3 Pragmatic steps in involving the community

3.1 Introduction

We define the **local community** as the collective of (subgroups of) stakeholders with an interest (stake) in the local area, such as residents, farmers, landowners, organisations and authorities. The local community must not be confused with the municipality.

The **reasons for involving** the local community in (an early phase of) the project are:

1. **Impact**: Local initiatives may already exist that can be connected and leveraged,
2. **Knowledge**: Local people and organisations have a lot of knowledge about the specific local context,
3. **Support**: Early involvement of the community will strengthen support and understanding for solutions,
4. **Co-investments**: Solutions, relevant and matching local demand, will provoke co-investments from the local community.

We distinguish **steps in the process** (elaborated in the next paragraphs) that have a different character, described below and illustrated on the next page:

1. **Identification** of promising locations and stakeholders,
2. **Exchange** with the local community through bilateral talks, meetings, online interaction and questionnaires to examine the local context,
3. **Design** practical solutions with the local community (co-creation) that are realistic and adapted to local needs, values, interests and constraints,
4. **Implementation** of solutions requires arranging local governance (lead and ownership), finding appropriate places, suppliers and investors for realisation.
5. **Maintain, Sustain and Use** requires a stable organisation to sustain and support facilities and services to (or from) the community, collect feedback and regularly assess (if needed adjust) the business and value case.

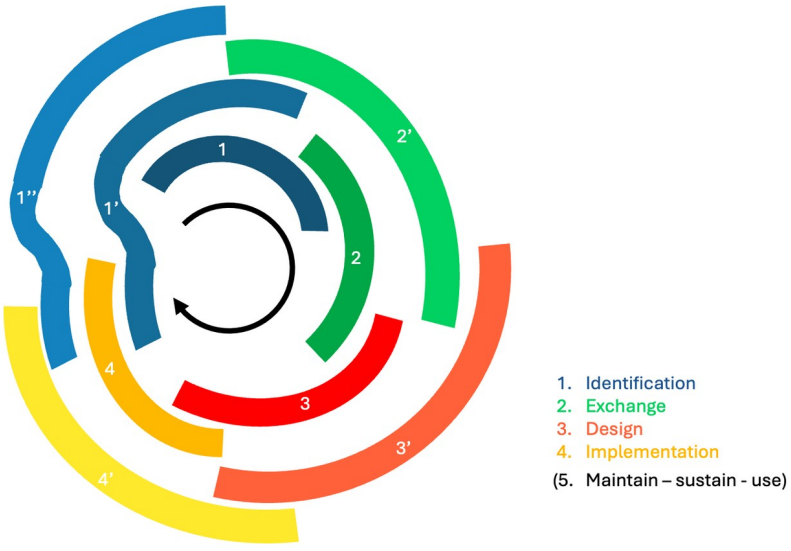

Figure 1: Impression of the cyclic, partially overlapping steps in the process of involving the local community.

3.2 Identification

3.2.1 Approach

The communities we want to involve in water management are typically location-based. This raises the question of what comes first: Selecting the community or determining the location? And, regarding community and location, what size or area do we have in mind or seems logical? Within this community, who should be involved and how do we get to know them? We actually don't know and we can't in advance formulate the right questions. There is no logical order in progressing and the only way to find out is to look at promising locations and communities and to talk to them.

In the next two paragraphs, we will look at an approach in determining what could be promising in terms of community and location, allowing to determine an initial scope for further examining the local context. We draw from examples of how the process of identification actually went in different locations, showing that many triggers and routes are possible and there is no such thing as a one-size-fits-all solution. Another source of inspiration is the participation guide around water, developed by VMM (in Dutch).

3.2.2 Locations

When identifying locations, we look for places with chances or problems. Chances may also rise as a spillover from solving problems. One might do better than just solve the problem. Chances can be discovered by taking different perspectives on places: geological, hydro-logical, landscape layout, assets and infrastructure, motivation and (land)ownership, institutional/governmental jurisdiction and scale. We will now further explain these.

When reviewing the **geological, hydrological and landscape layout** situation of a location, one could assess the quantity and quality of water bodies (lakes, rivers, streams and canals), types of soil (more or less water-absorbing, prone to erosion or landslides), groundwater levels (increasing/decreasing), differences in landscape (flat/hilly, urban/rural, vegetation, nature, agriculture), weather and climate conditions causing heavy rains, mudslides and flooding, problems of drought and salinisation (at the seaside).

