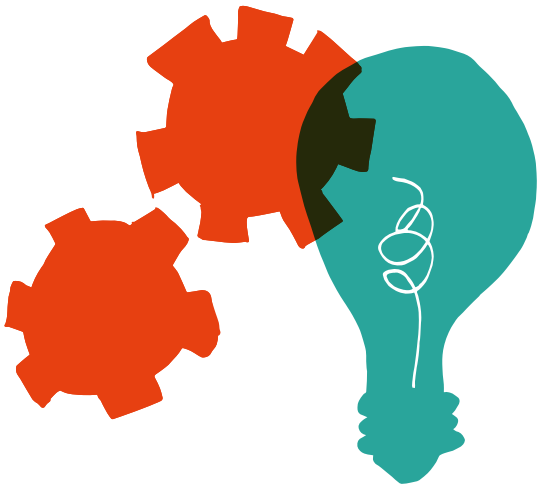
Living-labs for climate-resilient neighbourhood development – a toolbox

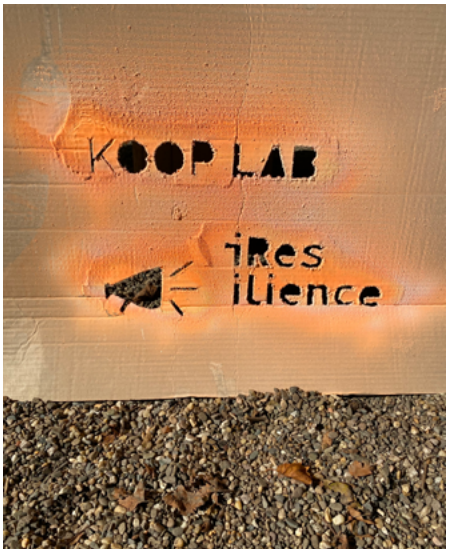
Experience from the iResilience research project

iResilience

für gutes Klima

Contents





Introduction

A toolbox for living-labs as a contribution for climate-resilient municipalities

This toolbox for the development of neighbourhood-based living-labs for climate-resilient urban development is based on the results of the iResilience project. Here we present our *experience* of the *collaborative* work in three living-labs in Cologne and Dortmund. The aim is to share our experience of two and a half years of neighbourhood work in the iResilience project with other cities. This toolbox is aimed at *municipal stakeholders* and describes in a practical way how a living-lab can be developed and run. The ongoing learning and reflection processes carried out by those involved in implementing the living-labs in the local neighbourhoods and their own transdisciplinary cooperation have enabled a *guiding framework* to be created in terms of "learning from each other" for the cities of Cologne and Dortmund, which can also benefit other cities. This toolbox is also intended to help readers answer the question: Would a living-lab be a good idea for our municipality?

Complex requirements for the city of the future

The discourses on *sustainability, urban development, climate change adaptation* and currently also on combating pandemics reveal a complex spectrum of requirements for the *city of the future.*

To help deal with these challenges confidently, cities and the people who live in them both need to have the strength to withstand difficulties as well as the flexibility to adapt. Therefore, the *iResilience* project team worked with local stakeholders in *three living-labs* and looked at how urban neighbourhoods can become more resilient to the consequences of climate change. This toolbox summarises our critical reflection on the concept of *"living-labs for urban climate resilience".* We evaluated our experience of setting up the living-labs and the different event formats we used. The analysis is based on interviews with the participants from the neighbourhoods, questionnaire evaluations and internal team reflection meetings.

Concrete examples from the project illustrate the methods used – these can of course be copied or adapted. Among other things, this toolbox provides insights into how the project team mobilised *local stakeholders* to participate in co-creative event formats, what *collaborative work processes* look like on the ground, and what measures can emerge as a result.

Citizen participation under *pandemic conditions* was a real challenge, which brought the topic of *digitalisation* in living-lab work into focus in a different way to what had been anticipated – this is also described in the toolbox.

This toolbox can only pay a small contribution towards helping decision makers answer the question: Would a living-lab be a good idea for our city? However, it can also *inspire* municipalities to set up their own living-lab as a way to approach the questions of municipal climate adaptation in a neighbourhood-specific way.

The project team found out how individual and varied living-labs can be and how dependent they are on specific local conditions, which means that there can be no such thing as a blueprint for "how to implement a living-lab". That is why this toolbox merely contains *suggestions* and is intended to be *adapted*. It is a starting point for one's own reflections.

What is meant by living-labs in the iResilience project?

© iResilience: tree planting space in Cologne-Deutz, 2020

The starting point for living-labs is often transdisciplinary research and transdisciplinary knowledge. Living-labs were therefore used as a central concept for collaboration within the project:

"Living-labs are a type of transdisciplinary research, i.e., researchers and stakeholders work together on an equal footing, jointly shaping research projects and results through co-design & co-production while differentiating between and integrating different bodies of knowledge, methods and concepts"
(Schäpke et al. 2017, translation by the author)

Reference:
Schäpke et al. (2017): Reallabore im Kontext transformativer Forschung. Ansatzpunkt zur Konzeption und Einbettung in den internationalen Forschungsstand, p. 9: http://www.isoe-publikationen.de/uploads/media/Schaepke-et-al-2017.pdf)

The core requirements for transdisciplinary research and collaboration are that the work relates to socially relevant problems, focuses on the learning process of different academic and non-academic stakeholders and disciplines, and attempts to generate solution-oriented knowledge (cf. Lang et al. 2012). Three types of knowledge are key: system knowledge, i.e., knowledge about the status quo; orientation knowledge, i.e., knowledge of what a desirable future can and cannot look like and transformation knowledge, i.e., knowledge of how to get from the status quo to a desirable future (cf. Schäpke 2017). A further goal of living-lab work is to move from knowledge to action.

The living-lab approach in iResilience is based on designing the living-lab collaboratively with regard to the relevant/desired questions (co-design) as well as jointly finding solutions and implementing them (co-planning) (cf. Ukowitz 2017).

© iResilience: Dortmund Harbour neighbourhood

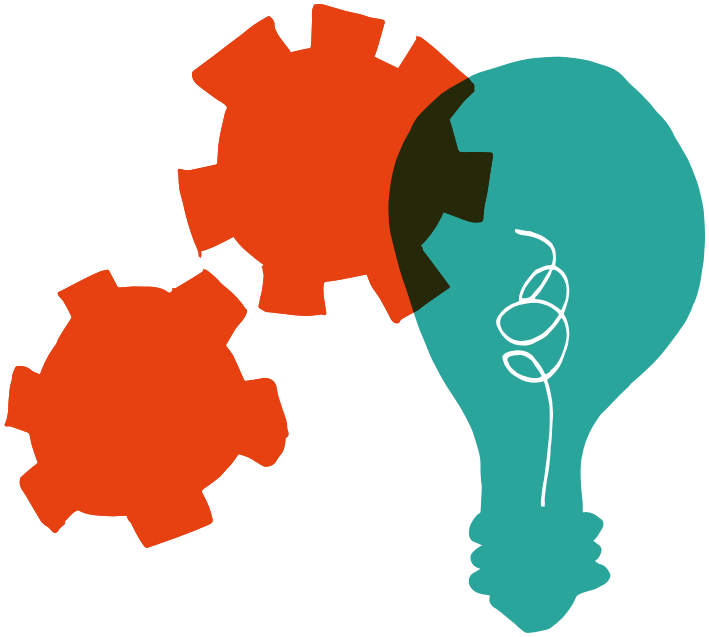
Questions to ask before setting up a living-lab

- What skills are needed in the living-lab team?
- What should be considered when choosing a neighbourhood?
- How can you collaborate with stakeholders?
- How can the collaboration be configured?

What are the benefits of a living-lab from a municipal perspective?

- (Urban) living-labs create the opportunity to use academic knowledge and research methods to gain a different, more open and also neutral approach to transformation and sustainability research topics.
- This scientific approach promotes objective reflection and enables greater systematisation.
- living-lab work reaches new target groups and strengthens the active participation of urban society stakeholders.
- Furthermore, the framework for "trying things out" provides the space and resources for new participatory methods.

These questions are addressed in this toolbox and the experience gained from the iResilience project should provide ideas when answering the questions for your scenario.



References:

Schäpke et al. (2017): Reallabore im Kontext transformativer Forschung. Ansatzpunkt zur Konzeption und Einbettung in den internationalen Forschungsstand, p. 9: http://www.isoe-publikationen.de/uploads/media/Schaepke-et-al-2017.pdf)

Lang et al. (2012): Transdisciplinary research in sustainability science: Practice, principles, and challenges. Sustainability Science, p. 27

Ukowitz (2017): Transdisziplinäre Forschung in Reallaboren. Ein Plädoyer für Einheit in der Vielfalt. In: GAIA - Ecological Perspectives for Science and Society 26 (1), p. 9–12. DOI: 10.14512/gaia.26.1.4)

The iResilience project – social innovations and smart city infrastructures for the resilient city of the future

The project was funded by the German Federal Ministry of Education and Research from 2018-2022 as part of the flagship initiative “Zukunftststadt“ (City of the Future).

The iResilience project team was composed of an interdisciplinary team of academic researchers and public sector staff. The public sector partners were the City of Cologne with the Environmental and Consumer Protection Office (Umwelt- und Verbraucherschutzamt) and the Municipal Drainage Services Cologne (Stadtentwässerungsbetriebe - StEB) as well as the City of Dortmund (with the “nordwärts” coordination unit). In both cities, a full-time researcher was engaged for the project. Among other things, they organised the integration of the various civic departments in the living-lab processes. The Social Research Centre of the Technical University of Dortmund (Sozialforschungsstelle der Technischen Universität Dortmund - sfs) was responsible for the overall coordination. The German Institute of Urban Affairs (Deutsches Institut für Urbanistik - Difu) in Cologne co-coordinated the activities in that city. Other research partners were the Research Institute for Water and Waste Management (Forschungsinstitut für Wasser- und Abfallwirtschaft - FiW) at RWTH Aachen e. V. and the Institute for Energy Systems, Energy Efficiency and Energy Economics at the Technical University of Dortmund (Institut für Energiesysteme, Energieeffizienz und Energiewirtschaft der Technischen Universität Dortmund - ie^3). Supplementary expertise was also provided by HafenCity University Hamburg (HCU) for the fields of architecture and landscape architecture and by the engineering firm Dr. Pecher AG for the field of flood prevention. These experts provided internal planning advice for climate adaptation measures in the living-labs.

New procedures and innovative formats of *collaborative planning* (co-planning) for the development of climate adaptation measures were tested in three living-labs in Dortmund and Cologne. To achieve this, the project brought together citizens, local companies, workers, local authorities, politicians, associations, and initiatives for various events. The aim was to sensitise these local stakeholders to climate change and the consequences for their local area in order to jointly develop protection measures for heavy rainfall and extreme heat as well as to make urban green spaces more robust in the face of climate fluctuations.

Living-labs are part of reality (as opposed to a normal laboratory) and as such must also continuously adapt themselves. For the project team, this meant observing the environment, reflecting on their own actions and reacting flexibly.

Given the complex challenges facing cities, *social innovation* is more important than ever before. It also plays a central role in the iResilience project when it comes to new approaches and formats.

What do we mean with social innovation?

“Social innovation is a new social practice and approach originating from certain stakeholders and aims to solve or alleviate problems or needs better than was possible using previous practices” (Howaldt, Schwarz 2010; translation by the author).

Reference:
Howaldt, J.; Schwarz, M. (2010): Soziale Innovation - Konzepte, Forschungsfelder und -perspektiven. In: Howaldt, J.; Jacobsen, H. (Hrsg.): Soziale Innovation - Auf dem Weg zu einem postindustriellen Innovationsparadigma; p. 87 - 108. VS Verlag, Wiesbaden

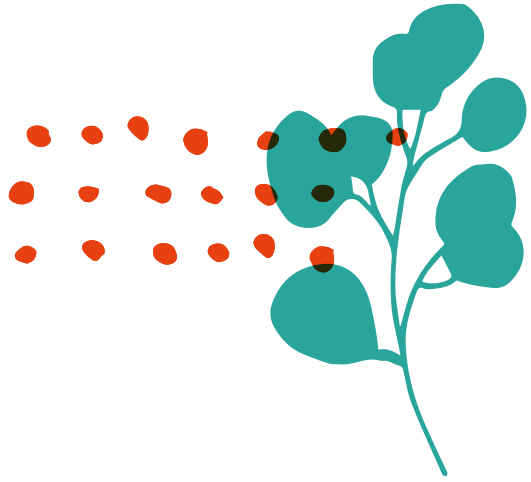
Social innovation is the innovative aspect of the otherwise action-based resilience discussion and focusses on actively changing current practices. Social innovation does not only include a higher degree of participation in planning processes, creating a framework for new citizen ideas or a stronger commitment to a climate-resilient city, social innovation also opens up opportunities for changing behaviour when it comes to dealing with the consequences of climate change, such as using shaded walkways on hot days or working together with other people to create more green spaces in the neighbourhood. Social innovation is crucial for addressing current and future societal challenges, such as climate change. Many socially innovative ideas emerge in neighbourhoods as that is where challenges first become apparent and multiple challenges often occur simultaneously. In the project, new approaches, new forms of cooperation and networking between different people (citizens, local authorities, academics, politicians and business people) were tested as social innovation.

Background to the project

Municipal climate adaptation had already been on the agenda at a political and local authority level in both cities for several years. In addition, other initiatives were running in parallel with the iResilience research project, so that the support and interest were already there.

From spring 2020, the Covid 19 pandemic significantly influenced the living-lab processes in Cologne and Dortmund. Planned events had to be adapted, cancelled or postponed. Unfortunately, staff had to invest time in developing new communication strategies and channels with the same information content and facilities for exchanging knowledge as before. This meant that the project was more digitalised than initially expected. Furthermore, it turned out to be impossible for health sector staff to be involved (e.g., department of health staff or local health care workers).

The weather also influenced the living-lab processes. It was observed that certain weather conditions and unusual occurrences influenced what local citizens were interested in. The project started with a dry spring in 2019, followed by a long, hot summer that lasted into autumn. As a result, issues such as watering urban trees and heat stress on vegetation were brought to the attention of the project team and events on these topics were well attended. By comparison, 2020 was rather cool and wet, which, coupled with the problems associated with the pandemic, made it difficult to mobilise people to get involved in various platforms and online events. And although Cologne and Dortmund were hit much less severely by the heavy rains in June 2021 than other cities in Germany, there was isolated flooding in some urban areas, which temporarily brought the topic of provisions for heavy rainfall into focus.



Reporting from the living-labs in the iResilience project

Preparing and setting up a living-lab

Three living-labs were set up in Dortmund and Cologne in three different neighbourhoods. These were selected, among other things, on the basis of their size, the extent to which they are impacted by and are vulnerable to the climate, and the overarching objectives of the cities. The living-labs in Dortmund-Jungferntal, Dortmund-Hafen and Cologne-Deutz are geographical locations where people from local authorities, private citizens and various external experts came together over a fixed period of time to define and work on a specific problem and learn from each other in the process.

How were the three neighbourhoods selected?

Selecting the neighbourhoods for the living-labs was a joint process between the cities and the academic institutions. The neighbourhoods were selected on the basis of a jointly developed set of criteria:

- Neighbourhoods with high urban climatic stress or a significant need for climate adaptation according to the results of the studies “Klimawandelgerechte Metropole Köln“ (Climate Change freindly Metropolis Cologne) and “Stadtklimaanalyse RVR“ (Climate Analysis RVR) for Dortmund.
- Neighbourhoods with a need for heavy rainfall protection according to the heavy rainfall hazard maps from the municipal drainage services of Cologne and Dortmund.
- Neighbourhoods in need of change/improvement in relation to environment, structural quality, lack of urban green spaces, environmental justice, quality of life for the residential and transit population or revitalisation/re-planning (urban redevelopment, urban renewal), etc.

How can suitable neighbourhoods be selected?

- Preliminary discussions and talks with experts from relevant offices (environmental office, urban planning office, urban green spaces, etc.) to jointly define goals and requirements for the neighbourhood for all institutions involved.
- Analysis and evaluation of planning information maps, heavy rainfall hazard maps, strategies and concepts, master plans, integrated action concepts, etc.
- Stakeholder analysis with regard to associations, initiatives, neighbourhood institutions (e.g., community centres, neighbourhood management).
- Develop a “catalogue of criteria for suitable neighbourhoods” with the broad participation of public offices.

This provides an important foundation for future cooperation: strengthens the basis of trust, forms new topic-based networks and promotes inter-agency cooperation and exchange.

How were key stakeholders found for the work in the living-labs?

The work in a living-lab can only succeed if many individuals and interested parties work together. Therefore, at the beginning it is important to get an overview of the different stakeholders who could take on a (key) role. In principle, representatives from the various municipal departments, representatives of initiatives, associations and institutions or employees of a municipality are all suitable for living-lab work. Stakeholder mapping is an effective way of identifying them.

Before the official start of the three living-lab processes, previously known stakeholders were identified for the topics of urban development, climate change and climate adaptation for each of the respective neighbourhoods. To achieve this, the project team members used their own professional networks, urban databases and internet research.

Short guideline-based interviews were conducted with these people, in which they were asked about further individuals who could be involved (snowball method). This enabled the team to obtain information about associations or private people committed to the neighbourhoods, who were then also approached. For example, they were asked about innovative initiatives in the field of climate resilience in the city and neighbourhood or people who have special knowledge in this field. The aim of the interviews was to find out about the people’s motivation and interest in being involved in the living-lab, e.g., interest in a specific issue, and to discover existing topic-based common ground.

The *aim of the stakeholder mapping* is not to identify all the key figures for the neighbourhood, the city or the issue, but only those who are relevant for the work in the living-lab. Criteria for assessing relevance can, for example, be based on the issue itself or the actual location in the district in question. It is also possible to assign stakeholders to specific groups, e.g., in order to develop targeted strategies.

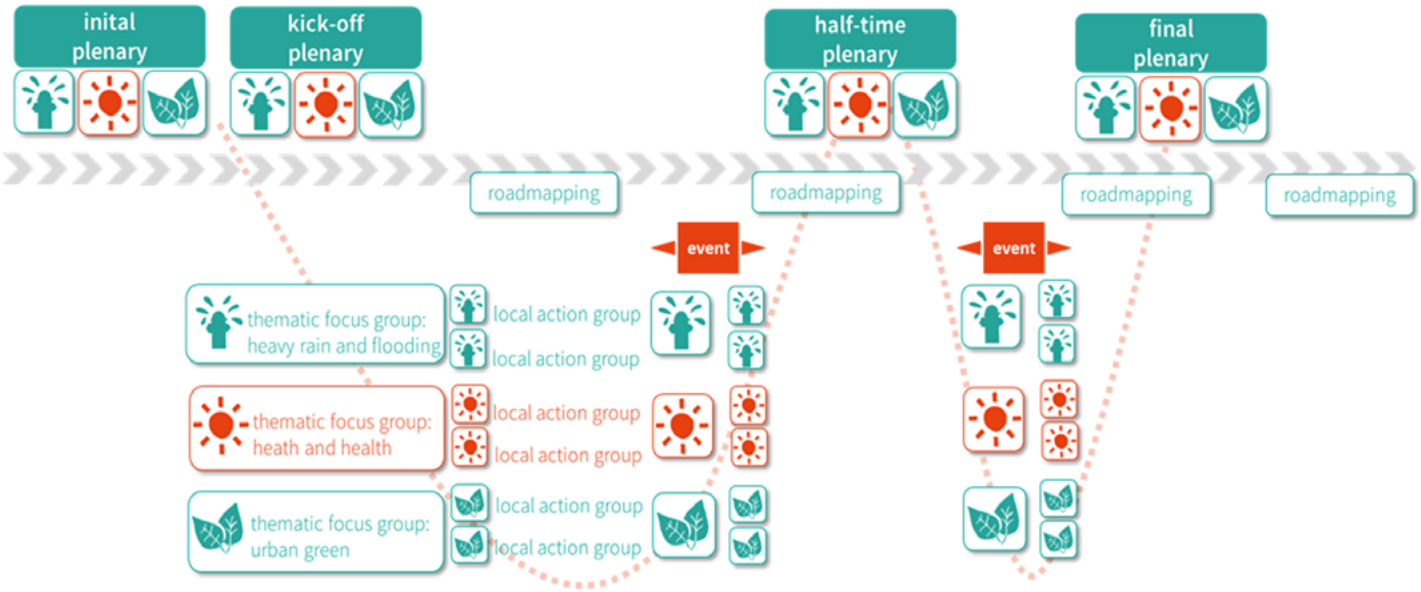
Information on the methods:
> Eckert et al. 2018: Leitfragen für die Gestaltung von Partizipationszpraozessen in Reallaboren. In: Defila, Rico; Di Giulio, Antonietta (Eds.) 2018: Transdisziplinär und transformativ forschen: Eme Methodensammlung, p. 105-136

How were the living-labs structured in iResilience?

All of the living-labs in the three neighbourhoods were structured in the same way. The → **figure on p. 14** shows the different levels of cooperative collaboration in the living-labs and illustrates the theoretical interplay.

