Yes

13B. Please specify the type of the agreement:

a) Legal agreement

13C. Are legal issues related to the ownership of jointly developed IPRs settled in a partnership agreement?

No

14A*. Who is the owner of data from the co-creation initiative?

Data is meant to be considered as Open-source

14B*. Who is the owner of IP from the co-creation initiative?

No legal owner defined

15*. How is the process of accessing research results (for partners) organized?

Physical and virtual reports posted on a Cloud service - Google Drive.

16*. How do you set the balance between data sharing and IP protection?

/

17. Is public access to either co-creation results or products granted?

Yes. This aspect is conditioned within the funding agreement by INNOVIRIS

18*. What types of intellectual property (IP) protection mechanisms are used (e.g., patents, trademarks, industry design, utility model, complexity)?

18A*. What types of IP are more important for your co-creation processes?

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3. PROJECT EVALUATION

19*. Are milestones and key performance indicators (KPIs) set for the co-creation initiative?
YES
19A. Are they settled in a partnership agreement? YES
19B. Are they essentially qualitative or quantitative? Qualitative
19C. Please provide the main KPIs (provide up to 5 indicators)
Main milestones:

- Milestones around hydrotechnical and urban ecology elements: Specifically in terms of design, dimensioning, implementation location. Results are presented in the form of tables, sketches and reports
- Milestones around Hydrological Communities (living lab) and social and economic dimensions: In terms of citizen participation and experimentation of the living lab, but also on the impact of this organisation in terms of empowerment, knowledge acquisition and political repercussions
- Milestones around governance: Evaluation of the impact of co-creation within the current decision sphere and organisation.
- There are no quantitative indicators in order to reach the milestones. Achievement is function of the relevance of the research (named "situation") and orientation is driven by both partners and HC, potentially also function of opportunities.

20*. At what stages is the evaluation implemented? (Please choose all appropriate answers): Interim / Ex-post

For each evaluation stage, please, provide the following information:

20A. What approaches are used?

Advisory committees, organised by the funder (INNOVIRIS) occur yearly to evaluate the scientific and activity reports (once per year). The committees are composed of representatives of INNOVIRIS and selected external experts, different each time and often researchers from Belgium and France selected by INNOVIRIS from a list proposed by Brusseau's partners. The objective of the committee is to verify the timeline and identify potential shifts within the research process. A support group is also made available all along the project for assistance, but also for merge potential issues and opportunities with other co-creation projects in the Brussels Capital Region. The group is selected by INNOVIRIS and it aims to facilitate collective learning and the dissemination of the knowledge produced in a transversal dynamic among the funded projects. More particularly, the support groups facilitated the interaction between Brusseau project and Phosphore project (bio-waste management) for sharing the challenges and tactics employed to interact with institutions in the Brussels Capital Region.

20B. What types of data are used?

On ground measurements, maps, reports, sketches, video contents, modelling results, interviews,...

20C. How is the evaluation process organised? Who is responsible for it? Are there any external evaluations conducted?

The project consortium is reporting on the result of the projects. Evaluation process is organised internally and must meet expectations of the funder through two forms of report: activity report and scientific report. External evaluation is also present during presentation of this last report.

21. Are the evaluation results open (e.g. published on the website, reports, structured databases, etc.) or closed (used only for the internal goals)? If they are open, please specify.

Activity reports are closed and internal to INNOVIRIS supervision board, every 6 months. This is an operational report giving an account of the execution of the project during the last 6 months, while justifying, if necessary, the deviations observed in relation to the updated program. This report is structured around the decided 17 milestones.

Scientific reports are open and published through the projects communication tools (website, open meetings) but also through the funder itself[7]. They are meant to be

[7] https://drive.google.com/file/d/1ET4Ix03ZvG_InmxaJI_aTYXA-TmZFsiO/view?usp=sharing
https://drive.google.com/file/d/1ZD2CzH1cO3QpCHQOU-1ECzu5JZj8V4Sw/view?usp=sharing

delivered annually. This is a detailed scientific report giving an account of the execution of the project and the results acquired over the past 12 months, while justifying, where applicable, the differences observed by the updated program report. The report is meant to be freely composed by the partners and can take the form of a report, a video, an exhibition. Report is then discussed and evaluated through a meeting and presentation.