We have seen flooding of highways in Germany, diverse urban areas with (canalised) rivers overflowing their banks (throughout Europe), man-made canals blocking the natural groundwater flow and tunnels leaking and draining groundwater (NL), and problems arriving with the rising of groundwater levels around a former coal mine (Bergheim, DE).

Periods of drought have resulted in water restrictions and mandatory reporting of smaller, shallower groundwater wells to local water authorities (NL, no new ones allowed) impacting agriculture and forcing changes in farming practices. We see adaptations to existing homes

and buildings, such as removing pavement (increase infiltration), installing rainwater collection systems (conserve water) and redirecting stormwater away from sewage systems (preventing sewage dilution and overflow of the system).

The discharge of pollution to rivers and streams has a huge impact on the water quality. This may, for example, come from the process industry (chemicals, PFAS), agriculture (pesticides and fertilizers) and road runoff (e.g. microplastics, salt and oil). Where possible, pollution should be prevented at the source. We have also seen situations, especially in dry periods, where rivers carry less water and the concentrations of pollution become so high, that they lead to massive dying of fish. Or drinking water companies, that use raw water from rivers and that more often need to temporarily stop the intake of water due to high concentrations of pollution.

Existing and planned **assets and infrastructures** in an area also provide chances for water hubs. These *assets might be leveraged* and used to contribute to better water management. For example, roads can be leveraged to not only provide mobility, but also act as large collectors of water. Roadwater can provide a valuable contribution to the water supply at moments of water scarcity, when collected, buffered and cleaned, and at the same time this prevents polluting the environment and surface water. In times of heavy rainfall and flooding, buffering roadwater can help to prevent it from causing problems in other locations, such as agricultural land, built environment/sewers and in drainage canals, streams and rivers.

Another way of thinking is that *assets can be combined or extended* to serve similar purposes. An example of this is a waste water treatment facility near the highway (Aachen, DE), that might also be used to clean roadwater that is currently discharged into a stream untreated.

Assets may be relieved, such as the drinking water production facilities or pumping installations. Some drinking water companies (NL) do not have enough (capacity) sources to provide water during dry periods or to extend to new neighbourhoods. Offloading the tap water and groundwater use, by providing alternatives for households (to water the garden) and for farmers (to water the fields) will relieve the drinking water infrastructure.

Finally, a location might be very appropriate for the *introduction of new (water hub) assets* that help balancing the water system, such as providing a large area for buffering water.

Motivation, sense of urgency and (land)ownership are other factors that increase the chances of successfully introducing water hubs, where ownership can be both understood as problem ownership and land ownership (we will come back to that).

Typical questions to be asked are:

- What are locations that have experienced problems, where people and governments are aware of water issues and are willing to take preventive measures?
- In which places is community involvement required because the government is no longer able to solve the issues alone?
- In which areas do individuals need each other's help because they cannot (efficiently) solve the problems by themselves any more?

Important is the need for collective action. If an individual is able to solve a problem single-handedly, then there is no incentive to work together. However, this *collective-problem-ownership* is required but not enough. The local community must also be able to influence possible solutions, raising questions such as “Who owns the land?” and “Who owns important assets?” In other words: Is the local situation *community-ownership-aligned*?

It is important to find out **what organisations or governments have jurisdiction** in a certain area and at what level they operate (local, regional, national, EU). The “further away” these organisations stand from the specifics of the local situation, the more difficult it will be to involve them in customized local solutions. Typically, higher governments also work on different (larger) time scales with respect to developing and realising. However, if you happen to succeed in involving a higher government, this may very well provide leverage to your project and to other organisations required to participate. In short, organisations and governments with jurisdiction in the area can both increase or decrease chances of success.

The appropriate **size or scale** of an area is much debated. We suggest finding a balance between keeping it “small, simple and easy for decision making” and “large enough to allow economies of scale and to have access to the required diversity to achieve multiple-value creation”. Too small and you will lose the aspect of collective-problem-ownership as discussed, too large and the decision making, the number of parties and the complexity will take away any chance of success within a reasonable time frame. We found that keeping the scale limited leads to a closer involvement of the local community and to easier decision making, while it still allows to work together with other initiatives on joint topics. However, it doesn’t come with the difficulties of a large organisation and it accommodates different speeds and timelines for initiatives, not holding each other back, but inspiring each other.

To conclude: Promising locations for water hubs can be found by taking different perspectives on chances and problems, such as the ones described above, and see if they strengthen each other. It will be a creative process of connecting the dots, weighing the pros and cons and making educated guesses.