The *plenary* format formed the superordinate level. At this level, events were held at which the entire neighbourhood as a living-lab was discussed as well as all content-related topics (heavy rainfall and extreme heat provisions and urban greening). Here experts and interested parties, residents, property owners, tradespeople, municipal representatives (local authorities and municipal drainage services) and members of organisations (associations, initiatives, etc.) came together to discuss the challenges and possible solutions for climate change at neighbourhood level. At the upper level, a vision for the future → **see p. 41** for a climate-proof neighbourhood was developed jointly. The plenary format proved its worth during the project (initial plenary, kick-off plenary, half-time plenary, final plenary). At the beginning (initial plenary and kick-off plenary) it was important to introduce the project content, the team and the goals of the project to a broad audience from the neighbourhood and to collect initial ideas together. Thanks to the broad spectrum of participants, different target groups could be reached, who contributed numerous ideas. These ideas were taken up in the two lower levels (thematic focus groups (thematic FGs) and local action groups (LAGs), see below), where they were teased out and developed in small groups. It was particularly valuable for the process that at the initial plenary, political representatives and executive staff from the local authorities (management) officially opened the living-labs. The plenary format was particularly suitable when it came to continuously developing the "vision for the future" and for presenting the interim and final results from the LAGs.

In the intermediate-level *thematic focus groups* (thematic FGs), the key topics (heavy rain, heat and health and urban greening) were discussed individually in relation to the neighbourhood. The aim of the thematic FGs was, on the one hand, to sort and evaluate all of the ideas for a topic (e.g., urban greening) for further work in the LAGs. On the other hand, all of the experiences and work results from the LAGs should be brought together here for the plenary sessions. This, in theory, was the plan for the thematic FGs. However, this is not what happened in practice: The thematic FGs were only held once in the living-labs as a fixed series of events at the beginning of the process. There were several reasons for this: Although there were numerous proposals for ideas on all three topics from the first two plenary meetings, there were too few participants who wanted to commit themselves to concrete ideas within the framework of the first series of thematic FGs. In the first year of the living-labs, no action emerged at LAG level, so that bundling was superfluous. The project team decided not to carry out the planned second and third series of thematic FGs in order to use more resources to promote the ideas already documented and to address local stakeholders in a more targeted way. Instead, the LAG processes were brought together at the half-time plenary session during Climate Week → **see p. 51**.



© iResilience: Co-planning formats in the project process

The *Local Action Groups* (LAGs) at the lowest level were supposed to work on specifically thrashing out ideas or an idea – this could be site-specific, such as for an area at risk of flooding, or non-specific, i.e. tackling a social issue, such as a lack of support services for senior citizens living alone in hot weather. The central element of LAGs is that people from different stakeholder groups come together, agree on the need for action and co-plan a climate adaptation measure side by side. This can be citizens and employees from municipal departments or from initiatives and retailers, for example.

The ideas for the LAGs came mainly from the thematic FGs, but also from the plenary sessions, or were developed in discussions with the stakeholders. Ideas were generated by the citizens as well as by the employees of the municipal departments and the municipal drainage services. These ideas were the crystallisation points for the LAG processes. Once enough interested parties (usually five to nine people) had been found, the work in the LAG began: At the beginning, the situation was analysed in order to develop a solution. Together, the solution was adapted to the local conditions through an individualised process and then either implemented directly (e.g., the water tanks → **see p. 56** or a social innovation such as the heat help line) or prepared for implementation, e.g., "Kasematten Strasse" → **see p. 62**. The aim of a LAG is, on the one hand, to prepare a climate adaptation measure and, on the other hand, the co-planning process as such.

Co-planning

Co-planning processes enable all participants in the living-lab (including the project team) to plan, develop and test climate adaptation measures together. Allowing (self-)testing and learning together are important goals of co-planning.

How can a LAG be defined on the basis of qualitative criteria?

- At least one LAG participant is personally affected by an issue (flooding or heat).
- The concern or need for action can be located locally.
- There is an idea for a measure and a vested interest on the part of the LAG participants.
- The group of participants is limited to local residents and responsible stakeholders.
- The participants come from at least two stakeholder groups.
- A joint working process is created, co-planning, i.e., several LAG meetings take place.
- The participants work on an equal footing with each other, without hierarchies.

How were the processes and event formats in the project evaluated?

In order to find out whether the work in the living-lab was successful, the project was evaluated. This evaluation consisted of five stages: 1) internal reflection on the project, 2) documentation of the formats with regard to the groups of stakeholders reached, 3) evaluation of the event formats with the help of questionnaires, 4) focus group interviews and 5) counting/collecting results. It should be noted that all stages are equally important. These stages were repeatedly reflected upon during the work and adapted to the circumstances.

The *first component* involved internal *reflection meetings* within the team, this was a central element of the living-lab work. These meetings focused on all the processes in and around the living-lab work in the two cities of Cologne and Dortmund. Here, the experience gained from the three living-labs was compared and conclusions drawn about the external conditions and the participants' own actions.

The different reflection rounds focussed on topics such as: What advantages, but also challenges, are associated with transdisciplinary cooperation in the project? What roles did the members of the project team have in the project and were these always clear? How is the output at the end of the project to be evaluated in relation to the objectives set at the beginning of the project?

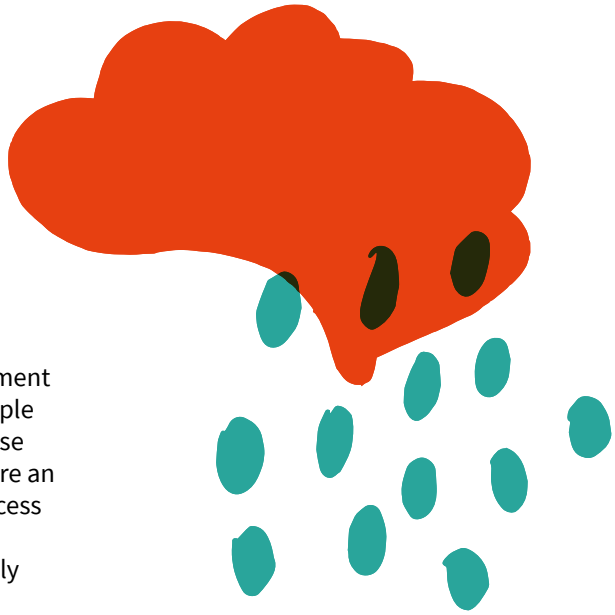
The *second component* is the *documentation* of the different event formats and the stakeholder groups that they reached.

The *third component* is the evaluation of the events (plenary and thematic focus groups) using questionnaires on the *outcomes*. These questionnaires were developed using pre-defined criteria to evaluate and measure the impact of the event formats. These criteria are based on the results of the EU project "SATORI-Stakeholders Acting Together On the ethical impact assessment of Research and Innovation" (Mittelstadt et al. 2014). The focus was on the following *process-oriented criteria* to analyse the work of the participants in the various event formats: Task definition (Was the task and one's own role clearly defined?), Representative process (Was everyone given access to discourse/participation?), Fairness (Did participants feel included in the events and were they able to influence the outcomes?), Expertise (Was enough information given so that participants felt competent enough to participate?), Social learning (Was there a willingness to take other values seriously and to learn from others?). In addition, the participants were asked about how satisfied they were with the format, their own participation, and the outcome. In the first phase of the project (initial plenary and kick-off plenary), *questionnaires* were used to evaluate the plenary format, which were filled out by the participants and the project team before and after the event. These questionnaires were also adapted and used for the evaluation of the thematic FGs. Since further plenaries were held digitally due to the COVID-19 pandemic, an activating method of questioning was used *(Mentimeter)*.

These criteria were also used in the *fourth component*: Focus group interviews to survey the participants of the LAGs (at least 3 per city). Here, too, the focus was on assessing the outcome. Here, interviews were conducted with the participants at the end of the LAG work processes. The questions related on the one hand specifically to the work in the LAG and on the other hand to the whole iResilience project. Focus group interviews are particularly suitable for assessing process-oriented criteria.

The *fifth component* involved counting the products *(output)*. This procedure served in particular to measure the impact of the living-lab work in the iResilience project. The products of the collaborative work were, for example, *visions for the future* for the three neighbourhoods → **see p. 41 ff**. and *three roadmaps* for the development of a climate-proof neighbourhood. In addition, conceptual plans (e.g., the result of the LAG "Kasematten Strasse" → **see p. 62**), the first implemented climate adaptation measures, academic publications and contributions from planning experts can also be seen as products.

Reference:
Mittelstadt, Brent; Coeckelbergh, Mark; Stahl, Bernd; Wakunuma, Kutoma (2014): SATORI Deliverable D12.1. Good practice in evaluation, reflection and civil society engagement.



The living-lab team: What tasks are involved in a living-lab project and what staff are needed?

Living-labs are a method of transdisciplinary research. Transdisciplinary means that not only are different academic disciplines involved in the research, but also people from the everyday workings of the city, e.g., local authorities.

Interface between academia and local authorities

In the iResilience project, it has proven helpful not only to involve the local authority officials as experts, but also to work with them as equal members of the research team. For this purpose, a position was created and funded from project funds in each living-lab city for a research employee, who was employed by the city and the municipal drainage services. They not only represented the city and the municipal drainage services in the research project and externally, but also acted as spokesperson for the research project and liaised with the local authorities.

Contact people for the neighbourhood

Working with the people on the ground in the neighbourhood is a particularly important part of the work in a living-lab. This is why it is particularly important to be present in the neighbourhood and to be recognised by local stakeholders. So, familiar faces in the neighbourhood are needed. These are concrete contact people for initiatives and associations. They involve these organisations in the work and establish where there might be an overlap with other stakeholders, depending on the topic in question. For residents who want to get involved in voluntary work but do not belong to an initiative, there is also a need for contact people who generally coordinate the involvement of the participants and bring people into contact with each other. These neighbourhood contact people are an integral part of the living-lab process and have a significant influence on them. They also (unconsciously and consciously) bring their own personalities to the project with their own interests and contacts.

Public relations and events: becoming visible in the neighbourhood

A living-lab thrives on the participation of many different people, e.g., citizens, initiatives, politicians. In order to reach different stakeholders in the living-lab neighbourhood, public relations people are needed to prepare the relevant information and announcements in a way that is appropriate for the target groups → **see p. 20 sqq**.

Specialist planning experts

For the participating municipalities, but also for the citizens, it is important that there are concrete, tangible plans for measures at the end of the living-lab work or that measures have been implemented. That is why a landscape architect and a civil engineer were part of the team in the iResilience project, who, for example, prepared the detailed plans for ideas from the local stakeholders in the Kasematten Strasse LAG → **see p. 62** and ensured that the proposals made sense and were technically feasible from the perspective of landscape architecture or water management.

Coordinators and

project managers

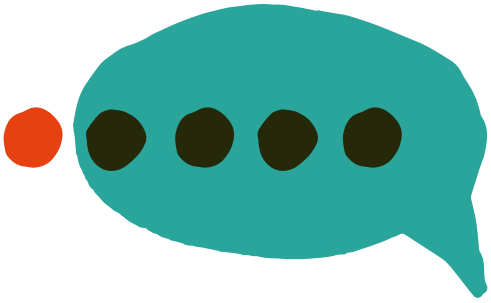
People are needed to keep all the balls in the air and ensure that the work in the living-lab develops in a goal-oriented manner. Coordinating a research project is a challenging task. Knowledge of project management and the handling of funding is essential. When managing a larger project team, the academic partners should provide sufficient resources for project coordination and conceptual work.

Facilitator for internal reflection

Equally, resources are needed for the continuous reflection on the work. In order for the project team to be able to continuously reflect on themselves and their collective work, they need someone to steer and shape this reflection process. This person should not be active in the living-lab work on site, as is in keeping with supervision practices in other contexts.

Integrating the living-lab in the academic discourse

In a living-lab, academia and the real-world conduct research together. The goals are to generate knowledge, to build on successful campaigns and/ or to effect social change. In order to evaluate the results, it is important to have a constructive exchange about what the academic research community and the organisations on the ground, e.g., other municipalities, experienced.



Take note – our experience!
Both when different academic disciplines meet and when academia and practice come together, there can by difficulties in understanding one another. Different disciplines use the same vocabulary, but can mean completely or partially different things, for example: What do you think of when you hear the word “crane”: a bird, a huge piece of equipment to move heavy objects or a movement with your neck?

Take note – our experience!
What motivates academics and local stakeholders to participate in living-lab research should be clarified. For the local stakeholders in the research team, it was important that concrete actions, such as plans for redesigning a street, could be presented at the end of the living-lab work. In the iResilience research project, however, the focus was not on planning structural measures, but on trying out new socially innovative formats for raising awareness and changing practices and habits (behaviour in the heat, precautionary measures). This had to be explained and negotiated with the stakeholders in the neighbourhoods, both internally and externally.

Take note – our experience!
For Cologne and Dortmund’s local government, as well as for the citizens, it was important that “something remains in the neighbourhood” after the living-lab work was finished. The living-lab concept should provide financial and human resources for this.

How did iResilience gain and activate local stakeholders for the living-labs?

Experience from iResilience shows: Not every topic in the living-labs (heavy rain, heat and health, urban greening) is equally interesting and tangible for the people in the neighbourhoods. For example, the project team had to make various attempts to make the topic of heavy rainfall protection relevant for the neighbourhoods. The dangers of heavy rainfall were explained to the citizens both in plenary sessions and in small individual presentations. For this purpose, small-scale heavy rainfall hazard maps were presented in both cities and it was explained to people who could be potentially affected that they can get involved in designing measures for heavy rainfall protection within the framework of a LAG. In the end, heavy rain protection could only be dealt with in a roundabout way by the project team combining it with urban greening. The risks themselves, e.g., the risk of flooding during heavy rainfall, and the presentation of these risks on maps, did not lead to the citizens being mobilised and committed to finding solutions. Experience shows, however, that risk analysis and hazard maps are a very effective tool for local authority staff.

The experience from iResilience also shows that not every stakeholder group can be won over for the work in the living-lab to the same extent. It was observed that groups of people who are already organised in some form (e.g., in associations or initiatives), can be reached better and faster than individuals or households who are not in any organisations. Relevant key people can be found and approached, e.g., through stakeholder mapping **→ see p. 13 stakeholder mapping**, who then establish contact with an organised unit. When working with organisations, however, it must be kept in mind that initiatives in particular often have their own agenda. If they have no or only a few topics in common with the living-lab, there is a danger that attempts to approach them will fall on deaf ears. However, if it is possible to get the group to (partially) engage in the living-lab topic then the cooperation can be very positive.

In addition, it has been shown in some LAGs that the working process can be more fruitful with people who are involved in their professional capacity. Here too, stakeholders who are involved professionally often have their own agenda and it is important to acknowledge any overlap that might exist between their personal agenda and the goals of the living-lab. Once these points of intersection are found, a lively exchange can arise, as these stakeholders take on the work in the living-lab as part of their job.

When working with citizen's organisations, i.e., people who are involved outside of their jobs on a voluntary basis, it should be noted that they have limited time that is often confined to evenings or weekends. In general, however, private participants are just as motivated and committed to the goal. Educational institutions in the iResilience neighbourhoods were strongly motivated but hampered by the external conditions. In the interviews, teachers confirmed that they were very interested in participating in the project. However, they could not be involved due to the pandemic and their complex municipal responsibilities. It is important to identify these complex municipal responsibilities and to nevertheless involve all of the relevant departments from the beginning.

Systematic public relations work in the iResilience project

Living-lab work needs *people who actively participate in the real-lab processes* over a certain period of time. Without this participation, the living-lab will fail. Particularly in view of our experience in relation to mobilising stakeholders, it is clear that targeted public relations work is a must for the success of a living-lab project.

These days, when the majority of the population searches for information in digital media and the internet, having an *online presence* (website/ social media) is also an essential part of the project. Branding and *corporate design*, i.e., a uniform design that is easily recognisable, can also increase the level of awareness of a project. Public relations work, on the other hand, builds relationships and can help to create a positive reputation. In addition, successes and specifically targeted information should be published in press releases.

Right at the beginning of the iResilience project, a graphic design agency was commissioned to design a suitable *logo*, which became an essential part of the image and corporate identity of the project. In addition, they developed a slogan or *claim*, i.e., a short phrase that gets to the heart of the topic. The corporate design was extended to include a series of *symbols* that were instrumental for external communication and were used in particular for posters and presentations. The logo, slogan and symbols were complemented by uniform *typefaces* and a *style guide*, which laid down some basic design standards for the entire duration of the project. In addition, a comprehensive set of *templates* was designed that could be used during the project. *The fact that the flyers, presentations, website and products had a uniform design proved to be very effective.*

Two separate city *email addresses* were also created, one for Cologne and one for Dortmund, which made communication with the stakeholders in both cities more direct. Furthermore, function-specific email addresses helped to clarify the roles of the different project team members in the neighbourhoods. The local authority project team members were thus perceived first and foremost as project members – and not as official representatives of the municipal departments. Using these clearly defined email addresses made it easier to create neighbourhood-specific mailing lists from all of the addresses in the system, ensuring that information was in constant supply.

iResilience

iResilience
für gutes Klima

iRes Nordstadt

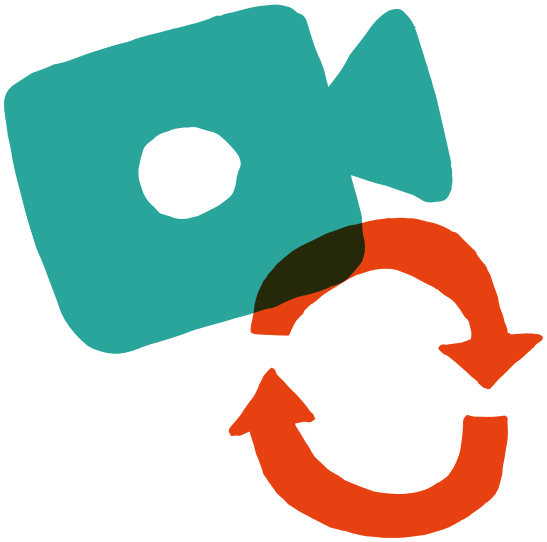
iRes Jungferntal

iRes Deutz

© iResilience: Styleguide (Formkultur)

This form of digital communication was supplemented by an appealing and informative *project website* → **see p. 24**, which was created by an agency in keeping with the corporate design. The project website provided information about the project's goals, the team, and the living-lab neighbourhoods. A blog was used to report on the current work in the living-lab. On the blog, the project team posted detailed reports several times a month with photos about the latest activities from the living-lab neighbourhoods, calls for participation and invitations to events. The website also made it possible to store documents (e.g., event documentation) and to share further links.

Social media was used specifically to target younger people in the strategic public relations work. In addition to the project´s own *Instagram account* → **see p. 26**, other city profiles on Facebook, Instagram and Twitter were used selectively. In order to coordinate the social media activities, a monthly editorial meeting was held to plan the posts and evaluate them with the help of statistics (Google Analytics, Instagram Insights).



Other communication channels were added as part of the strategy, e.g., *the cities' community participation platforms*, where events that citizens can get involved in are posted, or *nebenan.de*, an *online neighbourhood network*. Occasionally, *press releases* were issued for traditional media. A particularly innovative way to publicise project activities was to create animated *videos* using the Vyond software. These were then published on the website and Instagram. The project team also focussed on visibility in public spaces with posters, banners, campaigns and interventions complementing the advertising portfolio.

In the course of the project, it became clear that *extensive public relations work* is more important and time-consuming than was originally assumed when planning the iResilience project. It is advisable to develop an overall public relations and promotion strategy in the first phase of planning a living-lab, which includes e.g., clear task divisions and templates for all formats and channels (e.g., Word templates for blogposts, InDesign templates for posters in various DIN formats). Experience has shown that a public relations specialist should be an integral member of the project team. Experience in communicating on different levels with different target groups (e.g., citizens, politicians) is essential so that the living-lab and all that it is offering is promoted effectively to all stakeholders in the community.

What else should be taken into account?

> It is advisable to discuss in advance which software is available to the project partners as not all participants have access to all software.

> It is worth drawing up a user guide for the corporate design so that all project members are familiar with how to use it.

Profile

ONLINE PRESENCE: WEBSITE

Aim of the communication channel

> Visibility as a publicly funded research project
> Reference point for external parties
> Presentation of project information and results from the two project cities
> Information about participation opportunities for local stakeholders in the three living-labs
> Providing a platform for the results of the events

Description of the communication channel

At the beginning, it was important to make the project accessible to a broad public and to create a public presence. The goals of the website were manifold, the most important being to inform, mobilise and motivate local stakeholders.

There were six sections in total: What it's about, Neighbourhoods, Team, Get involved, Downloads and Contact. The blog was placed under the heading "Get involved". There were three blog post formats: Under "Get involved" there were calls to action, under the heading "Review" there were reports on past events. The last blog format was info posts, which gave tips for extreme heat in summer, for example. All blog posts included at least one picture. The language was easy to understand, but the content was more in-depth than the Instagram posts. Links, e.g., to other blog posts or further information, were also included in the texts.