22. What are the implications of any evaluations conducted so far (e.g., revision of KPIs; suspension or termination of funding; penalties and rewards associated to performance)? Please explain.

These evaluations lead to certain updates in the project programme and the reaffirmation of certain guidelines and focus points. More importantly, results and performance have been acknowledged, leading to the extension of the project for 3 supplementary months, in order to properly conclude the programme and to set up a sequel. Results led notably to the officialization of a partnership with the regional Environmental Agency regarding a neighbourhood-wide hydrological study. They also led to the incorporation of citizen proposals in future plans, although a lack of recognition often remains.

23. What are the key success factors of this co-creation initiative?

Main success factor would be the capacity of partners to deliver substantial results for each encountered research question within the programme. Large range of skills and expertise lead to a solid toolkit to overcome encountered difficulties, both in terms of technical results and by means of communication and upscaling.

Therefore, transdisciplinarity, especially associated to a participative approach, represents a major asset in terms of flexibility and relevant results.

In the other hand, focus on a relatively small regional territory allowed to generate an in-depth research and to share knowledge with relevant actors. Similarly, the team capacity to gather face to face extensively through the project greatly fluidified exchanges and guaranteed an effective coordination and share of work load.

24. Were there any challenges during the co-creation process? Please provide details and explain what caused them.

Although diversity of partners is a great asset, it necessarily lead to the confrontation of different approaches and sensibilities, and thus sparsely to confusion, with the risk of loosing focus on the main research questions. Fortunately, these difficulties have been overcome systematically, through the insurance of constant dialogue and iteration processes with the different partners, including the citizens.

On the participative aspect, it appeared an important challenge to maintain intensity and novelty within the living labs throughout the project. Sometimes inhabitants felt overloaded, mostly intellectually, by the implication in the project. No specific measures were taken although funds have always been available for citizens for retribution. Mainly attentiveness is the key.

25. Based on your experience, what would you recommend to a new co-creation initiative for it to be successful? Please explain the main lessons learned from your experience.

To underline this one more time, I believe transdisciplinarity is capable of insuring success to many co-creation projects. Diversity of expertise, insight, competence and methodology allows to generate fine results for analyses but also for network and communication outside the project. Although it might appear complex and potentially unfruitful, it is a risk worth taking considering the potential impact. I can only recommend to follow this path, insuring that regular meetings are programmed.

I would also recommend such initiatives to insure good communication tools are in place during the project, in terms of visibility but also vulgarisation. Outreaching capacities are essential to deliver clear results and raise awareness about certain problematics. This aspect is not to be neglected.

4. THEMATIC FOCUS: EFECTIVE INVOLVEMENT OF NGOs AND CIVIL SOCIETY AT ADDRESSING SOCIETAL CHALLENGES

How are civil society and NGOs engaged in the co-creation initiative? Provide examples.

Civil society (inhabitants, located up- and downstream of the studied subcatchment, more likely subject to floods) is engaged in the project through the implementation of living labs, called here Hydrological Communities. Implementation of HC results of different activities organised by partners (exploratory walks, neighbourhood meetings) and is function of the different problematics local population is facing, in regards of hydrology. Once these features have been gathered (notably through the Map-It tool), HC are more strongly implemented in order to focus on chosen "situations". After several months, gatherings are regularly organised (around 6 times per year) within delimited subcatchments to experiment and discuss the co-creation process.

At which stages of the co-creation process (e.g. priority setting, research, design, experimentation and development, commercialisation, product launch) is the interaction most intensive? Please explain

Regarding our project, exclusively based on research and experimentation, the interaction peak intensity was quite fluctuant. During the early stages, intensive outreach to gather knowledge and participation was required. This led to many iterative processes with citizens and an important enthusiasm. We thus decided to rely on different committees of citizens for spreading out the agenda, in order to pursue the "on ground" research. Citizens were designated in common according to their relevance within their neighbourhood (member of a specific citizen committee, regularly subject to flood, strong will to engage), with the purpose to link inhabitants up- and downstream of the valley and assemble a Watershed Solidarity, where uphill can play an important role by retaining the rainwater going downhill. Meanwhile, several smaller workgroups we set up. Finally, results lead to important gatherings, around Round Tables and exhibitions, which were meant to deliver publicly the results.