3.2.3 Stakeholders

When identifying a community, we look for persons and organisations that are connected to and have an interest (stake) in the local area. We are especially interested in what drives them, individually, but even more in what emerges from their interactions, togetherness and community sense. We want to learn more about how the community is organised, how they connect to each other, what fabric keeps them together. Below, we will suggest an approach to take and what subgroups of stakeholders to look for.

By far the most important thing to do is start talking to people from the local community. Start with an open conversation and less of an agenda. In this early stage, being referred to other persons (enthusiasts, esteemed/key persons, experts) is the most important. Most people in a community will know to whom you should talk and are willing to bring you into contact with them. Although you might ask anyone on the street, typical entrances can be local initiatives, clubs, neighbourhood representatives, village councils, associations and municipality representatives. Meetings with local people should not resemble sermons or interrogations, but should rather bring forth dialogues and reflect genuine interest. Not only the content matters, but also the development of trusted relationships, essential for later steps. Gradually, it will be possible to gain insight into how the community operates, who are the community leaders and what is the level of awareness and knowledge within the community. Furthermore, it will become clear whether the community has the spirit, the motivation, the willingness and the energy to address the water challenges together and in collaboration. Then, it's time for the next step ("exchange"), described in paragraph 3.3.

On the topic of water-challenges, certain subgroups of stakeholders are recognised as relevant for inclusion in the identification process. We want to describe them in general terms because we noticed that the way in which responsibilities are allocated may differ throughout North-West Europe. For example, we've seen water authorities being part of a ministry or organised as an independent entity, but regionally bound, or somewhere in between. In the Netherlands, for example, large water bodies, rivers and canals are managed by Rijkswaterstaat, which is a separate "executive organisation", accountable to the ministry. We classify such stakeholders all under the subgroup of "water authorities". For different areas, this requires "translation" to the local context.

We can think of the following relevant subgroups of stakeholders:

- residents
- companies
- schools and clubs
- livability groups (neighbourhood/village)
- associations
- landowners
- farmers
- nature conservation organisations
- water authorities
- road authorities
- drinking water companies
- sewage treatment companies
- government (local/regional/national/EU)
- regional development companies
- property developers
- research institutes

The list is not complete and in every area you may encounter other relevant stakeholders. However, whether a stakeholder considers itself part of the local community and is willing to provide commitment is not necessarily clear or straightforward. Sometimes an organisation needs independent minds, persons that can think out-of-the-box or color-outside-the-lines, to make participation and innovation possible.

To conclude: Promising communities for water hubs are found where stakeholders strengthen each other, are willing to collaborate and are prepared to give and take in service of the common good. Again, it will be a creative process of connecting the dots, estimating the chances of involving certain stakeholders and making educated guesses.

3.3 Exchange

The goal of this step is to make sure that the members of the community recognise the location-based challenges and opportunities as **a shared point of departure**, making use of the provisional input from the identification step. They interactively form a general, shared picture of the situation, of the common water challenges that the community faces, now and in the future, of the relevant stakeholders in the area and what elements in the area are relevant to take into account.

An effective exchange among the members, aimed at reaching the broadest consensus on challenges and opportunities and boundary conditions, will need skilled and well prepared orchestration and a well-thought-out methodology. We will first look at orchestration and then discuss the methodological approach.

Orchestration is about taking the right initiatives, at the right time, activating the right group of members with the right techniques. The “orchestrator” is a person or small team with certain qualities. Members of the orchestrator team are familiar with the content, know the area, have a broad network, can weigh different interests, have a feel for how one interacts with stakeholders who are strongly emotionally involved, can delve into the relevant aspects of the challenge, are good at process management in direct link with the relevant content. They take and further develop an integral and independent view on the challenge, by continuously asking questions and integrating things into the overall picture. Sticking to its role is crucial for the orchestrator (team) to remain a trustworthy discussion partner for the members of the community. The orchestrator (team) might already be part of the fabric of the community or must be willing to become so.

We propose a **methodological approach** that makes use of successive techniques to interact with members of the community to initiate and promote interaction, building and strengthening relations and exchanging views:

1. **Bilateral in person conversations:** Get initial information and build relationships. It is important to start these bilateral talks with very diverse members of the community in order to explore and diverge as widely as possible at this stage and to ensure that everybody in the community feels that they can be involved in the process. The conversations focus both on making an inventory of the common challenges and goals as well as on the personal challenges, goals and interests that stakeholders have, without zooming in on the tensions that can exist between the interests of different stakeholders. This works best in bilateral conversations where people feel they can talk more freely than in group meetings.