Target groups

> Citizens in the living-lab neighbourhoods
> Local politicians
> Local authority staff
> Other research projects and communities

Participants

> Permanent editorial team of people who work in the neighbourhood
> Ideally: have a "chief" editor

Work involved

> One monthly meeting to plan and evaluate the communication
> Selecting photos and writing short texts

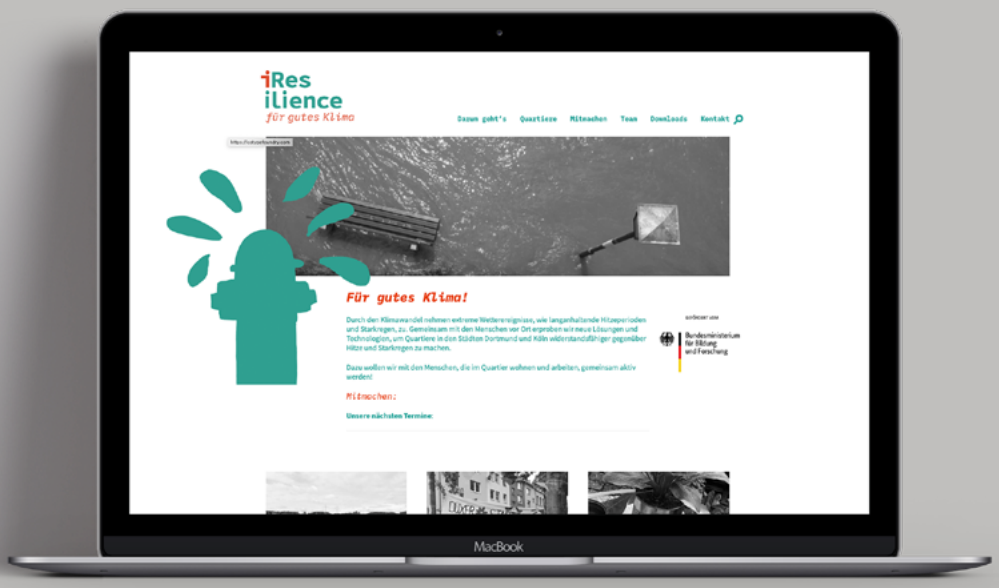
Duration/timeframe

> approx. 1 - 1.5 hours per week for the website contributions

Further suggestions

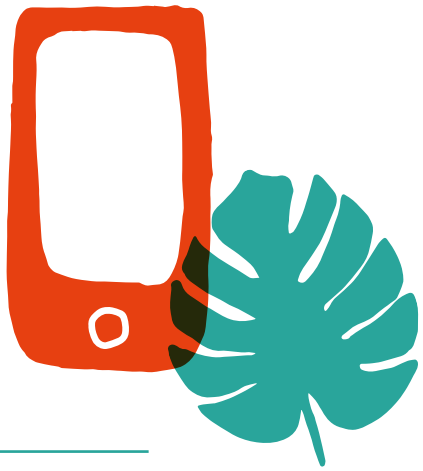
> Use short texts in simple language, even for scientifically complex topics.
> Do not leave too long intervals between posts – continuity is required.
> Blog posts can be used for documentation purposes and local government staff can be referred to the blog posts instead of telephone updates.
> New blog posts should be sent to the mailing list of people interested in the topic and publicised on social media.

The following description of the formats in fact sheets is inspired by the publication of the project »Regen//Sicher«
> https://www.umweltbundesamt.de/sites/default/files/medien/5750/publikationen/2021_01_21_cc_07-2021_komm_starkregen.pdf



Profile

ONLINE PRESENCE: INSTAGRAM



Aim of the communication channel

> Increase awareness through online activity
> Bi-directional dialogue with stakeholders
> Networking with other institutions and projects
> Promotion of events and reporting from the project

Description of the communication channel

The project team had its own Instagram account since the summer of 2020 to systematically inform the active private local stakeholders about the project and to mobilise them for further involvement. The platform was used to report on developments in the project including internal news, e.g., introduction of the project staff, initially as a trial. After an initial positive response (growth in followers and interaction), Instagram was used systematically until the end of the project. Twice a week, posts were published on the current project activities: photos, short reports on the campaigns or events, invitations to events or calls for participation all encouraged followers to interact. The texts, no longer than 100 words, were formulated in simple language and lightened up with emojis. The images were both photos from the project, e.g., of events, activities or locations, and graphics, e.g., event posters. The Instagram stories not only reported on events, but also linked other accounts from the field of climate adaptation, research or press and shared their content. The Instagram account was a business account, as it provides insights (account statistics) for 100 or more followers.

Target groups

> Younger local citizens
> Locally based groups with their own account

Participants

> All members of the project team
> Ideally: Media and communication specialist

Work involved

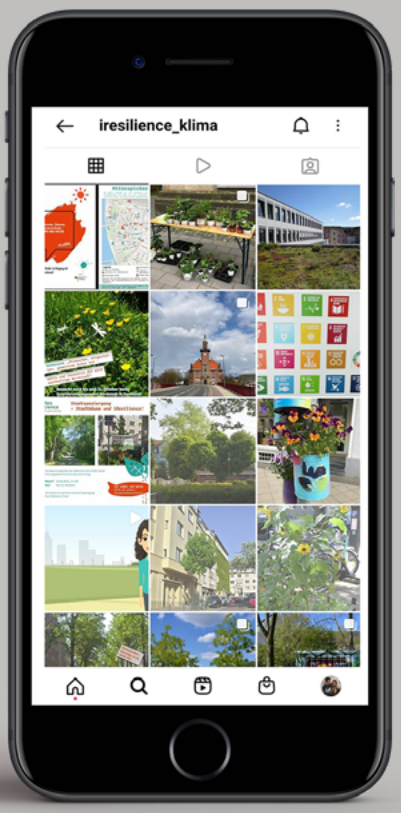
> One monthly meeting to plan and evaluate the interaction
> Select photos and write short texts
> Regularly replying to or otherwise interacting with messages from followers.
> Reposting thematically related content from other accounts

Duration/timeframe

> Two times 30-minutes per week for Instagram posts
> Continuously active throughout the project

Further suggestions

> Use short texts in simple language, even for scientifically complex topics. If necessary, divide the content into part 1, part 2, etc.
> Do not leave too long intervals between posts – continuity is required.
> Formulate the texts with concrete questions for the followers to encourage interaction.
> Introducing project team members with photos promotes familiarity with real people.
> Caution: Some municipal IT structures refuse access to social media – clarify in advance!



Providing updates on the work of the living-lab

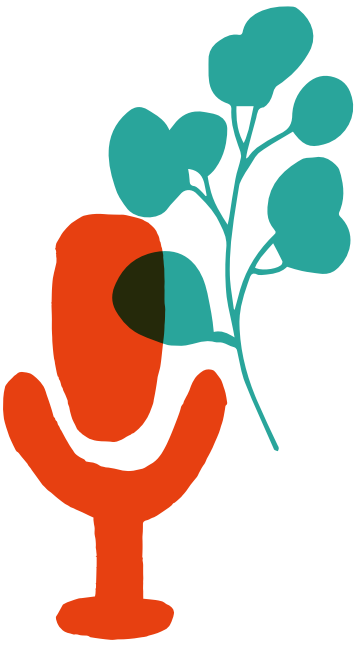
In addition to a website and the use of social media → **see p. 22**, it makes sense to offer another channel to inform people about what is happening. For example, older people, representatives of initiatives, associations and the cities can be kept up to date via mailings: These can be used for announcements about events, distributing minutes of joint meetings or drawing readers´ attention to new contributions on the website → **see p. 24**.

Email addresses were collected at living-lab events with “May we inform you about the project by email in future?”. Alternatively, a corresponding form could be included on the website. In order to send the emails, either one’s own professional email can be used or the project team uses a common email address with the project name, e.g. deutz@iresilience-klima.de. This means that the project team contacts the living-lab stakeholders uniformly as iResilience staff.

Caution: The number of emails that can be sent at the same time is usually limited. If the email distribution list contains several hundred recipients, it is advisable to use an appropriate newsletter service to circumvent the limitation.

If necessary, it is worthwhile having several mailing lists: One mailing list can be for private citizens, to inform them about events and campaigns and to encourage participation. Another mailing list can be used for local authority staff or specifically for the LAGs.

The fact that in both cities there was a person who was employed by the city/the municipal drainage services meant that communicating with the local authorities was easier: These two employees could continuously report on the project e.g., in an inter-departmental working group called “Climate Impact Adaptation”. This committee was able to find representatives from the local authorities for the various LAGs in Cologne.



© iResilience: First contact at the kick-off event in Cologne-Deutz

Quote from a local authority staff member

"I think iResilience is more deeply involved in the actual neighbourhoods than anything we have had before. Well, there are the usual events, where organisations run general information days on various topics, or there are events for experts. But the way they focus on the citizens and enable them to formulate their ideas makes iResilience really stand out. This is not the norm."

(translation by the author)

Quote from a participant

"We had regular Zoom meetings and a mailing list. That also worked well. I felt well-informed at all times. We also communicated well with each other and were a really good team."

(translation by the author)

Profile

STAYING IN CONTACT WITH LOCAL STAKEHOLDERS: MAILING LIST

Aim of the communication channel

> Staying in contact with local stakeholders
> Reporting about the project
> Informing about and advertising the events

Description of the communication channel

In the course of the work in the living-lab, many people came together in different constellations. Some were continuously involved with a high level of commitment, others were only there sporadically. In order to keep all participants informed, to announce events and to refer to the reports on the website about the events, maintaining an email mailing list proved to be very useful.

Everyone (residents, representatives of the local authorities, the municipal drainage services and initiatives) were contacted and informed via this mailing list. The necessary email addresses were requested at events.

The emails themselves should be easy to understand, short and clear. To avoid the emails being rejected, it is not advisable to attach large documents to them, but to offer documents for download, e.g. via the website. In iResilience, there was a mailing list for all volunteers, as well as individual ones for the respective LAGs.

Target groups

> Local authority staff
> Citizens in the living-lab neighbourhoods

Participants

> Permanent editorial team of people who work in the neighbourhood

Work involved

> Approx. half an hour per email, can be combined with blog and Instagram posts

Duration/timeframe

> Continuously active throughout the project
> Event-related

Further suggestions

> Links or references to the website and/or Instagram should be included in the emails

© iResilience: Initial plenary in Dortmund, June 2019
(photos: Social research centre, Technical University Dortmund)

Visible intervention in urban spaces

Temporary installations and campaigns in public space make a particular issue more visible to the wider community. These can be, for example, posters or sculptures that convey messages and initiate communication. Placing them in busy places in the living-lab neighbourhood can potentially reach many people and, because they are temporary, they attract attention, as passers-by notice short-term changes in their everyday environment.

iResilience used these methods mainly to make the project more visible and to encourage people to actively participate in the living-lab process as well as to help shape the developments in the neighbourhood. Different actions were tried out, which differed in terms of how much effort was involved, the support they generated and how much they changed the public spaces.

One such action was to set up a local *information stand on the street*. At information stands the team can talk directly to stakeholders without putting them under any obligation. Interested passers-by were offered thought-provoking information material, such as project flyers and climate analysis maps to take home, thus emphasising the seriousness of the info stand. A *roll-up* with the project logo can be used or *beach flags* can be printed, for example, to make the stand more visible from a greater distance. Personalised advertising materials are also a good idea; iResilience had its own *drinking bottles, logo stickers* and printed plantable *seed cards* to add a positive touch to the networking activities.

© iResilience: “Wanderbäume” wandering trees on parking spaces in Cologne-Deutz

© iResilience: Banners in public space in Dortmund Harbour neighbourhood

Temporary installations in public spaces can attract a lot of attention. In the project, we worked together with the local transport association in Cologne (Verkehrsclub Deutschland Regionalverband Köln e.V. and brought the *"Wanderbaum-Allee"* (Wandering Tree Avenue) to the living-lab Cologne-Deutz → **see p. 49**. Because the wandering trees were clearly visible in car parks in the neighbourhood, they attracted attention and generated interest in the topic of urban greening.

Large-scale banners with bold designs are also effective. They can remain in the neighbourhood for any length of time and just need to be ordered in advance. *Weather-proof mesh banners* were used to display the images of the future in the neighbourhoods and to invite people to participate → **see p. 41** People could register for the events directly using a link to the website or via a QR code. Hanging banners at the LAG location also proved helpful for the LAGs.

Another relatively simple but effective method is to spray graffiti on the ground using *spray chalk*, this can be used to highlight a specific issue or even a grievance in a public space. Short but concise statements in bright colours can attract the attention of passers-by. If the project team is still on site, these colourful messages can be used as a hook for direct contact. It also helps if you have flyers with you that people can take with them. The iResilience team used spray chalk at different events and on different topics, (e.g., to mark the area at risk of flooding on Kasematten Strasse) → **see p. 62**, to announce the wandering trees → **see p. 49** or to draw attention to the new temperature sensors in the Dortmund harbour neighbourhood.

© iResilience: drinking bottle

© iResilience: Roll-ups for on-site events with information about the project

Profile

DRAWING ATTENTION TO THE PROJECT AND THE ISSUE: SPRAY CHALK CAMPAIGN

Aim of the event

> To make the vulnerability of the neighbourhood visible: highlighting heat hotspots
> Increase the visibility of the project in the neighbourhood and generate interest
> Raising awareness: passers-by are encouraged to think about the issue of heat

Description of the event

Urban heat maps show the potential hotspots in the neighbourhood, but do not show whether residents are actually affected. It is not clear from the maps how relevant the locations (heat hotspots) actually are for residents. Armed with chalk spray cans (sustainable!), the project team walked through the streets of the district on hot summer days with interested locals and, using stencils made of cardboard or laminated paper and a large thermometer, they marked all the areas where residents said there was a need for shade and/or greenery. Depending on the target group, other places became heat hotspots, e.g., playgrounds, traffic islands, benches. Identifying and marking climate oases, e.g., unpaved areas with a large shady tree or a fountain can also be part of the action. In this way, the group learned about climate adaptation. The heat hotspots are places where action is needed and local stakeholders can develop solutions together. The focus can be on private, semi-public (e.g., schoolyards) and public spaces. One thing is certain, the active sprayers will be approached by passers-by. This creates the perfect opportunity to talk about the living-lab, the project and of course climate change and climate adaptation. Therefore, it is advisable to have flyers or the like with you to distribute to interested people.

Target groups

> Pupils and children as sprayers
> Families with children as sprayers
> Senior citizens as sprayers
> Passers-by as addressees

Work involved

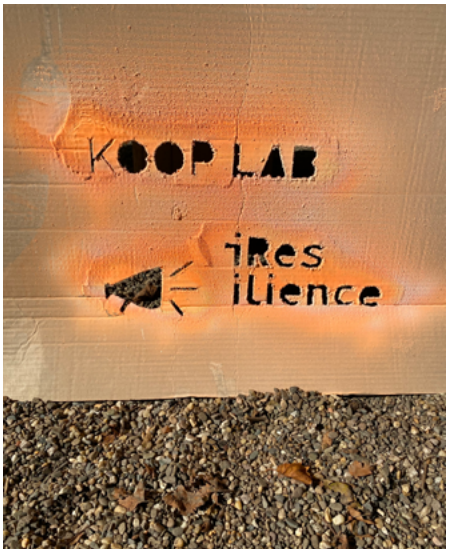
> Organise and purchase spray chalk and stencils (possibly thermometers (more for marketing purposes))
> Call for participation via social media
> Relatively short-term planning with regard to time and place (the hotter the day, the better)
> Story post on Instagram

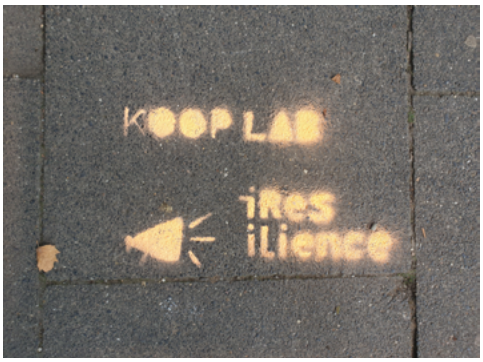
Duration/timeframe

> Event can be flexibly timed, usually 2-3 hours depending on team size
> The graffiti lasts at most until the next rain

Further ideas

> Several groups can participate at the same time.
> Involvement of local politicians or local authority staff generates attention
> Documentation on a (digital) city map
> Hotspots for heavy-rain can also be marked can also be marked
> Potential new tree locations can also be marked





© iResilience: spray chalk campaign at Dortmund Harbour neighbourhood

© iResilience: spray chalk campaign at Cologne-Deutz in September 2020

Neighbourhood walks

iResilience used neighbourhood walks in the living-labs as a way of getting in touch with local stakeholders. The walks turned out to be a great "socially distanced" event, especially during the COVID-19 pandemic. Neighbourhood walks are flexible, as the focus and the organisers can be selected at will. The route was planned and communicated to the participants in the invitation to the neighbourhood walk. This helped to clearly define the framework for all participants and to clarify the goal of the neighbourhood walk. Along the route, local experts spoke on topics relevant to the various locations. In addition to the obvious advantages of these events, such as collecting the participants' knowledge and experience, and their flexibility in terms of routes etc., they are a wonderful opportunity for conversation and networking in a relaxed and casual way between the stops on the walk. The participants also came to see the project team as a new "player" in their neighbourhood.

The "Owners' Forum" was a regular event organised by the neighbourhood management in the Dortmund-Hafen living-lab, this was further developed into a neighbourhood walk and became the "Owners' Forum on the Move".

The Owners' Forum advised property owners and helped them to network with each other as well as with energy consultants, the police, the department of public order and safety or the waste disposal companies. The project built on existing networking in the neighbourhood and generated valuable contacts for the iResilience project. Through these events, the project team came into contact with a couple of owners who actively participated in a later LAG in the living-lab, this helped to reach other local stakeholders and increased awareness of the iResilience project.

© iResilience: Visit to various yards with local property owners in spring 2020, Dortmund Harbour neighbourhood

Profile

NEIGHBOURHOOD WALK: OWNERS' FORUM ON THE MOVE

Aim of the event format

> To make contact with property owners and other stakeholders involved in the housing and building industries
> Networking with local stakeholders
> Information exchange about climate and real estate
> Raising awareness of redesigning options and the potential for adaptation

Description of the event format

iResilience cooperated with with the neighbourhood management at Dortmund-Hafen and their contacts from the Owners' Forum to enter into a dialogue with property owners and to visit different inner-courtyards as part of a neighbourhood walk. The aim was to show good examples of courtyard design and the potential for redesign. iResilience and the neighbourhood management real estate team met to select suitable courtyards. The real estate team asked the selected courtyard owners if they could visit their courtyards. The organisers of the Owners' Forum invited people to the Owners' Forum on the Move. iResilience planned and organised experts to speak on the topics of heat development, greening measures and courtyard design and brought along visual materials (e.g., temperature analyses). The project team and the participants were able to discuss the positive and negative factors for climate-proof courtyards on site. This had a two-pronged effect, and on the one hand, all the participants learned something and on the other hand, it provided the groundwork for redesigning a courtyard (LAG climate-proof courtyards).

Target groups

> Property and land owners
> Building management companies
> Housing companies

Participants

> Owners
> Neighbourhood management
> Politicians
> Housing companies
> City funding advisors
> Neighbourhood architects
> Building contractors involved in renovations and modernisation
> Gardening and landscaping companies

Work involved

> Approx. 4 planning meetings to identify suitable courtyards as examples, coordinate with the owners, plan the route and content and do public relations work
> Prepare a schedule including a route map
> Prepare visual materials for the content

Duration/timeframe

> Coordination period approx. 2 months

Public relations work

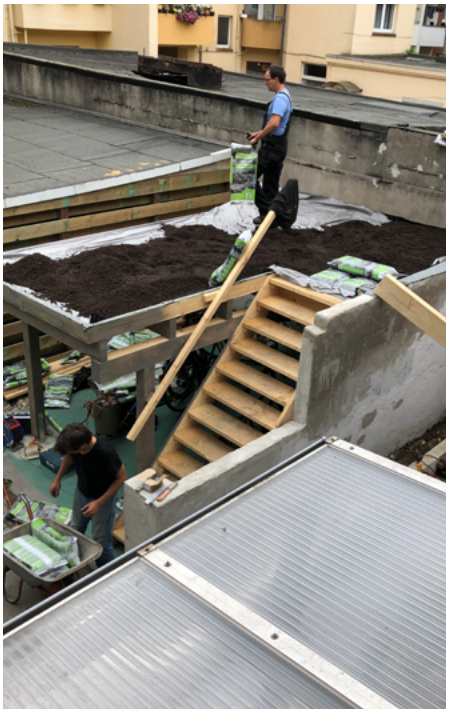
> Promotion of the event by the Neighbourhood Management real estate team via the Owners' Forum Network

Results of a neighbourhood walk: LAG Climate-proof courtyards

Who? Owners of a house in a courtyard.
Why? The owners became aware of the iResilience project through contacts made at the Owners' Forum on the Move.
What? Adapt property to the challenges of climate change, improve drainage and the conditions for heat, owners would like to have a positive impact on the climate.
How? iResilience brought all the relevant stakeholders to the table and together they developed an individual concept with measures for redesigning the courtyard. They were also informed about funding opportunities.

Tip

If the stops are far apart, the neighbourhood walk can be turned into a bicycle trip!



Tip

Not too many people should be taken on a neighbourhood walk, as the group can become chaotic. Communication in the open air, without a microphone, is difficult and the project team cannot talk to everyone in a large group.

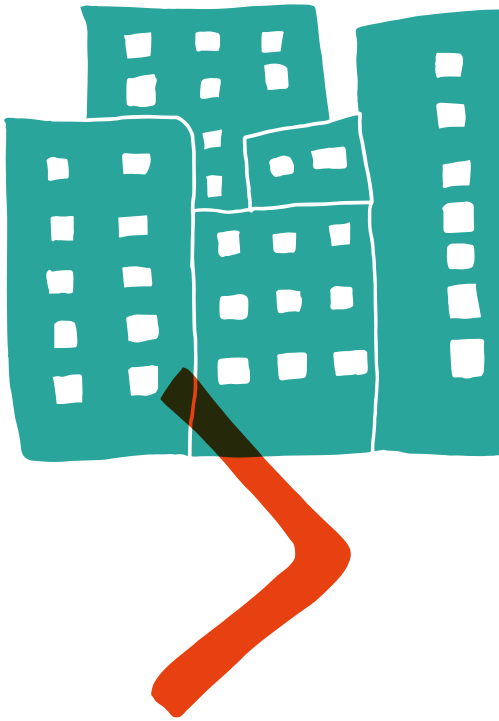
- in busy neighbourhoods, with a relatively high noise level: max. 12
- in open spaces and less densely populated neighbourhoods: max. 20

Who could lead an event like this?