What tools do you use to gather inputs from civil society (e.g. online surveys, social media, organised workshops)?

Workshops, regular meetings, conference, collaborative walks and mapping (Map-It), installation of measurement tools, website, exhibition, reports.

Are there mechanism in place to address possible conflicts of interest? Please provide details.

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Was the participation of civil society and NGOs in the co-creation project useful for you? Why?

Insight of civil society brought essential added value to the project, especially in terms of research. When placing the citizen as an expert of his own environment, it becomes possible to focus the research on a certain problematic and thus to deliver in-depth and relevant results to a concrete question[8]. Creativity emerged through the process and enriched greatly the propositions. Moreover, participatory science allows breaking down the barriers of "hard" science, in order to contextualise other aspects, often external to the domain of expertise (social, sentimental, financial).

[8] In Jette, focus of research has been defined after meeting a citizen committee organised around flood issues. Co-diagnosis was efficiently set up between experts and locals in order to understand the problematic and raise awareness in the municipality. This result led to modification of future plans and to the highlighting of a recurrent issue within the sewage network in this valley: bottle necks.

What are your best practices? What would you recommend to a new co-creation project involving civil society or NGOs?

I would recommend to rely on solid citizen actors on the ground, often quite involved already within their community, while constantly reaching out to more isolated citizens, that are not familiar with such initiatives. The first group insures a successful baton throughout their own social circle and enables to quite quickly engage into participatory research. They are often directly involved within "situations" (active member of community gardens, direct neighbours) and tend to engage intensely in order to link different problematics within their neighbourhood. The second group will allow to refine the findings and lead to more un-suspicioned paths. In total, the project managed to involve around a hundred people, some sporadically, some through the whole process, some victims from floods, some inspiring community actors. Within 3 years, we organised no less than 30 public meetings, often linked to a certain aspect (a municipality, a full gathering round table, phyto-remediation, co-design between neighbours).

5. POLICY CONTEXT

26*. Was the initiative supported by a specific policy initiative? If so, please provide details on the policy initiative and type of support provided (e.g. amount of funding, conditions of support, selection criteria, reporting obligations, etc.).

This project is entirely funded by a public and regional administration, INNOVIRIS. Full support is guaranteed throughout the project and evaluations are frequent.

27*. What are the factors (e.g. related to regulations, policy, business environment etc.) supporting and/or hindering co-creation in your country? Please explain.

In July 2016, the Government of the Brussels Capital Region approved the new Regional Innovation Plan 2016-2020. With this plan, Brussels is aiming to become the capital of innovation. That is why Brussels has also opted for a 'smart specialisation strategy', whereby local forces are supported for the benefit of the inhabitants of Brussels. The plan aims to be the framework of reference for the research and innovation policy and a catalyst for socio-economic development, while also promoting the welfare of the inhabitants of Brussels.

Within this scope, co-creation has been foreseen by INNOVIRIS to be a major contributor to innovation in Brussels.

INNOVIRIS wants to offer another way of approaching the production and acquisition of innovative knowledge. Imagining possible futures, having an idea, asking questions, wanting to change something, proposing an innovation, that's good. But being able to really explore and experience them is better! It is better to understand the paths to take or not to take. And when the journey is over, it is to make the journey to indicate the way and invite others to follow the change. Study market and social policy conditions. Put societal value before profit. Take into account the socio-technical components of innovation and the issues addressed.

Such an institution and such a vision for urban innovation has definitely granted a huge push to engage in co-creation.

28*. What do you think are most effective types of policy support for co-creation?

Co-creation represents a risk for partners, especially in terms of research and participatory actions. Policies must ensure a certain level of public funding is available in order to launch co-creation initiatives.

Urban context is a fertile ground to engage in co-creation as it is still considered as innovative nowadays. Being able to link societal and urban challenges to the co-creation objectives in policy allows to shift to a necessary transition, to enhance resilience and thus legitimate the purpose of such projects.

-------- CASE STUDY AUTHOR --------

Name: Dimitri Crespin
Location (country): Belgium
Affiliation: Hydrologists (HYDR – VUB) within the Brusseau project
Your role in the co-creation process:
Data acquisition and analyse, modelling, empowerment of living labs
Your main activities in the co-creation process:
HYDR is at the origin of the co-creation project.
Focus on scientific contexts and vulgarisation