2. **Broadcasting**: Communicate to the broader community that you will be working on water challenges with the community. Members of the community then know about the project and where to find you when they want to contact you or want to get involved. This allows you to reach out to persons and stakeholders that you might otherwise overlook.
3. **Meetings in small groups**: These meetings aim at strengthening the social fabric and creating common understanding within the group. First, stakeholders with similar interests are brought together. This enables them to clarify their shared interests in an environment where they feel safe to speak out. At the same time, the discourse can move away from possibly too rigid preferred solutions, personal interests and personal opinions.
4. **Meetings in mixed settings:** These meetings will bring together participants with different or complementary interests in order to be able to unite and balance these interests, so that the first scope/vision is developed: problem definition and possible solutions, with some concrete examples. During these meetings the long-term perspective is emphasised and methods are used to think about the common good (being in the same boat), to stay away from short-term interests and pressures.
5. **Broader validation and reflection:** This step is to challenge the first scope/vision and get feedback, possibly physically or online, in a broader meeting (webinar) or via questionnaires. It ensures a correct scope and vision with broad support and provides an invitation and teaser for community members to participate in upcoming phases.

3.4 Design

The **point of departure** at the beginning of the co-creation process must be very clear, especially the purpose of the design, the reason and “why”-question behind it. Furthermore, the focus and preliminary, tentative scope must be defined. The concrete subject of design may still evolve over time.

Co-creation requires the involvement of various stakeholders throughout the entire design process. It's not about one party 'working it out' based on the input from all stakeholders. On the other hand, not all stakeholders may be able or willing to collaborate on all subjects. It should therefore align with the energy and engagement of the different stakeholders. A good approach may be to delegate certain topics to working groups, but to discuss their results and make final decisions in plenary sessions. Still, this does not mean that all stakeholders need to be included, but the mix must be such that it allows different angles to be taken into account. It is recommended to jointly formulate some design principals.

The design should address **local needs and requirements**, such as the availability of drinking water, the possibility to connect new residential areas to the drinking water system, the availability of water for agricultural use, the prevention or mitigation of flooding and water nuisance. It is important that the design and its later implementation align with the DNA of the local environment, e.g. regarding landscape, architecture and embedding.

It’s important for the design to **align with local values**. Make sure to be aware of elements of cultural or historical significance. Other local values may include: landscape preservation, livability, fairness and justice, social inclusion. For example: Is a privatised swimming lake accessible to all members of the community or only to those who can afford it? Can we trust a privatised sewage treatment to prevent pollution from ending up in the local water system? These aspects may seem to only be related to the business and value case, but they are important to design choices too. Local values often influence the “how”.

Creating a design **in service of local interests** adds to the value for the local community. We will explain this by drawing a comparison with the energy market. At first, energy was cheap and nobody seemed to bother. Then, in Europe, scarcity drove gas and electricity prices high as a consequence of geopolitical tension. Many households ran into trouble. Something similar could happen to the drinking water system that, just like energy, cannot prioritise between users and purposes of use. If scarcity occurs in the future, prices will rise rapidly, making no distinction. It’s in the local interest to prevent this from happening and take precautionary measures, since water is a primary necessity for life. A similar argument applies to flooding and water nuisance. They involve a risk that may not occur often, but can incidently lead to significant damage.

Long-term, robust solutions are best secured by leveraging local strengths and in turn reinforce the local fabric and living environment. For example, involving local suppliers for design, construction, and maintenance ensures that local capabilities and motivation are reinforced, as opposed to choosing the cheapest supplier from other regions, which could lead to a loss of local value and autonomy. Even in situations where an external contractor works with local subcontractors (which is already better), it remains vulnerable. Therefore, direct involvement is preferable. Importantly, a local supplier has a reputation to loose as part of the community and cannot hit-and-run. This may seem to limit competition, but it should be clear that the community itself, especially if organised as a cooperative, acts as both client and contractor. Thus, there is no risk of harming the "consumer interest". The government (including municipalities) and the community can act as partners in this regard. Before any tendering process begins, the community should have the opportunity to present a proposal, similar to the European right of households to share energy among themselves without intervention of 'the market', either directly or through a collective entity.

The design must be **optimised within the constraints** that apply. This may concern means such as money or resources, as well as boundary conditions such as time restrictions, regulations, maintainability and local support. From a sustainability perspective, reuse and local sourcing of materials is recommended (low energy, low emission). For the same reason, it seems logical to make use of available local production chains, value chains and competences. Last but not least, the environmental constraints of landscape, geology and hydrology must be taken into account.