- Neighbourhood management and coordination staff
- Public housing authority staff
- Office of urban renewal representative

© D. Schmidt: Redesign of a backyard in spring/summer 2021, Dortmund Harbour neighbourhood

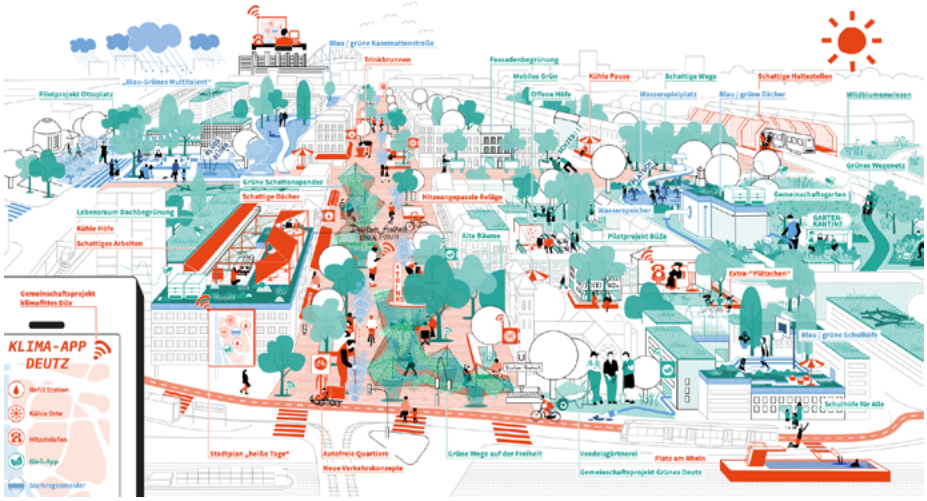
Co-planning event formats in the iResilience project



The vision for the future

Visions of the future tell stories. They are a collection of ideas of what the future may or may not look like. Either the story is continued into the future based on current developments, in which case dystopias are usually created because the focus is on problems and undesirable developments. Or one detaches oneself from current developments and imagines utopias, i.e., positive images of the future. Images of the future are not only knowledge based, but also come from feelings, ideas and thoughts and, as in the case of the iResilience project, from a range of different people. The aim of creating images of the future is to activate people to shape their own future by developing a vision of what they want to strive for. This then creates a framework and guiding principles for present and future action. In the iResilience project, people in the neighbourhoods were asked in various contexts: “What do you think your neighbourhood should look like so that the consequences of climate change, such as heat, drought and heavy rain, do not affect your area and it remains a place worth living in?”

Creating this common vision for the future was helpful because it motivates and mobilises people. Thinking about a future worth living in is more motivating than thinking about the consequences of climate change, for example looking at heat or heavy rainfall hazard maps and the corresponding climate adaptation measures, e.g., cisterns. Formulating visions for the future helped the different local stakeholders to find a common language between them. Presenting a summary of all of these ideas also highlights how various measures and approaches can have a knock-on synergy effect, e.g., an above-ground water collection area not only prevents flooding but can also become a pond that is a plus for the neighbourhood as an attractive and naturally cooling new amenity. These visions for the future also served as a collection of ideas that could be referred back to in the living-lab work.



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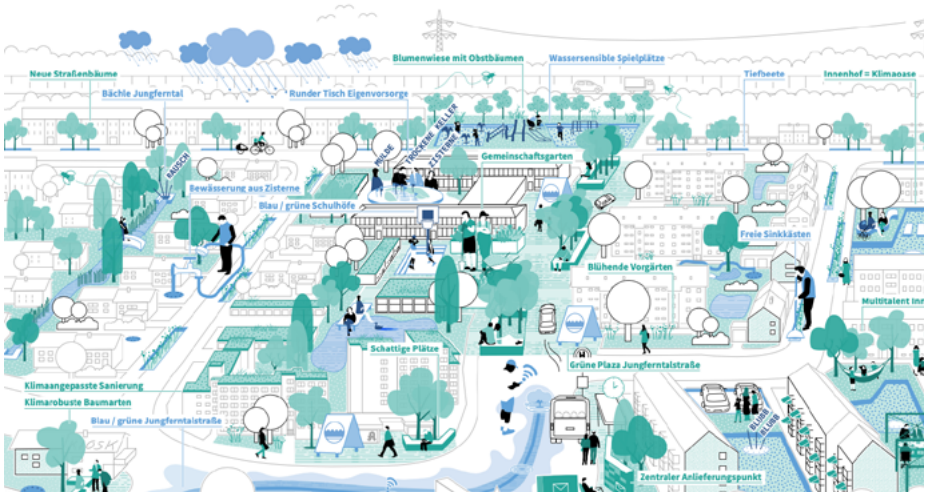

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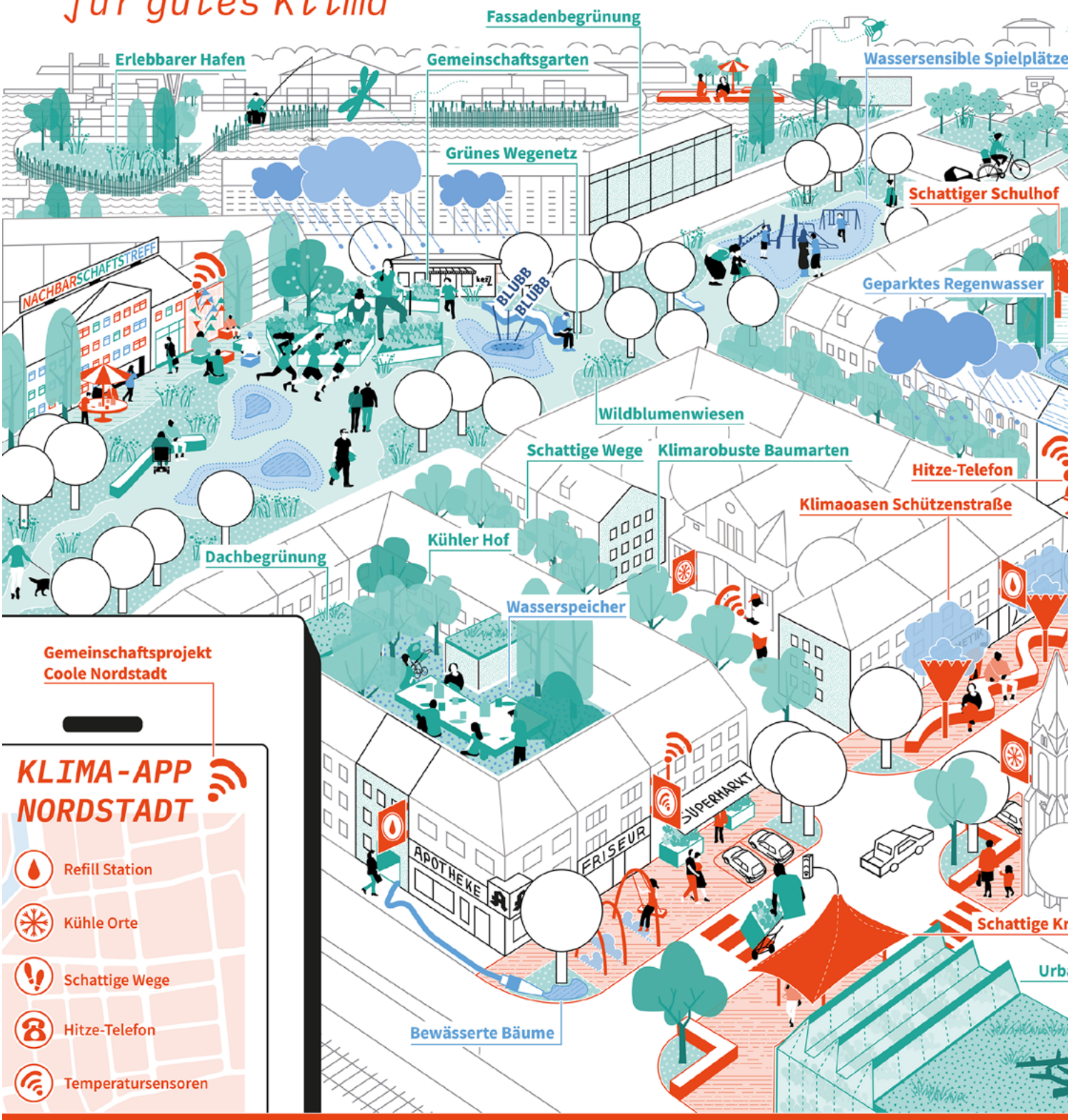

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Sozialforschungsstelle Dortmund

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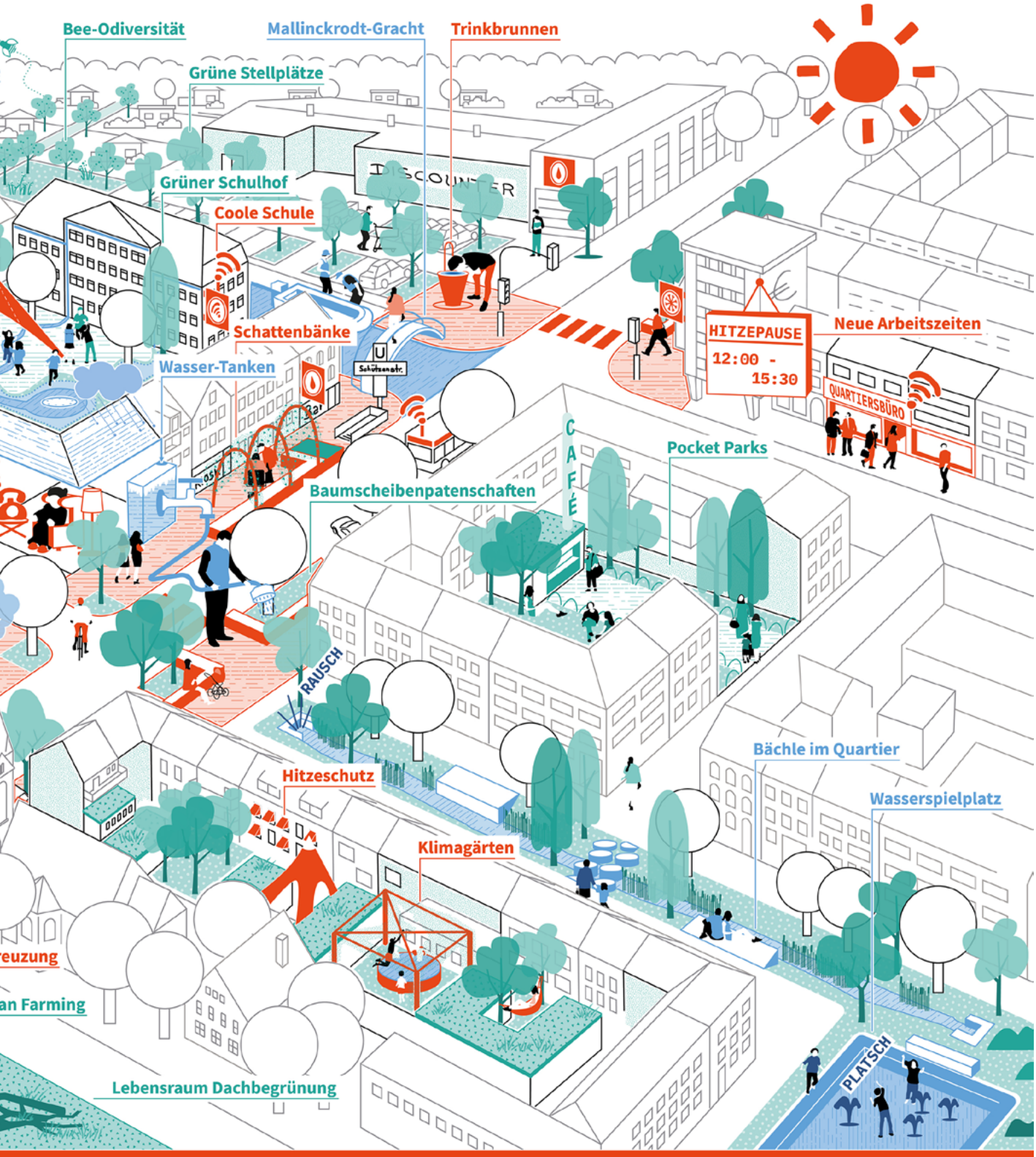
nordwärts

difu Deutsches Institut für Urbanistik

StEB Köln

Hafenquartier:

Auf Kurs zur coolen Klimaoase



Profile

CREATING A VISION FOR THE FUTURE FOR THE LIVING-LAB WORK

Aim of the event format

> Accessible opportunity for everyone to participate in as no special knowledge necessary
> Opportunity to spot contradictions through joint reflection on the contents
> Creates orientation framework for the living-lab work and justification for the stakeholders
> Results are a gift from the neighbourhood to the neighbourhood

Description of the event

The first living-lab events laid the foundations for the visions for the future. The participants were asked to brainstorm together what changes would be good for their neighbourhood. The "good" and "bad" places were marked on city maps. The project team clustered the topics, places and measures. Then the group analysed which places and topics were particularly important to the people. In addition to "classic" adaptation measures, such as more green facades, a series of social and digital innovations were also named, e.g., warning apps for hot days or a "different" way of cooperating with other stakeholders. But there were also concrete suggestions for particular places, e.g., trees on a square.
In order to be able to depict as many visions as possible, a graphic design agency created an abstract impression of each neighbourhood. First, a preliminary version was completed and presented to the neighbourhoods a few weeks before the half-time plenary "Climate Week" → **see p. 51**. The stakeholders were given various opportunities to comment. For example, the image was displayed as a banner in the neighbourhoods and local stakeholders were able to comment on elements of the visions for the future on the "Opinion for Cologne" website. In addition, the project team created public digital whiteboards → **see p. 76** and publicised this way of commenting in various media. The preliminary visions for the future were presented during Climate Week, as well as the collected comments and change requests. The changes that were needed were "decided on" there, and they were then incorporated into the final visions for the future. The finished versions are now available to the neighbourhoods, were presented to politicians, for example, and will be integrated in the Roadmap.

Target groups

> All local stakeholders: citizens, local authorities, politicians

What is needed?

> Ideas from local stakeholders
> Graphic design agency, time and funding
> Different communication channels to collect feedback from local stakeholders

Work involved

> Commissioning and briefing a graphic design agency
> Events to, among other things, collect people's individual visions for the future
> Bundling and summarising the visions
> Reflection with the stakeholders
> Arrange presentation opportunities

Tips for communication with the graphic design agency

Extract from the service description for the graphic design agency:
The basic illustrations should be stylised images of the three project neighbourhoods in black and white. The entire urban structure of the neighbourhoods should not be realistically and recognisably depicted 1-to-1, down to the last detail. Instead, familiar elements of each neighbourhood, e.g., typical buildings, streets or squares as well as landmarks, infrastructures or landscape elements that characterise the cityscape should be featured and combined to form a stylised image. The aim is that the neighbourhood should be recognisable but not that every one of the ideas added later is shown at its exact location. The focus, especially with regard to the final visions for the future for specific locations, is on the what (stakeholders' ideas) and not on the where (location in the neighbourhood). The illustration should be a graphic translation of the stakeholders' ideas and visions. Similar to a "find the..." picture for children that is full of details and activity, the ideas should be depicted as individual narrative scenes/representations and roughly located where they make sense in the neighbourhood. These include both location-based ideas – relating to heavy rain, urban greening and heat – and non-location based social and digital ideas. Short, keyword-like captions should be added to the individual scenes to make them easier to understand.

© iResilience: Display of the vision in a public space in Dortmund-Jungferntal

Individual events

In addition to the various formats (plenary sessions, thematic FGs, LAGs), individual events were held to support the living-lab activities. The aim was to "fly the flag" in the neighbourhoods, to present the completed living-lab activities and to establish new contacts with local stakeholders. These public events were not integrated into the process on a recurring basis but took place just once – they were therefore intended to be something special.

The three living-labs organised their own events individually. In Dortmund-Jungferntal, the focus was on heavy rainfall, and in Cologne-Deutz, the focus was on urban greening. Based on popular demand, a one-day event was held in Jungferntal, while in Cologne the event was extended to a six-week series of events as a result of the widespread interest in urban greening. In Dortmund-Hafen, iResilience was able to cooperate with another locally active research project and organise a climate market, which was both a way of informing passers-by about climate change and encouraging participation through hands-on activities in the form of small construction projects. The ideas for these individual events came from the neighbourhoods themselves.

The individual events in both cities led to new contacts and interaction with new faces, even if they were simply new Instagram subscribers → **see p. 26**, new email addresses for the mailing list → **see p. 30** or people participating in an event for the first-time. The fact that all the events were carried out with local initiatives created a new common basis for working together. On the one hand, this created trust, on the other, it also showed the initiatives that "something is happening in the neighbourhood" through the iResilience project. The last aspect was particularly important, because the local citizens became motivated and enthusiastic about the project thanks to these short-term successes.

© iResilience:
Action Day heavy rain Dortmund-Jungferntal

Profile

HEAVY RAINFALL ACTION DAY

Aim of the event

> Raise awareness of the issue of heavy rain and provisions to deal with it
> Communicate potential hazards with the help of the heavy rainfall hazard map and present protection options/measures
> Promote communication and networking among the citizens of the neighbourhood

Description of the event

Dortmund-Jungferntal is an extensive flooding hotspot. In order to draw attention to the issue of heavy rainfall protection and to raise people's awareness of the iResilience project, the "Heavy Rainfall Action Day" was organised in cooperation with the Dortmund Municipal Drainage Services and two committed local citizens. An information stand was set up in the car park of the local primary school, a central location in the neighbourhood, and information material was distributed, such as the heavy rainfall hazard map, and free hessian bags were handed out with the slogan "We don't want wet feet – heavy rainfall protection". Working with staff from the municipal drainage services, the team answered questions from passers-by and ran guided tours of the neighbourhood. On the tours, danger points during extreme rainfall were pointed out in public and private areas and the residents were able to share their experience.

Target groups

> House owners, including private landlords
> Local residents

Participants

> Residents' associations
> Local residents to share their experience

Work involved

> Three planning meetings with the municipal drainage services and the two local citizens
> Finding local residents to share their experience
> Setting up and dismantling a suitable info stand with seating on the day of the event

Duration/timeframe

> One-off event
> Whole day

Public relations work

> Flyers and posters in the locality
> Municipal press release
> Invite the residents' associations / advertise in the residents' association magazines
> Social media: Instagram and Facebook
> Announcement on the project website

© iResilience: Flyer for the Heavy Rainfall Action Day

Profile

GREENING MONTH
"DEUTZ IS GETTING GREENER – LET'S DO IT TOGETHER!"

Aim of the event format

> Support the activities already underway in the living-lab
> Raise awareness, mobilise people and brainstorm ideas for further activities in the living-lab
> Networking of local stakeholders
> Generate visibility of the project in the neighbourhood by drawing attention to it

Description of the event

The Greening Month in Cologne-Deutz ran for six weeks under the slogan "Deutz is getting greener – let's do it together!" The Greening Month drew attention to the issues of climate change adaptation through a variety of small events and activities. These introduced many people to the idea of climate adaptation through "greening", which, as a concept, was very well received. A variety of events took place within a certain timeframe, which were planned and run with local stakeholders. Different types of campaigns were also carried out to reach and mobilise all local stakeholder groups in the neighbourhood. Activities where something can be experienced, created or distributed worked best, for example, handing out plants accompanied by a short talk by a greening expert or an informative exhibition on display boards.

Who took part?

> Local residents
> Local authority staff
> Local initiatives and other research projects

Target groups

> Everyone in the neighbourhood with green fingers, or those who would like to develop them

Necessary resources

> Small amount of funding
> Wide range of staff
> Needs support from local residents and other local stakeholders

Duration/timeframe

> Preparation time (about 2-3 months) plus campaign period (6 weeks)
> Intensive follow-up time, as many new stakeholders were recruited: approx. five online meetings were held in the following month

Public relations work

> Promote Greening Month and the activities through as many different channels as possible, such as social media, mailing lists and posters

Run-up

Time and again, the local people said that there are too few trees in the neighbourhood and that many places are not shaded. Together, they decided to bring the wandering trees to Deutz. These are mobile trees that stand in parking bays. A group of six residents, the local community centre and other initiatives created and planned Greening Month with the project team. For example, they decided on the locations for the wandering trees, as well as who could take care of a wandering tree location, and what other activities could be carried out.

Long-term campaign – wandering trees in the neighbourhood

In May, six of the wandering trees from Cologne's Wandering Tree Avenue Initiative (Wanderbaumallee Köln) moved into the living-lab neighbourhood. Three parking bays in three streets were temporarily transformed into new tree locations. Residents acted as tree sponsors and "looked after" the trees, organised events (e.g., a guitar concert) and led discussions with those who missed the parking spaces; discussing the question: Who owns the city?! The moving-in and moving-out of the trees was "celebrated", the local mayor made a speech to the city tree.

© iResilience: »Wanderbäume« movable trees

Digital Info Evening: City Trees

The Parks and Open Spaces Department (Grünflächenamt) of the City of Cologne reported on the current situation regarding city trees in the neighbourhood (felling, replanting, additional tree locations). In addition, information was provided on how the Parks Department is preparing for the challenges of climate change, e.g., by selecting heat-resistant "trees for the future". Citizens and experts exchanged information about proper watering and the possibility of tree sponsorship.

Digital Info Evening: Greening roofs and façades

When people think of climate adaptation, they quickly think of green roofs and façades, but how does that work? An expert from the Federal Association for Green Buildings (Bundesverband GebäudeGrün e. V.) presented various options with their climate impact, maintenance requirements and costs. The local authorities provided information on the appropriate funding programme from the city of Cologne. In line with the peer-to-peer approach, a citizen from the neighbouring district gave a presentation on how she and her homeowners' association established a green roof.

Planting campaign for World Bee Day

On World Bee Day, plants and seeds were distributed for bee-friendly and edible plants such as herbs, fruit and vegetables. The campaign was organised in cooperation with NABU (Nature And Biodiversity Conservation Union) Cologne, the Environmental and Consumer Protection Office of the City of Cologne and the Edible City of Cologne project, and included short lectures on greening in the city and biodiversity.

Planting activities on Environment Day

Another event took place on this day. The NABU project "The great flowering – 7,500 wild perennials for Cologne", financed by the Foundation

© iResilience: greening month

© iResilience: greening month

for Environment and Development North Rhine-Westphalia, provided 100 wild perennials. This was a great opportunity for participants to get their hands dirty. The team had prepared some tin containers for people to plant the perennials in. They could then be attached to a streetlight, for example.

City walks on urban greening

In order to deepen the knowledge people had gained from the information evenings by seeing how it applied directly to their locality, a neighbourhood walk was planned to answer the following questions: Where can you find great green spaces? How do you connect a standpipe to a hydrant so that you can water plants? How does a watering bag work?

Invitation "We are looking for climate oases!"

With the slogan: "Do you have a beautiful garden or courtyard? Then apply now!" gardeners were invited to apply for an award for their climate oases in Deutz. (Note: This idea was developed in a LAG in Deutz.) After the awards, a walk through these climate oases was organised.

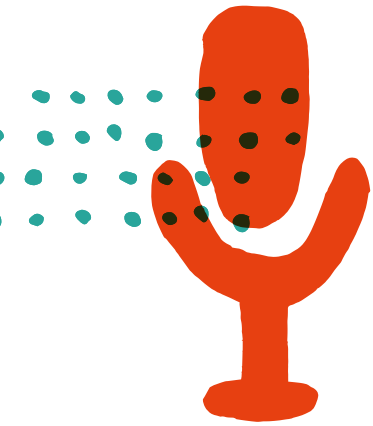
"The Tree" competition

A painting and writing competition was organised that was open for everyone. It was entitled: My friend the tree... Tell us your tree stories! This was advertised on posters and the winners were announced at the end of Greening Month.

Plenary meetings

The *plenary format* focused on the three key issues (heavy rainfall provisions, extreme heat protection and urban greening) at neighbourhood level. The aim was to involve experts and interested parties, residents, property owners, tradespeople, municipal representatives (local authorities and municipal drainage services) and institutional organisations. During the project, this format proved its worth both as a face-to-face meeting (initial plenary, kick-off plenary) and as a digital event (half-time plenary/climate week, final plenary). At the start of the project, the issues, the team and the goals of the project were presented to a broad audience in the neighbourhood and initial ideas were collected. The official opening that was attended by politicians and high-ranking local authority representatives (department heads) set the living-lab on the right course and supported the claim that together we could make a difference. The participants and the project team rated the digital half-time plenary (climate week) as very successful. During the digital climate week, theme evenings were held on four days (Mon-Thu), which were a combination of information presentation and workshop. The participants saw added value in the educational input from experts, the city-wide information they received and the discussion of interim results. They also appreciated the opportunity to work together on ideas for climate adaptation and increase their own range of contacts through networking. The digital format made it possible to reach a large number of people over the four evenings and enabled participants to get involved on several days.

© iResilience: working group on heat prevention and health at the initial plenary in Dortmund



Quote from a local resident

"I took part in the climate week, there was an expert lecture by [...] that really inspired me. We found out that if we unseal the streets and pavements, the rainwater will no longer fill up the sewage system, but run off into the groundwater."

(translation by the author)

Profile

CLIMATE WEEK – DIGITAL PLENUM

Aim of the event

> Present and discuss interim results
> Collect concrete ideas for measures for LAGs
> Promote conversation between stakeholders
> Enable exchange between the stakeholders of the three living-labs

Description of the format

Climate Week is a digital event that was offered via Zoom. The aim was to inform, raise awareness and promote networking between local stakeholders on four theme evenings (heavy rainfall provisions, extreme heat protection, urban greening and visions for the future). Each evening was organised in the same way:

• Plenum: Project presentation
• Plenum: Input by experts on different topics
• Neighbourhood specific breakout rooms: Discussion about the current status of the LAGs and ideas
• Plenum: Presentation of the results of the breakout rooms including inter-neighbourhood exchanges
• Plenum: Farewell

Both members of the project team and invited guests spoke as experts. In the breakout rooms, the discussion was recorded on digital pinboards → **see p. 77**. After Climate Week, all of the ideas were reviewed and clustered by the project team in order to run LAGs based on the ideas. After the event, all participants were invited by email to kick-off meetings for the LAGs. The climate week was documented by the project team; in addition to blog posts, they produced a brochure that summarised the individual theme evenings and presented the LAG ideas that arose.

Target groups

> Local residents
> Local authority staff

Participants

> The project team
> Experts as speakers

Work involved

> Develop a concept about three months before the Climate Week
> Intensive PR work using flyers, posters, emails and multipliers

Duration/timeframe

> Online events approx. 2 hours each, on four evenings in one week
> Time to promote the event, time for follow-up work

Public relations work

> Press release
> Project and municipal websites (e.g., municipal participation portals)
> Social media
> If possible: Local activity to generate attention
> Produce a brochure afterwards as documentation

Quote from a local initiative

"I thought some of the methods were really great, so I asked Ms X again how we could put them into practice. I thought it was just brilliant and I saw that there were things we were able to do that we wouldn't have managed in a face-to-face meeting. I got to know more about the other organisation, I never had as much contact with the consumer advice centre as I do now. Thanks to the climate week and the expert speakers, the issues are much more tangible for me now."

(translation by the author)

© iResilience: working group at »Bürgerzentrum« in Cologne-Deutz

© iResilience: Initial plenary Dortmund

Quote from a local initiative

"[...]it was always very appreciative, very empathetic and very friendly. I am still very surprised. This action week, this climate week was very positive, we have reached so many people, I also found it very enriching to have Cologne with us. I don't think it would have been like this if we had met face-to-face [...]".

(translation by the author)

© iResilience: Climate Week programme

Local Action Groups

The Local Action Groups format (LAGs) has already been described → see p. 15. LAGs focus on a specific location and/or a climate-specific challenge (heavy rainfall protection, extreme heat protection, urban greening).
The primary goal of the public relations work was to specifically address local stakeholders to encourage them to be involved in the LAG format. People were approached both generally and individually. Here, the strategy was to address citizens via multipliers (e.g., representatives of initiatives or the senior citizens' network), as well as directly, (e.g., the residents of a potentially flood-prone area, people with gardens, residents of houses with flat roofs or people with a heat hotspot in their backyard). The team distributed information material and flyers and talked to people door-to-door. Here, the focus of communication was not on the potential danger posed by heavy rain events, but on how the quality of life could be improved by building and renovation measures.
The municipal project staff mobilised representatives of the municipal departments and the municipal drainage services bilaterally and/or through corresponding working groups. Maps, such as the heavy rainfall hazard map, were used in particular for this approach. This helped to emphasise the need for action.

During the process, it became apparent that the fact that the living-labs were limited to clearly defined areas led to a lack of understanding, for example when searching for fellow campaigners from the neighbourhoods as adapting to climate change is a "problem that transcends borders". From an administrative point of view, however, each living-lab must have geographical limits and cannot allow everyone in the wider urban area to participate.

In the LAGs, at least two groups of stakeholders should come together and work side by side → see p. 15. When designing the collaboration, it is important to bear in mind that different groups of stakeholders have different expectations regarding the pace and results of the work. In some LAGs, they were able to proceed in small steps, e.g., when developing the heat tip list in Cologne-Deutz where meetings were sometimes held on a weekly basis to plan everything step by step. Here, the participants were mainly citizens. Representatives of the local authorities and the retail trade were brought in on certain occasions. In other LAGs, there were large time gaps between the individual LAG meetings, as bilateral agreements took place between the meetings and conceptual work had to be dealt with by the project team. The pace of the LAG work and the intervals between the meetings very much depends on how much time each participant has and should therefore be discussed individually with each LAG group. Nevertheless, the groups were very positive about the diversity of their members and appreciated how their differences in terms of approaches and local experience of everyday life made working together more fruitful.

The fact that different types of stakeholders worked together made it possible to initiate processes in which they could learn from each other. In particular, the citizens gained an insight into the working methods of the local authorities (e.g., that different departments have to work together on climate adaptation), and also learned what the different departments are responsible for. The representatives of the different departments got to know the citizens as constructive partners on the way to more climate resilience.

The LAGs were equally heterogeneous when it came to the tasks the group members took on. When organising the Wandering Tree Avenue, for example, citizens made contact with the initiative and were also directly involved in "transporting" the trees to the living-lab neighbourhood. The same was true for the "Water Tank" initiative, where the person whose idea it was led the entire process from calculating the cost to ordering the product and installing it, and only needed support with some administration. There were also LAGs where the project team was much more involved. In the "Kasematten Strasse for tomorrow" LAG, the residents' role was to come up with ideas for redesigning the space. They also worked out a catalogue of criteria with the representatives of the different local authority departments and the municipal drainage services as a basis for evaluating the ideas. However, the project team was responsible for turning the ideas into proposals and applying the criteria to the proposals, so that the Kasematten Strasse process developed more in the direction of a classic participation process.

In addition to the project team, one theme driver per LAG from the circle of local stakeholders should take on a central role. This driver identifies in particular with the topic of the LAG and should significantly drive the process towards specific action. He/she can, but does not have to be, the person who comes up with an idea, as was the case, for example, in the water tank

Note

It also helped to use maps that show the risks (heavy rainfall hazard or heat analyses maps) in order to communicate with and convince politicians and potential funding bodies.

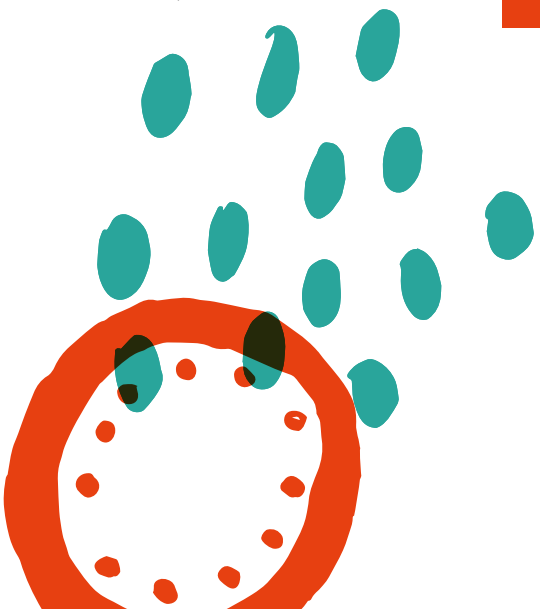
LAG. The person is a contact person and organises the co-planning meetings. The LAG drivers were different types of stakeholders: citizens, representatives from various local authority departments or from social institutions. The drivers carried out their tasks with varying degrees of intensity. In the end, more often than had been planned, it was the project team that became the driver and took over the organisation.

There was also a varying attitude amongst the groups as to whether they should be kept open to new members. Some LAGs, formed a fixed group from the beginning, only inviting experts when needed. Other LAGs, continuously distributed flyers inviting all the local residents to the LAG meetings, not only those who were already participating. This resulted in group constellations of varying degrees of commitment. However, in order to make the working process more productive, it is advisable to at least conclude the brainstorming at a certain point in time. New participants can still join the group, but they can only work on shaping existing ideas and cannot contribute totally new ideas.

Basically, the experience from the project is that in order to mobilise all local stakeholders the advantages of the cooperation in the LAG format must be clearly defined. This can be more time consuming for the project team than anticipated. It is particularly important that potential participants see that the intention is there to specifically implement the results of the LAG. If direct action is not the aim, this can paralyse or even prevent the joint working process. However, no assurances should be given that cannot be kept, as this can cause lasting damage to the relationship and trust within the group. Ideas can be implemented particularly well with a group that has a driver, i.e., someone who is intrinsically motivated to drive the process forward and is willing to take responsibility, as was the case in the Water Tank LAGs in Dortmund → **see p. 56** and Heat Tip List in Cologne → **see p. 66**.

During the living-labs project work, a total of around 25 LAGs were formed on the topics of “urban greening”, “heavy rainfall protection” and “heat & health”. The ideas from the plenary sessions and the thematic working groups were taken up and developed in the LAGs. The variety of LAGs and the results achieved are enormous, both in terms of quality and quantity – despite the pandemic. They covered a broad range of issues and were also structurally diverse with regard to duration, number of participants, intensity, etc. Looking at the individual assessments of the LAGs it can be seen that the participants made varying use of the potential for networking, learning and sharing knowledge as well as taking on (new) responsibilities, among other things through the co-planning process. The measures that were developed are also very different. They range from a concept for the structural redesign of a street “Kasematten Strasse for tomorrow” → **see p. 62** to ideas that were carried out immediately (e.g. building raised beds or producing information material).

Particularly in the case of ***“heat and health”***, it is difficult to identify the specific impact on any one location: This is because rising temperatures affect the entire living-lab neighbourhood over a large area and are therefore a general problem. In this case individual climate adaptation measures are more in the form of behavioural changes and are thus not location-specific. Therefore, the iResilience project team focused on target groups that are particularly affected by heat (e.g., young families with small children or senior citizens).



Profile

WATER TANKS - URBAN GRID OF WATER FILLING STATIONS

Aim of the LAG

> Networking within the neighbourhood
> Taking responsibility for one's own environment
> Collecting rainwater so that it can be used for watering
> Simplifying watering of urban green spaces and thus motivating people to get involved
> Keeping rainwater in the natural cycle and relieving the burden on the sewage system

Description of the LAG

A water tank is a container that is attached to a downpipe of a (residential) building or similar together with overflow protection. In this way, the rainwater that hits the roof surface of the building can be collected and stored in the water tank. The rainwater can then be used by the residents to water the urban green spaces. The residents don't have to carry heavy watering cans over long distances, as the water is available directly on site.

A Dortmund student had this idea and found several other interested people at an iResilience plenary event, who then developed the idea with him. In a combination of online and in-person meetings, the participants discussed suitable site conditions and design options. With the help of the project team, four suitable locations were found, the building owners were convinced of their usefulness and funding was obtained from the neighbourhood fund. In consultation and cooperation with the responsible people at the four locations, the student calculated the building materials, placed the orders and was able to install the tanks with the LAG group members within a few weeks.

Target groups

> Local residents
> Urban gardeners
> Local authority staff
> Ecological initiatives
> Educational institutions

Participants

> Idea provider: Dortmund Student
> Citizens
> Initiatives
> Neighbourhood management
> Neighbourhood architects
> Local clubs/ associations
> Social institutions

Work involved

> Planning locations, incl. calculating rainwater and container volume
> Checking structural feasibility
> Constructing the water tanks
> Scheduling inspections and installation

Duration/timeframe

> Six months - from planning to commissioning of four water tanks

Public relations work

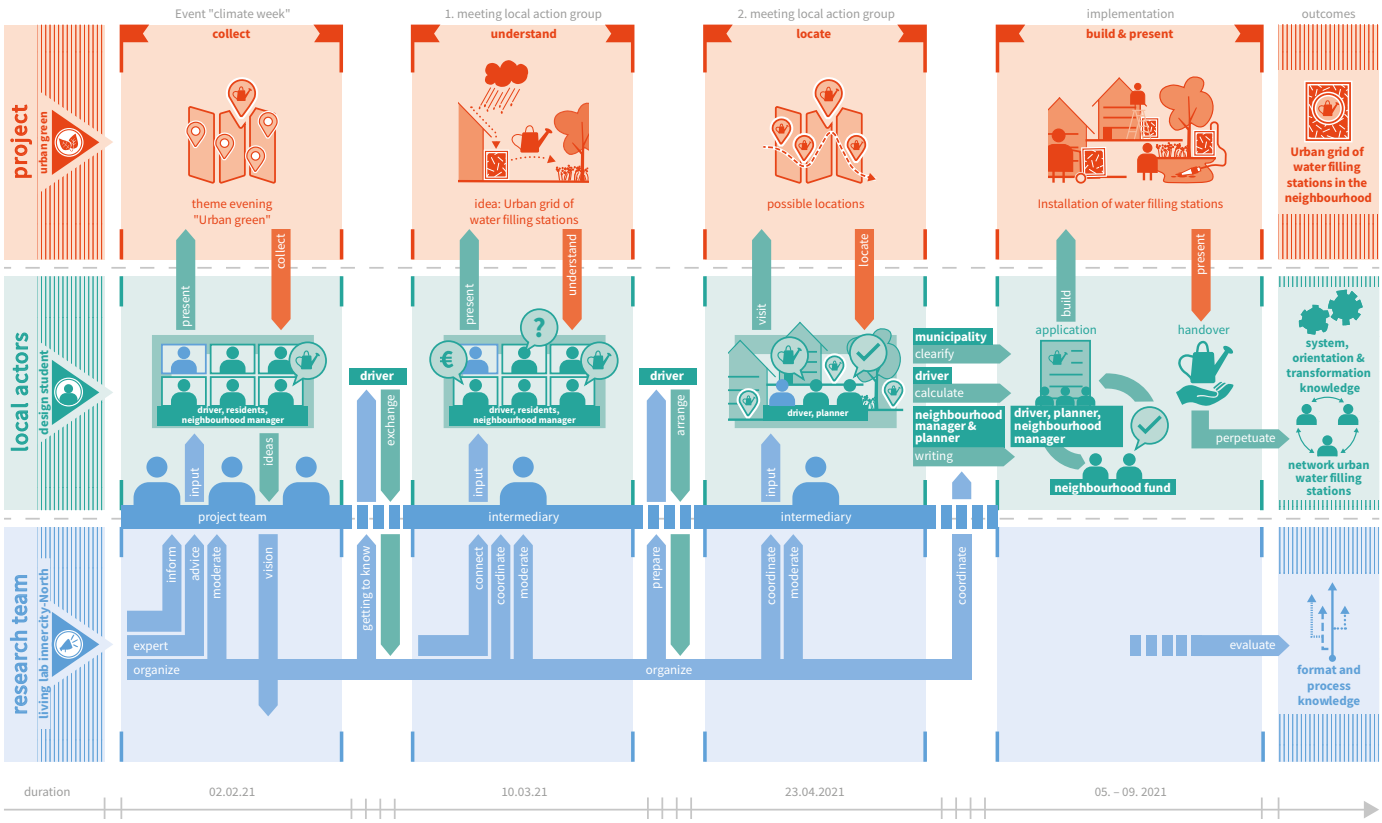
> Social media posts to look for suitable locations and updates during the process
> Digital kick-off meeting with all interested parties
> Neighbourhood walk to inspect possible locations
> Article on the project website as documentation after the event
> Press conference with the district mayor as a follow-up to the project

Quote from a theme driver

"For me it is a success because it is better to water trees with rainwater than with drinking water. Drinking water also has a CO_2 footprint and rainwater is more beneficial for the plants. I was also delighted to cooperate and network with different groups and to get to know people from different backgrounds. This was a big success for me personally, but also for the project."

(translation by the author)

Urban grid of water filling stations | Dortmund Innercity-North



© iResilience: working process of the local action group »urban grid of water filling stations«

© iResilience: water filling station at Blücherpark in Dortmund Innercity-North

> www.wassertanke.org

© iResilience: installed water filling station at AWO Dortmund (Workers' Welfare Association)

Quote from a local initiative

"The real success will be when it is copied and the idea spreads, then we will see how positive examples inspire others to continue. This is why I am very pleased with the quality of what we achieved, i.e., that it was planned and carried out based on solid principles. Not everyone has to do this so perfectly, but what we have done is an excellent example. And the other element of our success is that the networks have grown closer together. This project has given the topic an even higher profile in the district."

(translation by the author)

© iResilience: installed water filling station Dortmund Harbour neighbourhood

Profile

"BUNKERGARTEN" URBAN GARDENING AT AN OLD BUNKER

Aim of the LAG

> Residents' idea: Make better use of green spaces
> Start an urban gardening project (increase biodiversity, networking in the neighbourhood)
> Find a sustainable solution for rainwater management

Description of the LAG

Following a plenary session, a resident and a kindergarten teacher approached the project team to talk about an open space around an elevated bunker that they look at every day from the local playground. Some open spaces are not used by children, residents or even insects. They felt that the area should be upgraded to promote biodiversity. Biodiversity and gardening is important in education and working with children and setting up a joint garden initiative is a good way to put these principles into practice. Together they developed a vision and made a presentation to communicate their ideas. Access to water for irrigation was the main challenge, apart from getting suitable land. Therefore, the project team creatively discussed various scenarios with the two citizens and involved various authorities as well as the Cologne municipal drainage services in the discussions. Three meetings took place on site, as well as comprehensive email exchange. There was a lot of support for the idea of developing a climate oasis for Deutz that incorporated the bunker into the playground area and the surrounding open space. The idea was to collect rainwater from the roof of the bunker, which could be used for irrigation or the playground as required. In the course of the planning process, the building was found to be in need of extensive renovation. However, a compromise was found: A lease agreement was concluded for a few square metres of open space around the playground area, and the residents were to redesign this area. This community project, which benefits everyone, was supported with funds from the district council. Then it was time to implement the plans: the result was not only raised beds and a bench, but also a bunker garden community in which numerous residents from the immediate vicinity are now involved. The bunker garden group also set up a messenger group, which helps people to organise any work that arises. The Cologne local authorities also installed a grit box with tools ready for use next to the raised beds. There is also a mini-compost heap that all the residents use and colourful signs that show visitors around: The kindergarten is also involved.