3.5 Implementation

In the implementation step, various aspects need to be addressed, including participants and users, suitable locations, governance, finances, and realisation factors. We will address each of these in turn.

For **participants and users**, a clear offer must be formulated. It is not enough that a water hub serves the general interest; there must be a distinct benefit for individual participants. This benefit should be one that cannot be achieved by an individual participant acting alone but must be realised through collaboration. Additionally, it should not be possible for an individual participant to block a collective implementation in order to negotiate personal gain. Participants should feel they would miss out on a significant advantage if they do not participate (fear of missing out effect). Lastly, some form of personal investment or recurring contribution from participants is necessary because little value is attached to a free proposition and participants might easily withdraw at the slightest inconvenience. To enhance collective involvement, participation, and engagement, decision-making power should come to rest with the participants, in a good balance among them.

Suitable locations must be identified within the area for equipment, installations, infrastructure, nature-based solutions, and/or spatial improvements. The search conducted during the identification step will also prove useful here. Crucial infrastructure should preferably not be placed with individual parties who might develop different interests in the future. Such infrastructure may be protected through contracts with landowners, clearly arranging ownership, accessibility, modifications, first-right-to-buy, etcetera. Preferably, the owners of locations are also participants in the collaboration, whose interests durably align with those of the other participants. Locations for crucial infrastructure can best be owned by a joint legal entity, accommodating the collaboration.

It is important to establish proper **governance**. Initially, this involves shaping the project organisation. The project lead could emerge from the previous orchestrator. Depending on the activities, a legal entity may need to be established for this purpose, and a board be appointed. We prefer the cooperative form due to its democratic control. Participants and users become members and help determine the direction. Decisions are made by (enhanced) majority to prevent vetoes and blockades. A daily management team will need to execute the policy. Crucial components of the water hub should fall under this collective governance. The same holds for value exchange agreements, such as mutual tariffs for demand and supply. Consideration must be given to government organisations or certain companies that, due to their structure, may find it difficult to become members of a cooperative. For them a collaboration agreement with the cooperative would suffice.

There are many different ways to **finance** an implementation. However, it is important to align the financing with the governance. Generally, those who contribute financially will also expect a say (who pays the piper calls the tune). Therefore, it makes sense for participants and users to contribute capital (i.e. invest) or pay an (annual) fee themselves. Additionally, bonds can be issued with a certain return but without voting rights. With a strong business and value case, regional development companies and banks may also be willing to provide loans. For certain risks, a government might be willing to act as a guarantor. One-time subsidies and donations can also help secure financing. For example, a water authority could save costs as a result from the implementation and donate this cost advantage to the cooperative. We do not recommend attracting external investors, as their ultimate interest is always in returns rather than locally added value.

Careful consideration is required for a number of **realisation factors**. During the realisation step, a choice must be made between using: (1) volunteers, (2) professional participants within the collaboration, or (3) external professional parties. We advise not to involve volunteers for realising infrastructure due to aspects of insurability, required guarantees, quality, and continuity. If realisation can be done by professional participants within the collaboration, it is wise to always compare their offer with those from external parties. With a market-conforming offer, preference should be given to a participant within the collaboration. In paragraph 3.4, we already discussed the advantage of involving local supply chains. Furthermore, it is important to select a party that can do both realisation and maintenance for the initial period. In such setting, this party will less likely take shortcuts during realisation, knowing it will be confronted with the resulting problems during maintenance. Carefully and wisely selecting and contracting suppliers and service providers, also looking at their DNA/company culture, is crucial for successfully realising, maintaining, and managing solutions. Whether everything runs smoothly during the operational phase will heavily depend on the choices made in this step.

3.6 Maintain, sustain and use

To maintain, sustain and use water hubs, a stable organisation is required to support facilities and deliver services to (or obtain them from) the community, to collect feedback and to regularly assess (if needed adjust) the business and value case.

For a stable, strategically aligned organisation, the board members are best sourced among (employees of) the participants, in a good mix, representing all participants. We suggest a lean and mean organisation where most of the executive tasks are outsourced. This again calls for good contracts and work arrangements with suppliers, contractors, service providers and participants.

The board should be the linking pin, facilitating the communication within the organisation, translating feedback from participants, regarding possible changes, improvements, developments and innovation, into proposals for the collective to decide upon in plenary meetings. Furthermore, the board should examine new value propositions, especially in coherence with changing value cases of related organisations, such as the water authorities. For example, introducing a “grey”-water infrastructure reliefs the drinking water network or introducing storage/infiltration basins reliefs the sewage system.