Target groups

> Residents and kindergartens
> Parks Department and municipal gardeners, Department responsible for Children's Interests (keyword: playgrounds), Environmental and Consumer Protection Office, Office for Protected Structures
> Cologne Municipal Drainage Services
> Local politicians

Work involved

> An urban gardening project can be started quickly, but the use of rainwater from the roof of a public building is a hard nut to crack

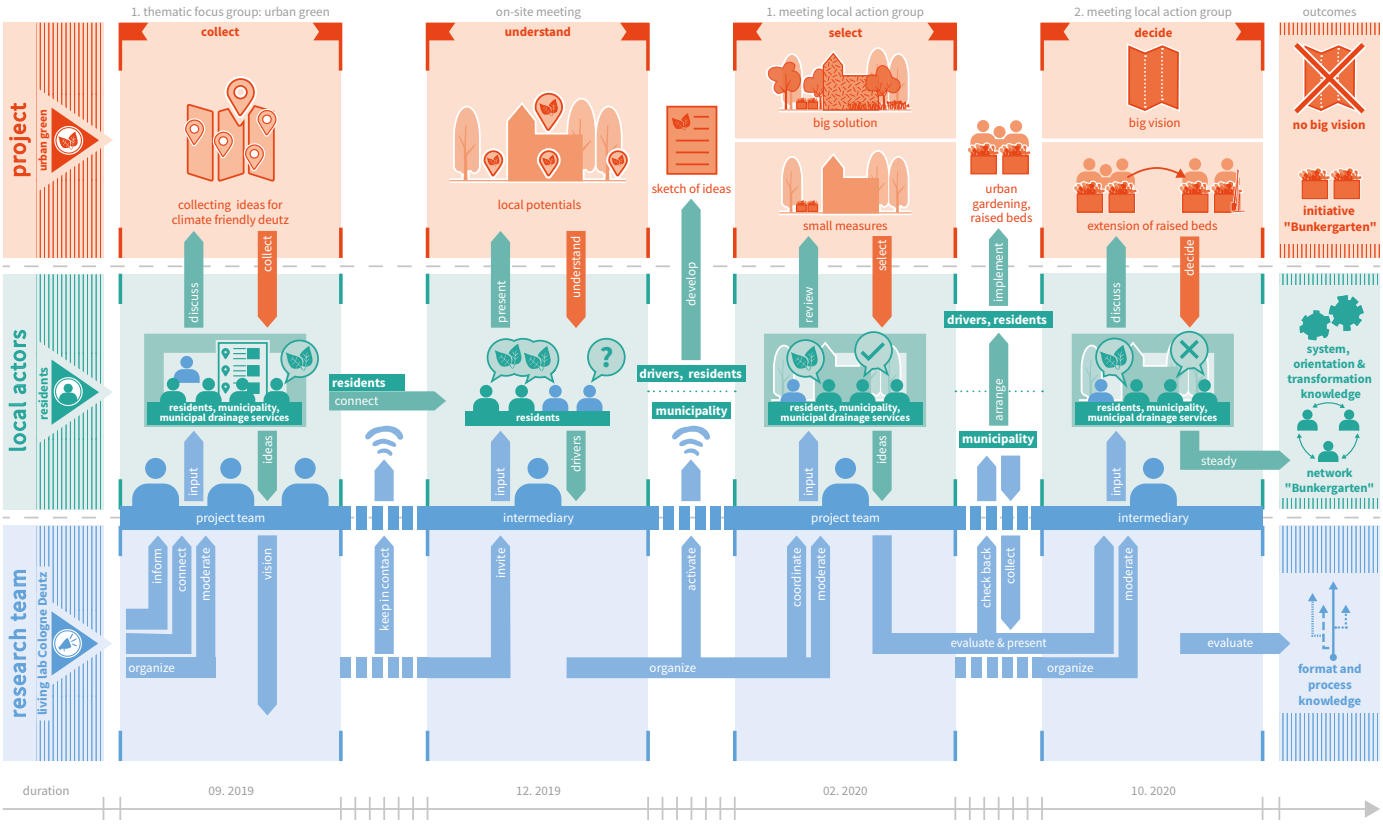
Duration/timeframe

> One and a half years

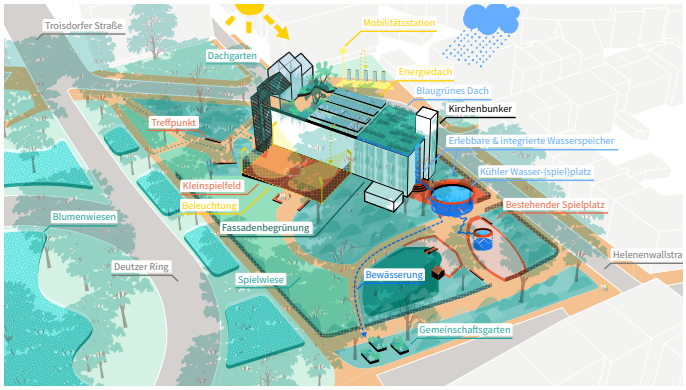
Public relations work

> None, it should be worked on as a "private project" by the people concerned
> Report (afterwards) via the LAG and a blog post about the results
> Presentation of the results in a meeting with politicians
> Information signs at the finished bunker garden informing passers-by about the project

"Bunkergarten" urban gardening at an old bunker | Cologne Deutz



© iResilience: working process of the local action group »Bunkergarten«



© iResilience: collection of ideas for »Bunkergarten« as a climate oasis 2020

The bunker garden LAG shows how important reliable planning and the prospect of implementation are for the working process.
As it was discovered during the project that the high bunker has severe structural defects and needs to be comprehensively renovated, it was not possible to estimate when the structure could be used for water collection. This means that this great idea of using the water for irrigation and the playground has to be put on hold for now. However, since it is important to make small successes possible, a compromise was reached.

© iResilience: »Bunkergarten« summer 2021

Profile

"KASEMATTEN STRASSE" CLIMATE-RESILIENT STREET

Aim of the LAG

> To make an urban space climate-proof: Develop the idea to mitigate risk to an area prone to flooding.
> Promote acceptance of climate adaptation
> Raise residents' awareness of the need for heavy rainfall provisions

Description of the LAG

In five meetings, a way of redesigning a section of road on Kasematten Strasse in the Deutz district of Cologne was developed to make it climate-proof. The responsible authorities were involved, as well as the Cologne municipal drainage services and residents from the surrounding buildings. The meetings took place partly on site, partly online (depending on the current pandemic situation). After a short introductory meeting on the topic of heavy rain and flood prevention, the participants were allowed to work out proposals for solutions creatively. These proposals were further adapted to the local conditions in the subsequent meetings. The group was supported by a landscape architect and a civil engineer.

The resulting measures propose comprehensively unsealing the area: Currently, the area in question on Kasematten Strasse is a public road and a car park for the adjacent school. The parking area in particular will be unsealed and redesigned as a multifunctional area: It was proposed that the area be deepened to create a trough in which water can collect without damage in the event of heavy rainfall. Since, according to calculations by Cologne municipal drainage services, a lot of water is to be expected in the Kasematten Strasse area, additional water storage will be created under the trough using a filtration trench and a cistern. A boules court and a seating area will round off the multifunctionality of the area.

Target groups

> Local residents
> Other local interest groups, such as schools, social institutions, initiatives
> Cologne Municipal Drainage Services
> Other local authorities

Participants

> Cologne Municipal Drainage Services
> Office for Roads and Transport Development
> City of Cologne Building Management
> Office for School Development
> Office for Green Spaces and Landscape Management

Work involved

> It took a lot of time and effort to get residents interested in the topic.
> The group's ideas were evaluated and drawn up by a landscape architect and a civil engineer

Duration/timeframe

> 5 meetings of 2 hours each
> A lot of time for promoting the individual meetings
> A lot of time for bilateral coordination and developing the ideas

Public relations work during the process

> Social media posts to publicise the LAG
> Campaign on site: spray chalk campaign and hanging up banners
> Social media posts during the process as updates
> Articles on the project's own website as documentation afterwards
> Press event afterwards

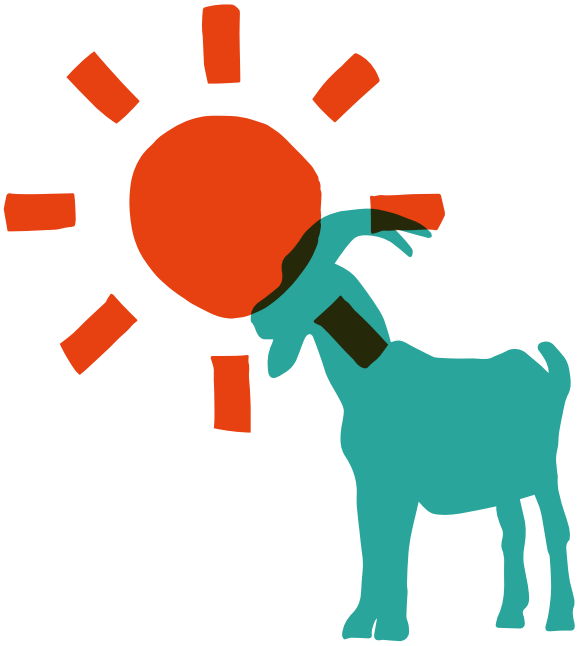
Quote from a local resident

"It was sensational. I have never experienced anything so proactive and mutually beneficial before."

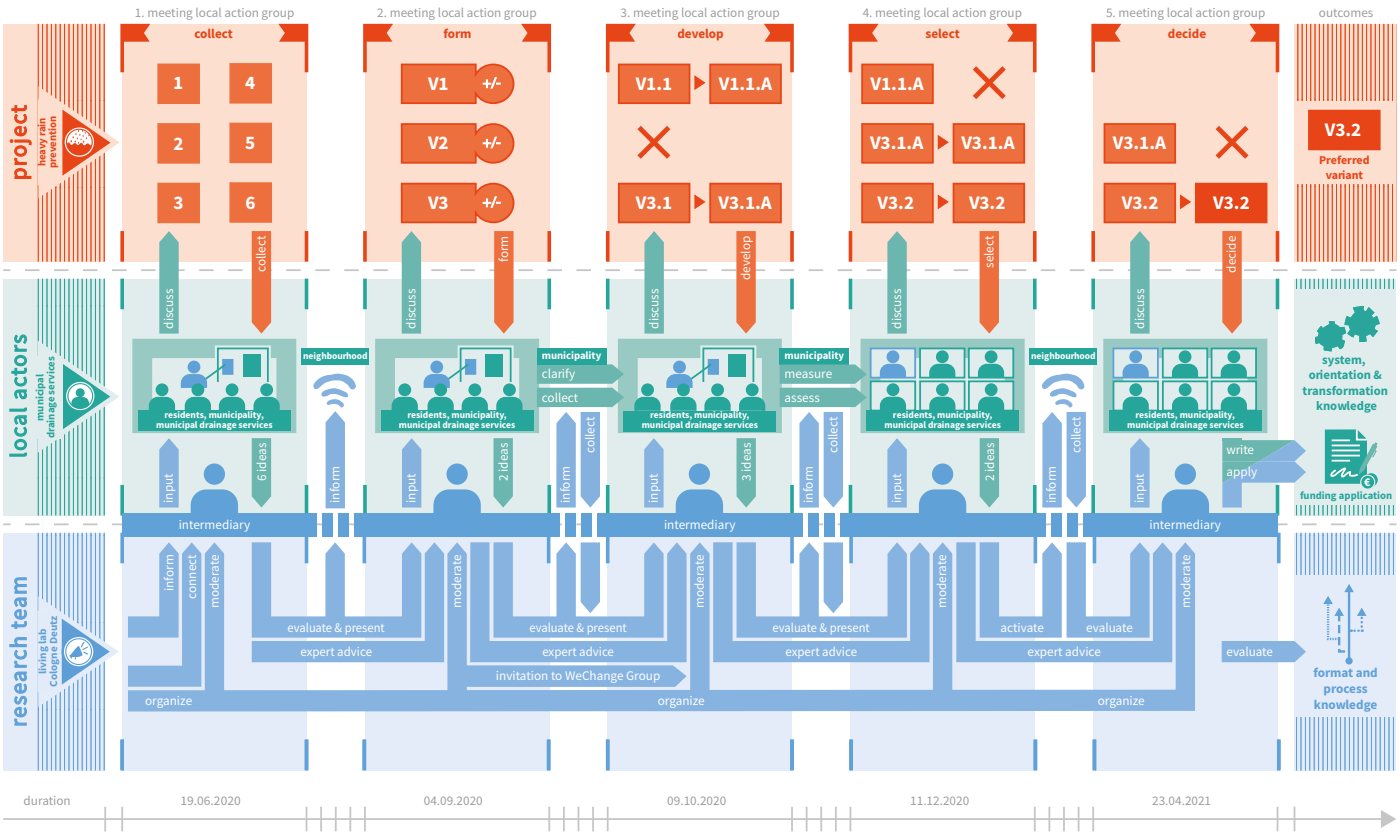
(translation by the author)

© iResilience: climate resilient design of the »Kasemattenstraße« (Luc Knödler)

© iResilience: »Von-Sandt-Platz« Cologne-Deutz



"Kasematten Strasse" Climate-resilient street of the future | Cologne Deutz



© iResilience: working process of the local action group »Kasemattenstraße«

Quote from a local authority employee

"I felt very comfortable with being in such a communicative role and I didn't feel so much like an [...] official, I was able to give my input on operational processes and also point out options from the technical side. It was very interesting to see how the local people felt about that and how my input was perceived. The whole experience was very rewarding."

(translation by the author)

"We strive to promote and develop these participation processes [...]. A lot is happening in terms of internal coordination within the departments, and different forms of participation are very valuable for all of us. This is why I am glad to be able to participate. It is enriching for me to be able to work with each other instead of against each other."

(translation by the author)

Profile

HEAT ETIQUETTE - HEAT ADVICE FOR SPECIFIC TARGET GROUPS

Aim of the LAG

> Raising awareness of extreme heat as a result of climate change
> Prepare information on extreme heat and tips on how to behave on hot days for specific target groups and distribute it to heat-sensitive people
> Create a help line to advise people how to behave on hot days and answer questions on how to manage everyday tasks

Description of the LAG

In the project, two different approaches to the same idea were tested in Cologne and Dortmund. In Cologne the main drivers were private citizens, whereas in Dortmund it was led by municipal and official organisations.

In Cologne, a group of senior citizens organised themselves through the seniors' network and jointly developed the idea of a tip list and a help line for extreme heat. The heat tip list is a two-page flyer with a map and important telephone numbers and heat tips. The map includes, for example, benches in the shade, toilets and pharmacies with delivery services. The tip list was developed in telephone conferences, the necessary mapping (e.g., benches) was done by the senior citizens themselves. The project team compiled the information and prepared the graphics. The heat help line, which is staffed by volunteers, can be used by senior citizens to find out about support services in the neighbourhood. The number can be found on the heat tip list. The telephone is staffed every day of the week at a fixed time, partly by volunteers and partly by employees of the senior citizens' network.

In Dortmund, a group mainly made up of staff from different social institutions and organisations who talked to different target groups in their daily work came together as multipliers. Together, the group amended a *heat etiquette guide from the Federal Environment Agency* (Umweltbundesamtes - UBA) with local information for Dortmund including advisory services for their target group. The heat etiquette guide contains information and advice for the entire city, e.g., a heat help line offered by two senior citizens' groups, as well as reference to the consultation times in matters relating to drinking water offered by the consumer advice centre in Dortmund. The group also prepared a short flyer for parents entitled "Tips for children in hot weather".

heat etiquette by German Environment Agency (Umweltbundesamt - UBA)
> https://www.umweltbundesamt.de/en/publikationen/hitzeknigge

Target groups

> Heat-sensitive groups, especially senior citizens
> Children and parents
> People with disabilities & chronic illnesses
> Homeless people
> Carers and advisory institutions for these target groups
> Family members who are carers themselves

Participants

> Social institutions: AWO, senior citizens' offices, Diakonie
> Environmental Office
> Consumer advice centre, environmental department
> Neighbourhood management
> Senior citizens' network
> Local residents

Duration/timeframe

- Duration of advisory services: in summer
- Designing the information materials and organising the consultations: Start planning at least (!) in spring in order to be able to distribute all the materials by summer (about 3 months)

Work involved

- For advice services: Setting up a heat help line and consultation times regarding drinking water requires staffing and time resources in summer (consider holiday period)
- Adapting the UBA's heat etiquette
- Printing and distribution

Public relations work

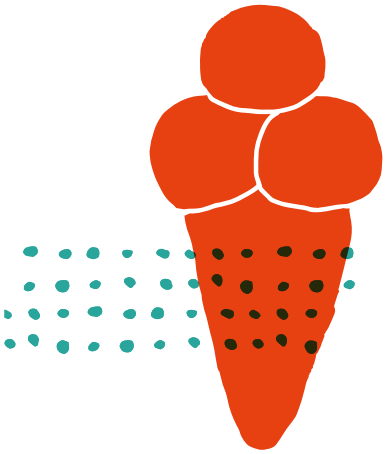
- Talking to social institutions
- Reporting on the heat etiquette and the advice services via website posts and Instagram
- Organising an information evening including a presentation by an expert on the topic of heat, including presenting the materials: Heat etiquette, heat tip list and "Tips for children in hot weather" flyer

Who else could carry out this format?

- Institutions and facilities from the social sector e.g., AWO, Caritas, Diakonie
- Senior citizens' organisations and senior citizens' advisory council
- Department of Public Health
- Senior citizens' network

© iResilience: heat etiquette and tips on heat prevention from Dortmund and Cologne 2021

© iResilience: Practical tips on dealing with extreme heat in Cologne-Deutz neighbourhood



Quote from a senior citizen

"We have worked out something that makes sense and will help the citizens of Deutz. But we are far from finished. We have simply set something in motion."

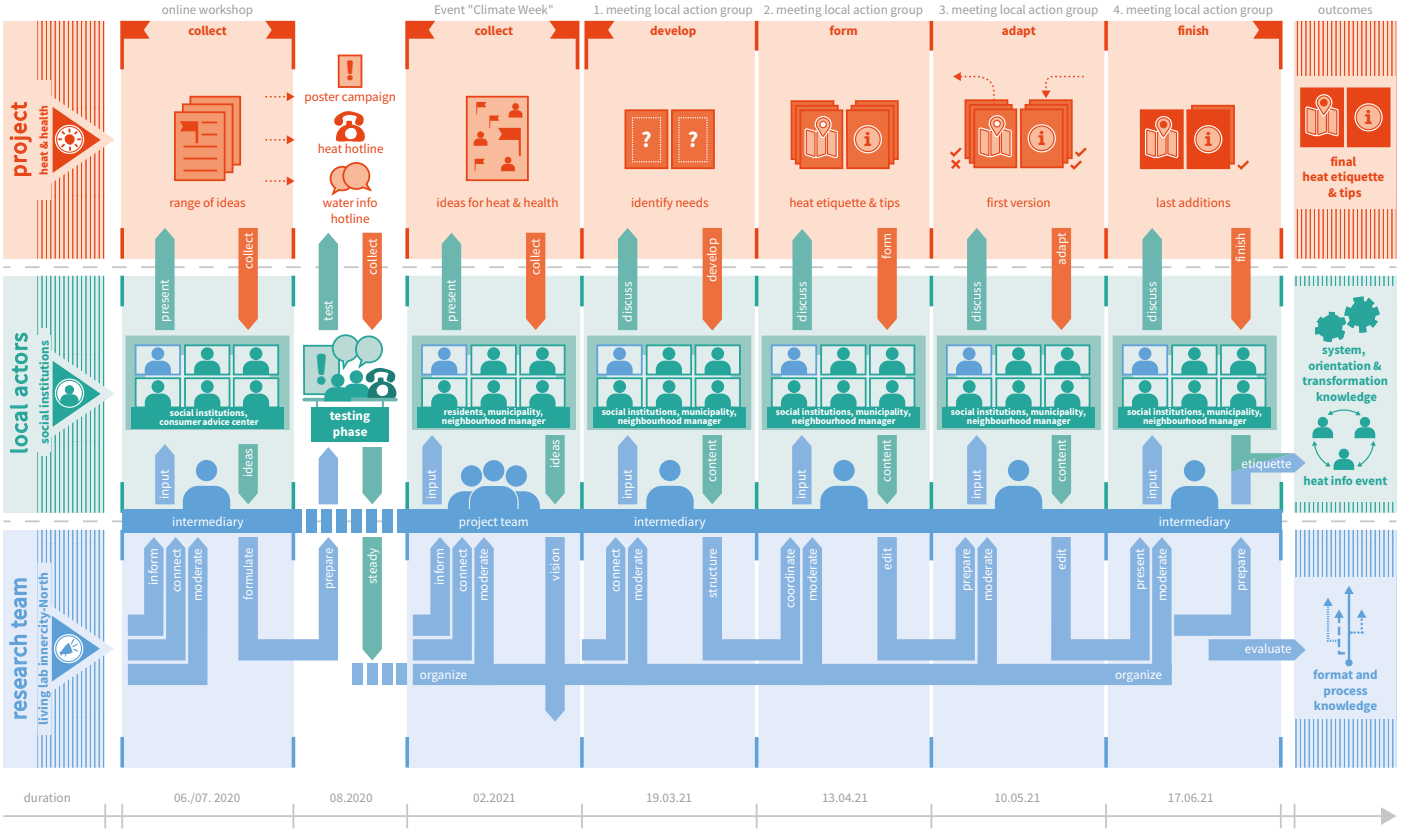
(translation by the author)

Quote from a local initiative

"I really like the fact that we have worked in a very target-group-specific way, especially focussing on senior citizens, that is why I think we have been so successful. I definitely think that the issue is more relevant in the city centre and in the suburban neighbourhoods. Although we actually only worked on our small neighbourhood, the effects go far beyond the area around Schützen Strasse."

(translation by the author)

Heat etiquette | Dortmund Innercity-North



© iResilience: working process of the local action group »heat etiquette«

Digital collaboration formats in the iResilience project

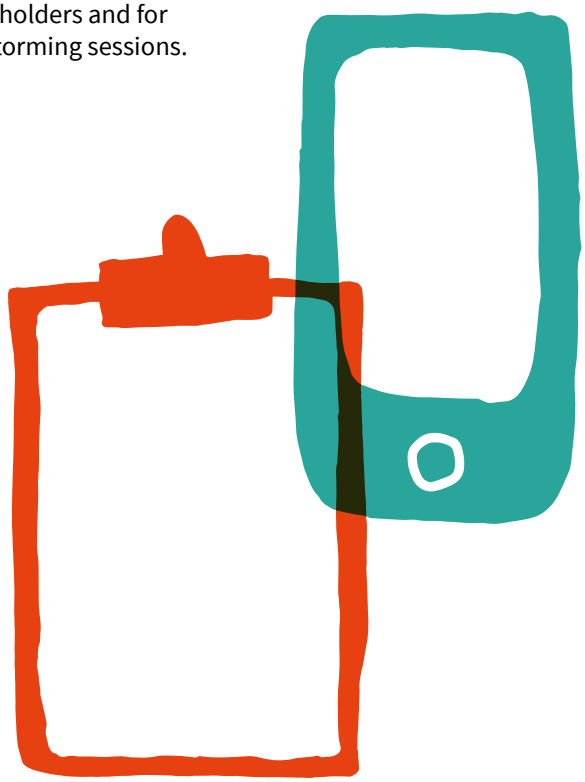
Collaborative formats for working together online are becoming increasingly important in society, especially in the world of work. The Covid-19 pandemic has boosted this development and has also led to online activities becoming part of people's leisure time. In the iResilience project, adapting our participation formats away from face-to-face events and towards online events was initially a challenge. After a transitional phase, online formats became part and parcel of the living-lab work with local stakeholders in the neighbourhoods and produced positive results. In addition to easier planning (e.g., no need to print event materials, no seating arrangements, etc.) and less lead time (e.g., no need to rent rooms) for events, they were more flexible in terms of implementation and design. Thus, weather events (e.g., heavy rain) or other circumstances could be used as a hook, and current events could be used as a motivator. The project team's experience shows that some of the events that were initially planned to be held in person and then had to be moved to online due to the current rate of infections, sometimes had more registrations, meaning that more people became involved in the process. Online events attract more people from outside, which has to be taken into account when planning. However, online events can also exclude certain members of the community. Experience from the iResilience project shows that participating online is a barrier for older people in particular.

Overall, the project team did not see collaborating online as an emergency solution, but ultimately as beneficial for the process. However, now and then the option of holding an event face-to-face would have been more suitable for a few topics. Expanding online collaboration has also brought previously unused or unplanned channels and tools into use, e.g., Cologne and Dortmund's two participation portals "*Mein*ung für *Köln*" (Opinion for Cologne) and "mit*WIR*ken in Dortmund" (Working together in Dortmund) have enormous city-wide reach and publish municipal participation activities, so that the project could also be advertised beyond neighbourhood boundaries. The project team used these portals to call for participation in various events.

During video conferences – whether internal or external – a virtual whiteboard was used to collect ideas. These were also very useful for exhibiting project results over several weeks for local stakeholders and for internal team brainstorming sessions.

Interactive maps: KlimaMap (climate map)

The KlimaMap is an interactive map of the Dortmund harbour district. Everyone living or working in the neighbourhood was invited to enter their own ideas, suggestions and proposals for a climate resilient neighbourhood on the KlimaMap. Selected measures could be located on this map and suggestions, hints, concerns and proposals could be posted. For example: Which locations get particularly hot in summer? What influence do weather events have on your own quality of life and health? What ideas are there to mitigate or avoid the consequences of climate change?



Profile

KLIMAMAP – ONLINE PARTICIPATION TOOL

Aim of the tool

> To digitally collect knowledge from local residents, e.g., on heat stressed or cooler places
> Collect concrete proposals for climate adaptation measures
> To make the opinions and mood of the neighbourhood visible to everyone

Description of the tool

The climate map is an online participation tool. It is based on an interactive map of a neighbourhood, in this case the harbour district. Participants can enter climate adaptation measures and tips into the climate map.

The pre-entered measures were the results from previous events in the Dortmund Harbour district living-lab process. So far, the residents have not specified a particular location for these measures, and the project team needs more detailed information to continue the process. For example, people entered particular hot spots during summer, places with a known risk of flooding during heavy rainfall and measures they would like to see, such as shading, street trees, drinking water fountains and much more. Each entry has to be accompanied by a comment or detailed description using a free text field. Entries are anonymous and can be read by anyone without having to register. Simplified visualisations and easy-to-understand texts on climate change and climate change adaptation make the KlimaMap easily accessible for all.

Target groups

> Residents and people working in the neighbourhood
> People with experience of and knowledge about the neighbourhood

Participants

> The City of Dortmund Environmental Office project: Masterplan for Integrated Climate Adaptation Dortmund (Masterplan Integrierte Klimaanpassung Dortmund - MiKaDo)
> K.PLAN Klima.Umwelt & Planung GmbH (a climate, environment and planning company - preparation and technical implementation)

Duration/timeframe

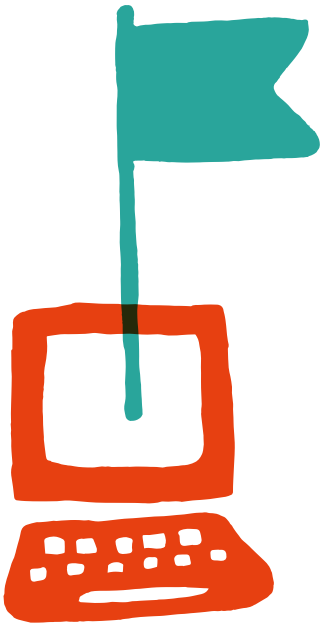
> The interactive feature of the map was online for 3 months (15.06.2020 - 15.09.2020)
> Can still be viewed online afterwards

Work involved

> Developed concept about 8 weeks before online publication of the KlimaMap

Public relations work

> Press release
> Project and city websites
> Social media (Facebook, Instagram)
> Municipal participation portal
> If possible: organise a local on-site registration campaign in the neighbourhood using tablets

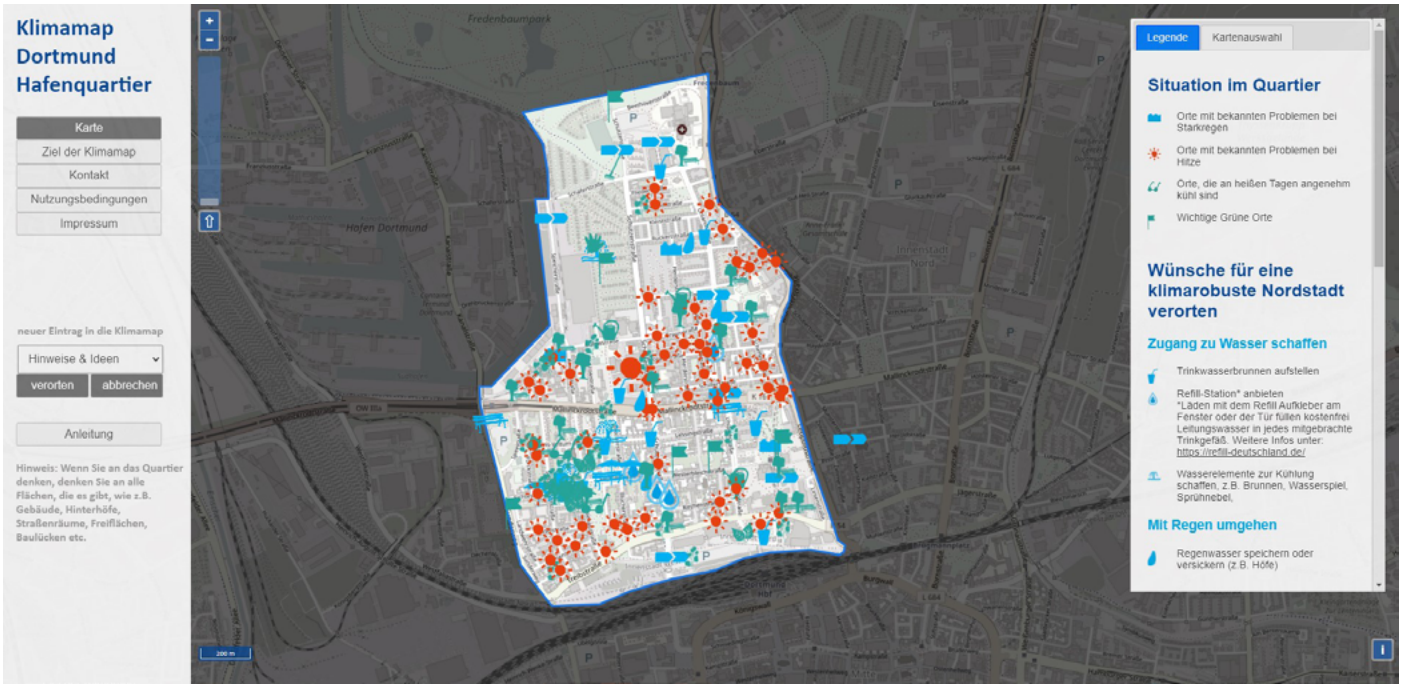


Tip

Clear instructions for online tools in easy-to-understand language with pictures are very helpful – for example as a reel on Instagram or with a video. In addition, launching this kind of map-based digital participation should, if possible, be linked to an event in the locality. Then passers-by can be shown how to make entries using mobile devices.

Who else could use this format?

- Municipal departments, and urban planning agencies on behalf of municipalities.
- Municipal research projects



© iResilience: climate map of Dortmund Harbour neighbourhood 2020

WECHANGE participation and communication tool

The social network WECHANGE was used to help mobilise people and aid communication and co-planning in the three living-labs. The project team set up a neighbourhood-specific project structure for each of their living-labs on the WECHANGE platform. There were virtual rooms for plenary sessions, thematic working groups and potential LAGs. The participants had to register for the relevant rooms with the administrator. The rooms were facilitated by the project team who also added content, including discussion materials (information, surveys, references to practical examples from other municipalities and neighbourhoods) to promote active participation in an LAG. They also offered the opportunity to enter into direct communication with the administrative staff on specific challenges in the neighbourhood. However, the project showed that there was no active collaboration on the platform. The collaboration functions did not offer any advantages for the local stakeholders in the living-lab work as it developed during the project. The tool was therefore no longer used about halfway through the project.

Nevertheless, the project team recommends that other living-lab projects try out using WECHANGE. WECHANGE has many uses, e.g., exchanging knowledge (chat function, data storage, whiteboards) and for networking or planning joint activities

The example of WECHANGE shows how important it is to constantly monitor the collaborative work in the living-lab in order to adapt the concept to the needs of the participants as required. The needs of the participants can differ and also change during the course of the project.

Profile

WECHANGE

Aim of the tool

> Simplification of communication & collaboration by using an online platform
> Collaborative work at a distance
> Team spirit is strengthened through working together
> Promote participation & facilitate access

Description of the tool

WECHANGE is a cooperative online platform for eco-social change, developed in Berlin. It is open-source software with a server located in Germany.

WECHANGE is currently used by over 35,000 users. WECHANGE is used for communication, mobilisation and participation in integrated climate change adaptation. This tool can be used to plan numerous project activities together.

It offers a variety of different functions to facilitate collaboration:
> Exchanging files
> Creating groups and projects (project structure)
> Calendar (events/appointments)
> Function to find appointments together
> Creating and assigning tasks
> Editing documents together at the same time (Pads)
> Creating surveys
> Sending messages and sharing news
> Maps to locate groups and places

Target groups

> Local residents
> Local authority staff
> Initiatives
> Interested parties, ... (participation of all stakeholders required)

Work involved

> Initial creation of structure for the project with extensive needs analysis in advance

Duration/timeframe

> Permanent use by all participants for the entire collaboration

Advantages

> Easy communication with all project participants
> Discussion and agreement is fast and direct
> Simplifies the planning process
> Increases awareness of the project (among registered users)
> Promotes visibility for search engines

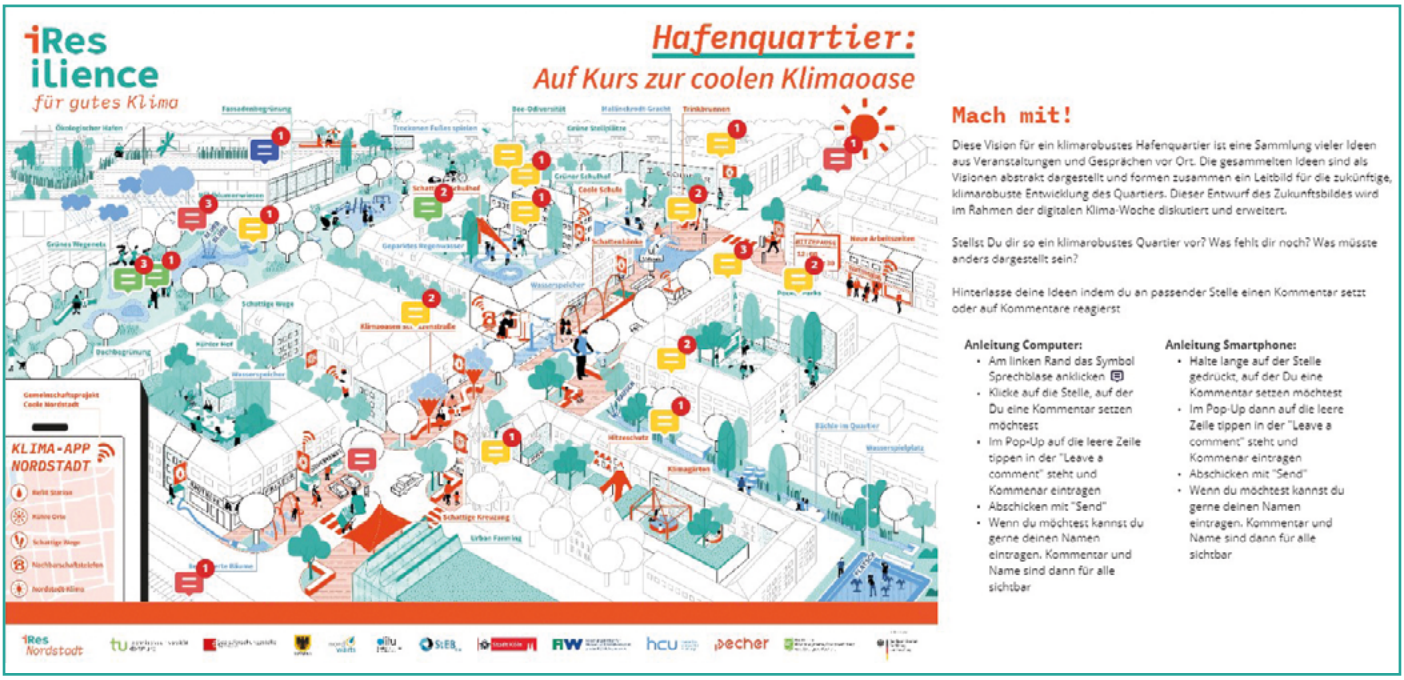
Disadvantages

> Not all project participants use social media
> Online abuse – anyone can use social media platforms to easily and anonymously express criticism in an “unfiltered” way
> Tool is new for some users. Registration could deter some participants
> Privacy, identity theft, data protection
> Creates a high barrier especially for older users, as they are often not familiar with using such platforms

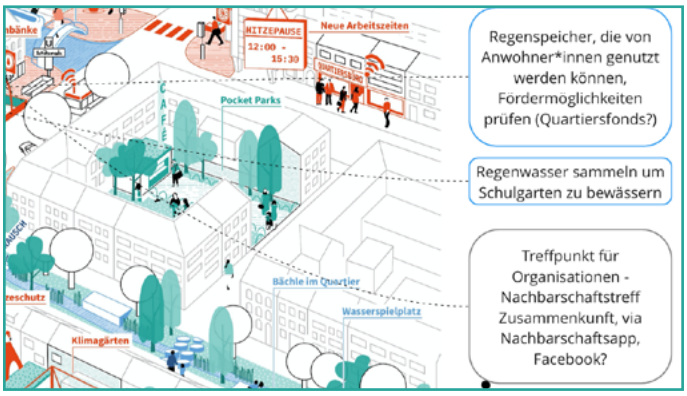
Virtual whiteboards for collaborative work

Analogue whiteboards are usually wall-mounted boards that are used during group meetings to write down or sketch ideas or other meeting content. They are highly flexible, as what has been written can be easily erased and the board can be used again for new input. In these times of online collaboration, virtual whiteboards are invaluable, as they can be used by several team members at the same time, regardless of location. This synchronous use makes them ideal for collecting ideas together on one board, they can also be used for taking notes in video conferences via screen sharing. Ready-made visual templates can also be used to save time.

In iResilience, the Miro platform was used for collaboration both internally and with the various stakeholders. Miro was used at internal meetings with the project partners to document the contents of the meetings and for brainstorming on events, academic publications or for critical reflection on their own (neighbourhood) work, as well as at external plenary and LAG events for presenting basic information and subsequently collecting ideas. Three Miro boards were also used for the digital exhibition of the first version of the visions for the future, which lasted several weeks, in order to capture opinions and enable stakeholders to comment.



© iResilience: Presenting and commenting on the vision online via Miro in the run-up to climate week, 2020/2021



© iResilience: detail of the vision on Miro

Profile

MIRO BOARDS

Aim of the tool

> Collaborative work at a distance
> Team spirit is strengthened through working together

Description of the tool

Miro digital whiteboards were used in many project contexts – both in internal cooperation and when collaborating with stakeholders from the neighbourhoods. When most of the collaborative work was online due to the pandemic, ideas could be collected easily and comments on certain issues could be written live on prepared boards during video conferences. Posters could also be created using the import and export function of pdf documents and images and used digitally for presentations. In addition, live voting can be carried out to get a feeling for the mood of the group.

Miro boards were also suitable for an exhibition of the visions for the future that lasted several weeks. Here, comments from the neighbourhood were collected over a longer period of time. The comments could in turn be commented on by other users, which created a dialogue.

Target groups

> All internal and external participants in the project

Duration/timeframe

> Ongoing

Work involved

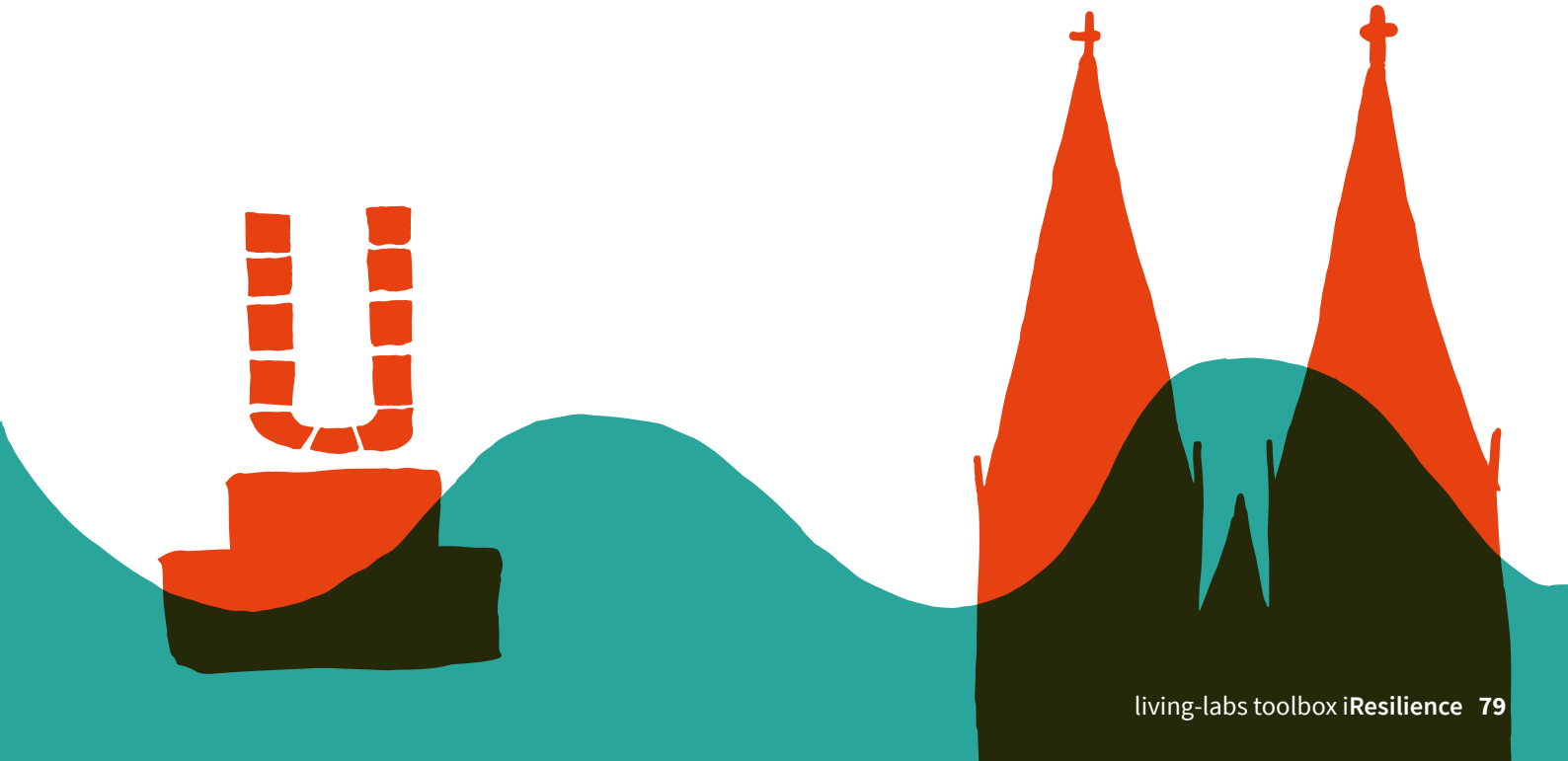
> Taking out a subscription
> Different whiteboards can be grouped into categories, which maintains clarity

Suggestions for selecting a suitable provider

> Unlimited number of boards not available with all providers
> It must be possible for several users to work together
> Must be possible to import and export files
> Some whiteboard providers differentiate between profit and non-profit organisations in their subscription systems
> Different whiteboards may interact or integrate with existing software (e.g., Slack, Dropbox, Microsoft Teams, Microsoft Word) in different ways
> Consider the size of the storage space required
> Different forms of access with varying degrees of functionality for external users should be possible (e.g.: read only, read and comment, collaborate...)

What can be learned from in-process monitoring?

In the chapter “How were formats and processes evaluated in the project” we presented the monitoring methods and the procedures. We explained that questionnaires and focus group interviews were used to monitor the plenaries and focus group interviews were used to monitor the LAGs. In addition, there was an internal reflection in the project team itself at the end of the research project, which allows conclusions to be drawn from the transdisciplinary collaboration in the project team.



Advantages of the Local Action Group format in the living-labs

In the following, we present the results of the qualitative interviews with participants from eight LAGs in Cologne and Dortmund. A total of 21 people were involved from both cities' local authorities, local initiatives (e.g., neighbourhood management, consumer advice centres, senior citizens' offices), local residents and professions (e.g., school teachers) or people who were intrinsically motivated (by their own idea). The interviews were transcribed and then all relevant text passages were assigned to categories that had already been developed in advance in the theoretical part of the work and are found again in the toolbox. The categories are assigned to the following process criteria: task definition, fairness, expertise, social learning and additionally the result-oriented approach of satisfaction with the process to evaluate the respondents' personal feelings. The results of each category were then summarised and interpreted.

Satisfaction with the process

The participants of the LAGs describe their work in this *format as successful* and are satisfied with the mutual cooperation. The participatory process was important for rethinking the previous practice of cooperation between administration, politicians and citizens and was a positive approach. According to the interviewees, the work at neighbourhood level led to those involved being able to identify with the issues and places.

Within the LAGs, *planning support from experts* was provided as needed. According to the evaluation of the interviewees, this involvement from experts from the project team contributed to their satisfaction, as concrete questions could be answered competently and, in some cases, implementation options could already be presented visually. In this way, the idea/vision became concrete and achievable. The respondents' satisfaction can be attributed to the inclusion of various different experts at the LAG meetings (urban drainage; landscape architecture). Furthermore, *new networks and cooperations* between citizens and initiatives as well as between different initiatives could be created. It is emphasised that existing networks have grown closer together and that the topic of climate resilience has become more present in the district as a result.

Quotes from local initiatives

"I was also delighted to cooperate and network with different groups and get to know people from different backgrounds. This was a big success for me personally, but also for the project."

(translation by the author)

"The project was much more than just installing rainwater storage tanks in the individual locations. It was almost an educational project, because we talked a lot with each other about why we should store rainwater."

(translation by the author)

The fact that ***concrete ideas for measures*** were already worked out during the collaboration in the LAG had a positive effect on satisfaction. People had different experiences in the LAGs. In some cases, ideas that were developed could not be implemented due to formal hurdles, whereas other LAG proposals could be put into practice quickly, thanks to suitable funding.

It is worthwhile considering how feasible implementation is right at the beginning of the process. This includes, on the one hand, keeping an eye on possible funding sources and supporting the application process, and on the other hand, integrating relevant stakeholders (such as other specialised departments or initiatives) in the process in good time.

Quote from a local resident

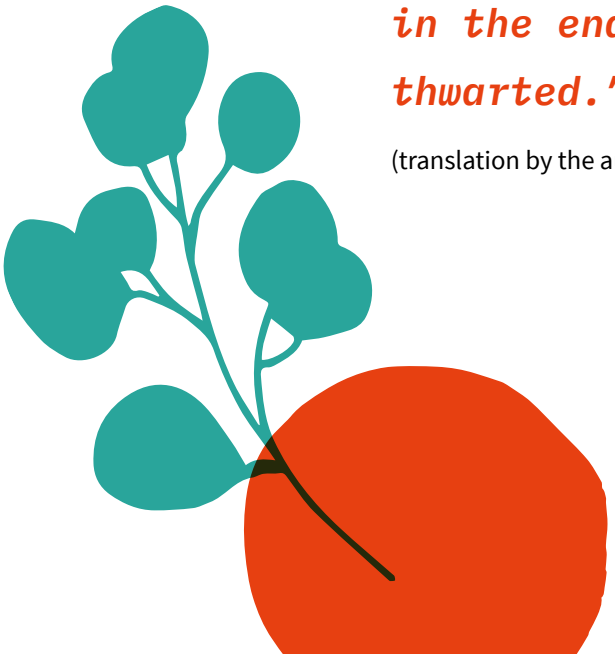
"The conversion [...] is not yet finished, but it is already very far advanced. Here, too, the iResilience project has helped us very well by providing salient information and important contacts".

(translation by the author)

Quote from a participant

"The criticism is definitely not directed at you, but at bureaucracy in Germany, which is very frustrating. I actually thought the idea [...] was fantastic. That's why I really wanted to get involved in this project, but in the end we were completely thwarted."

(translation by the author)



Definition of tasks

During the collaboration in the LAG format the personal roles and distribution of tasks were mostly clearly defined. For example, “a fair distribution of roles and tasks” was mentioned (Cologne participant). The format enabled all stakeholders to participate during a meeting and to put *forward their own ideas*. It was seen as advantageous that the division of labour was geared to the participants’ own strengths. Stakeholders were able to find their own role according to their personal, professional or organisational abilities and felt involved accordingly.

Quote from a participant

“I didn’t feel as if I was just an employee of X department, but as someone who can provide positive input regarding operational processes or can point out options based on my professional knowledge”.

(translation by the author)

However, it can also be noted that in exceptional cases there were ambiguities regarding the division of roles. In one case, the way one participant understood their own role did not correspond to how the other participants in the LAG understood it. The person felt that they had “somehow stumbled into the situation” but was seen by the other participants as the “main person responsible” (Cologne initiative). In a second case, the person’s expectations of their role and their associated tasks were not clear: “[...] what exactly is expected of me?” The interviewee recommended clearly defining the tasks at the beginning of the collaboration in the LAGs, and also making them finite (theme driver Dortmund).

The format of the LAG in the context of a living-lab made it possible for participants to change roles, in contrast to participation in other more standardised planning processes. The roles of expert, driver or critic (among others) were not fixed at any time in the LAG process. Each LAG participant is allowed to reposition themselves within the process.

Fairness

Every participant should feel included in the LAG work. It should also be possible to present one's own opinions openly in the joint working process and have an influence on the process and the results. The LAG format fulfilled these requirements for the majority of the interviewees. The participants felt that their personal concerns were taken into account and that the collaboration within the format was exemplary.

Quote from a local authority staff member

"[...] a real dialogue to achieve results."

(translation by the author)

Quote from a local initiative

"During the events there was [...] always the opportunity to contribute ideas or suggestions. I thought that was very good and there was no hierarchy, and everyone felt equal."

(translation by the author)

Expertise

For the work in the LAGs it was important that ***sufficient data and information*** about the iResilience project and analyses be provided as a basis (e.g., heavy rainfall hazard map; heat hotspots) to be able to participate in the LAGs, ensuring that everyone felt some degree of competence. This was confirmed in the interviews. It was also important to provide the LAGs with sources of inspiration, such as examples of how multifunctional areas were implemented, in order to guarantee the same level of knowledge among all participants. Within the framework of a LAG, in which each project was carried out, the majority of participants were satisfied with the expertise provided and appreciated the opportunity to involve experts from within the project.

Different types of expertise are beneficial – e.g., landscape architecture, civil engineering – in the project team, so that ideas can be worked out professionally. Concrete examples to work with are also useful when developing a common knowledge base. In communicating the need for action in one particular place, e.g., to politicians or to representatives of the specialized bodies, maps showing the effects of heat and/or heavy rain proved helpful.

Social learning

Collaborating within a LAG also aims to promote the willingness to take other values seriously and to learn from others. This collaborative LAG work was substantiated by those surveyed especially with regard to the following points: In terms of *dealing with new topics* (e.g., heavy rain), *methods* (digital/in-person), *expertise/know-how* (e.g., architecture), *project management* and with bureaucratic topics such as *funding management*, it was possible to learn from each other in the process.

Quote from an initiative

"It was enriching in terms of broadening my horizons at work because iResilience is very present, at least for me."

(translation by the author)

Quote from a resident

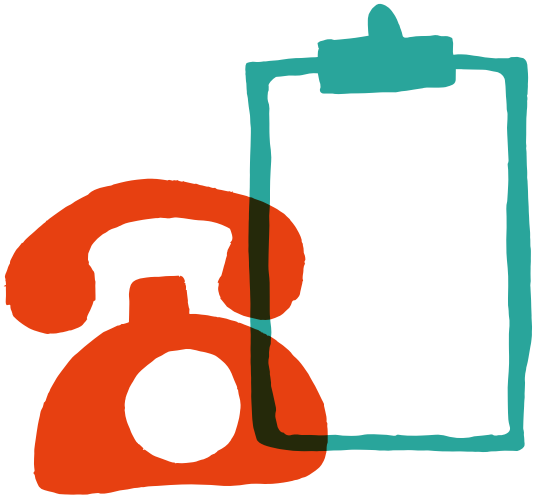
"[...]in the collaboration here in the sessions and in the groups, we're all experts in our own way and beyond, but I always take something from it, especially technically, and it's been a very pleasant experience too."

(translation by the author)

The creation of new networks through collaborative work in a LAG can also be seen as a learning effect. Working together in the LAG made it clear just how important one's own network is in the urban neighbourhood. In addition, participants were able to expand their individual networks through the work in LAGs. The LAGs also functioned as a place where information was circulated – knowledge and information about the neighbourhood was passed on here and current topics (also aside from the actual LAG topic) discussed.

In summary, the added value of the collaborative work within LAGs can be based on the benefits offered by the organisational framework, the networking of the people involved and the opportunity to expand one's own existing network. In addition, there is the option of working within a trusting cooperation and the feeling of sharing responsibility. Concretely developing ideas and the prospect of anchoring the processes in a local setting is also key. This includes the fact that participants looking to take responsibility for an idea or a measure need both contact persons and the prospect of funding to motivate them to pursue their work. Neighbourhood initiatives, and even administrative staff themselves, have actively woven topics from the LAGs into their work processes. This was seen as adding value to their own work. Through the mediating role of the transdisciplinary research team, neighbourhood stakeholders were networked with each other. In this way, the LAG format was seen to bridge a gap that obviously still exists in current planning processes in terms of personnel, organisation and communication. Particularly with regard to the local anchoring of LAGs, the experience gained in the research project provides starting points, for instance for existing instruments of urban development funding.

What needs to be considered concerning transdisciplinary collaboration within the project team?



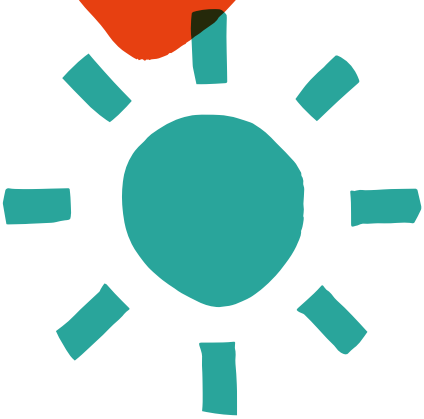
The following are the results from the project's internal reflection on the challenges facing transdisciplinary teamwork.

Challenges of transdisciplinary living-lab research often arise in trying to balance the practical relevance of the results and the scientific quality of the research. In the iResilience project, it also became clear that expectations regarding results had to be clearly formulated, as did the nature of the collaboration and the expectations of each individual.

The project partners have to be defined. The demands on the project are often different: research vs. citizens vs. administration. Everyone involved is aware of the practical *relevance* of the living-lab results, but how can the results and products be transferred into joint action, e.g., between administration and the local citizens?

To achieve this, it is important for researchers in the project team to drop their on-looker, observational stance and develop a hands-on mentality. It is particularly important for the motivation of city employees and for local volunteers that the neighbourhood is not left with "just" this transformation knowledge. They also need to know that initial transformation processes have been implemented, such as installing water tanks in the neighbourhood or setting up a permanent group for the issue of heat and senior citizens.

There is an understanding within administrations that novel *formats for collaboration* are important components for reaching local stakeholders. Administrative work, however, is mostly "measured" in terms of having implemented concrete measures as contributions to climate impact adaptation. Therefore, on the one hand, it is necessary for an administration to "try out" collaborative work, e.g., in the form of a LAG; on the other hand, it is equally important to involve scientific and professional planning partners who can jointly develop concrete measures and, in the best case, already present options (including financing) for implementing them.



What each project team member, with their individual expertise and professional background, is *responsible* for has a great influence on the implementation of a living-lab project and also on the results. Roles must be clearly delineated and defined in advance. Especially when new employees join, individual areas of expertise need be taken into account and tasks and expectations "updated" for both sides. Often, project staff see themselves in multiple roles (e.g., as municipal employees/ researchers and project staff) and this needs to be defined in the team at all times. This "update" is recommended at regular intervals (e.g., every 6 months). However, tasks cannot always be clearly delineated, e.g., between researchers and the partners from the municipalities. In transdisciplinary teams, tasks and outcomes are closely intertwined and responsibilities may vary over the course of a project. It is partly in the nature of collaboration that roles overlap. In return, however, this fosters the rewarding feeling of sharing responsibility.

Jointly defining processes and results within the living-lab work in the project team is important. Likewise, a common understanding of *terms and definitions* should be agreed upon, relating both to research questions and hypotheses (at the beginning of the project), and to *"working concepts"*. An understanding of terms often differs depending on profession/discipline and can be a stumbling block to collaboration, slowing down processes. In the course of the project, definitions can be adjusted or changed easily together in the team, thereby maintaining or even strengthening the common effort.

Continuous and regular *reflection loops* during the project – set up to be able to help each other constructively or to ponder the quality of the collaboration – need to be planned and can be prepared and followed up together in the team. This is the only way to transparently define and adapt the team's understanding of specific terms, their tasks and expectations. The ongoing reflection and documentation of the processes and (interim) results should be undertaken externally if possible.

What remains?

At the beginning of this document, the following question was raised: “Would a living-lab be a good idea for our municipality?” This toolbox for setting up neighbourhood-based “living-labs for climate-resilient urban development” presents the experience gained from the iResilience project and reflects on experience from two and a half years of neighbourhood work.

The topic of climate change adaptation is very broad, complex and abstract, and does not immediately stimulate civil participation. Among other things, by breaking down the broad topic of climate change adaptation into thematic working groups and successively into local action groups, it has been possible to recruit committed members of the public and administrative staff for various LAGs.

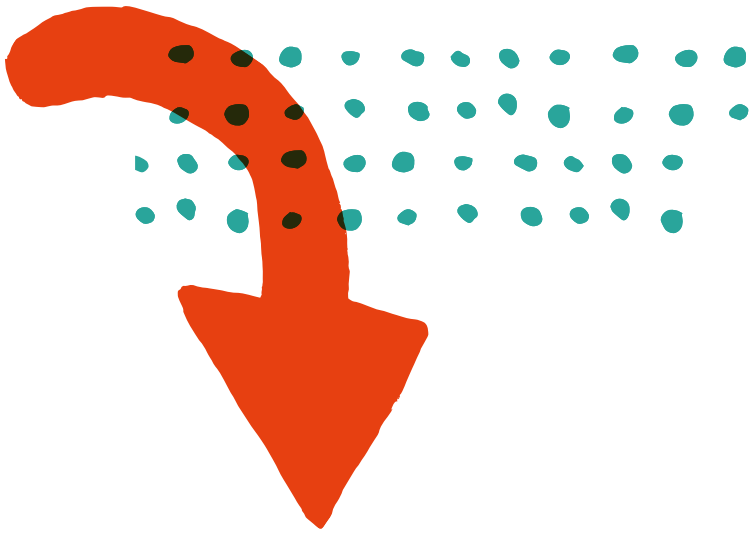
The collaboration of different stakeholders is central to the living-lab process. The first step is, therefore, to *identify the key stakeholders* who can support the design of the living-lab with their expertise. Within the work in living-lab neighbourhoods, the focus is on the *collaboration between practitioners, i.e., municipal employees and members of civil society*, supplemented by other stakeholders in the neighbourhood, such as local businesspeople.

The iResilience project has illustrated the expediency of not only involving *public sector partners as* external advisers in a living-lab process, but also of inviting them to take responsibility as *equal members of the research team*.

A very important success factor for living-labs is their *visibility in the neighbourhood*. This requires intensive *public relations work* drawing on sufficient resources. Experience shows that this task should be performed by specialists – ideally as part of the project team. For visibility, *contact persons are needed as “faces”* in and for the neighbourhood. These people should be able to identify with both the neighbourhood and the issues, they have to inspire people in the living-lab neighbourhoods and must want to make a difference for the neighbourhoods. This work is very time and labour intensive. When planning a living-lab, sufficient resources should therefore be allocated to the work in the neighbourhood, as this is essential for the success of the living-lab.

Reflection on processes and formats and transdisciplinary collaboration throughout the project is another important success factor. Time and Time and resources need to be planned for this from the outset if this task cannot be contracted externally.

Living-labs offer many advantages when it comes to *“learning from each other”*, using the expertise of local people and local authority staff as well as expert planners and researchers. Besides learning how to make one’s neighbourhood more resilient to climate change, initial visible results can be achieved (such as a new urban gardening project or a new permanent working group on a topic). Specifically pointing out these possibilities, e.g., in the case of structural or controversial measures, is likely to boost acceptance. And at best, the results will be supported in the long term by all stakeholders, city municipality and politicians. On the other hand, those responsible must be aware that living-labs are labour-intensive and time-consuming, that it is not possible to expect to achieve quickly presentable results, and that they require good planning and support. The question: “Would a living-lab be a good idea for our municipality?” must be weighed up and decided upon depending on the issue and the neighbourhood.



In summary, the iResilience project team would recommend the living-lab method for promoting climate resilience in a neighbourhood. The framework for living-labs creates space for experimentation and learning from each other, strengthens collaboration and promotes new types of collaboration between stakeholders from urban society, politics and local authorities, and makes an important contribution to the transformation of neighbourhoods.

IMPRESSUM - LEGAL NOTICE

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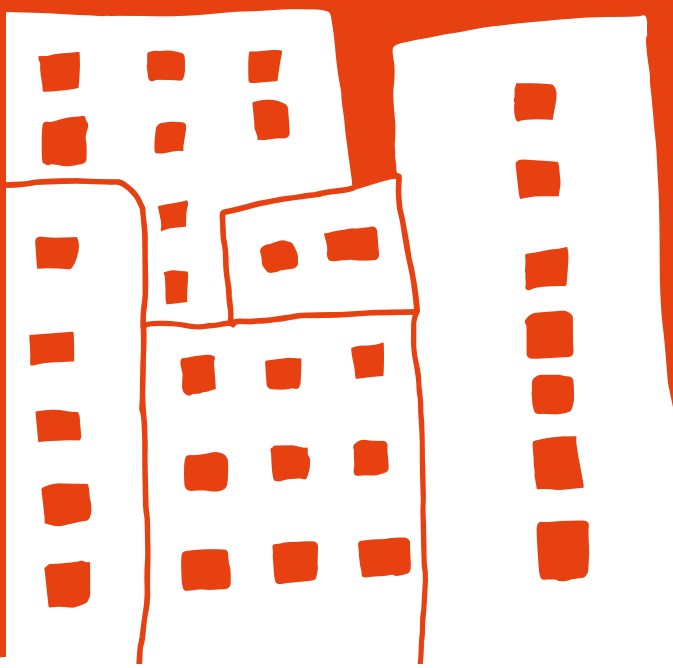

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