

The Skaane Living Lab *Stakeholder Mapping and the Social Context*

About Skaane

Skaane is the southernmost region of Sweden. Its population of approximately 1.2 million inhabitants represents 13% of the country's population, which makes Skaane the second-most densely populated region of Sweden. Its continental climate corresponds well to Central European weather conditions¹. Within Skaane, VA SYD is this primary water and wastewater utility, while Sydsvatten is the main provider of drinking water.

Box 1. The REWAISE Project

The [REWAISE](#) project proposes a paradigm shift towards a carbon-neutral water cycle that addresses the technological, financial, legal, and social issues such that we can harness the full value of water; that is, the social and economic value we gain "in, through, and from" water. The project demonstrates its innovative technologies, processes, and governance models in nine Living Labs that are grouped into three climate hubs: Continental, Mediterranean, and Atlantic. By way of these Living Labs, REWAISE is developing a new "smart water ecosystem" based on the mobilisation of all relevant actors and stakeholders. It is an opportunity for society to embrace the true value of water, to reduce the use of freshwater and energy, and to move towards a more sustainable and carbon-free hydrological cycle – all for the transition towards a resilient circular economy.

In the context of the Skaane Living Lab, REWAISE explores the ways in which the 'value of water' is addressed. It provides a societal analysis to understand the current state of the art and to find ways to overcome societal challenges, such as ethical and governance issues, perceived risks and benefits, and effective engagement. The purpose of this factsheet, then, is to present the results of this extensive analysis of the Skaane Living Lab.

The Skaane Living Lab

A 'Living Lab' is a user-centred ecosystem that integrates research and innovation processes in real-life communities and settings. It places the citizen at the centre and, for this reason, has shown an ability to better mould the opportunities offered by disruptive technologies to its specific needs, local contexts, and cultures. In the context of REWAISE, the Living Labs demonstrate real-world technological models and governance methods that are scalable and replicable to other municipalities and utilities across Europe.

With the changing climate, Skaane experiences increasing periods of droughts as well as more heavy rainfall events. The current water pipe system in the region is not designed to handle these peak volumes of rainwater, and, worse still, the infrastructure does not sufficiently separate different types of water, such as sewage water and rainwater, which makes the wastewater treatment less efficient than it could be. To improve this situation, the Skaane Living Lab is part of the European-founded project [REWAISE](#) to create new market niches for innovative technologies that support alternative smart water systems. The proposed decentralised water treatment technologies in the Living Lab are based on a nexus system **to optimise the use of drinking water**. In an attempt to solve its challenges of water, sewage, and nutrient cycles, the Skaane Living Lab focuses on its urban and industrial water users **to capture storm and rainwater to treat effluents** to be used

¹ Region Skane. (2020). *Environment and Climate*. <https://utveckling.skane.se/utvecklingsomraden/miljo-och-klimat/livsmedel-och-jordbruk/>.

for housing and irrigation; to develop a **self-sufficient wastewater treatment plan** to improve wastewater treatment; and to provide biogas from organic material.

The Initial Stakeholder Map in the Skaane Living Lab

The map below displays the first visualisation of who the stakeholders are in the Skaane Living Lab, and how these are connected to one another at this stage of the project. The map is organised by taking into account the so-called “quadruple helix of stakeholders”, i.e. academia, business, policy, and society, and it illustrates that those with bigger spheres are the most influential organisations out of the actors laid out on the map.

The map shows a variety of governmental and public actors, including [VA SYD](#), [Sweden Water Research](#), [the Municipality of Malmö](#), and [WIN Water](#). These are stakeholders with big spheres who already have several connections identified and, therefore, are the focal points at this stage. In contrast, we can point out which actors, such as the Nature Conservatory or the various County Administrative Boards outside of Skaane, are the outliers of the Skaane Living Lab, with only a few direct or influential connections to the network. The map also brings greater insight to the type of actors we have identified as well as the ones we are still to include. The academic sector, for one, is an important part of the stakeholders in Skaane – as is the civil society – but neither of them are sufficiently represented on the map. By way of the REWAISE engagement activities, however, and through the Living Lab, Competency Group², as well as other knowledge exchange activities, we expect to identify additional stakeholders through these processes and, thereby, increase the connections identified at this stage. Simultaneously, the stakeholder map is also beneficial to the stakeholders themselves, because it also looks to identify where there may be potential areas of collaboration between these various stakeholders.

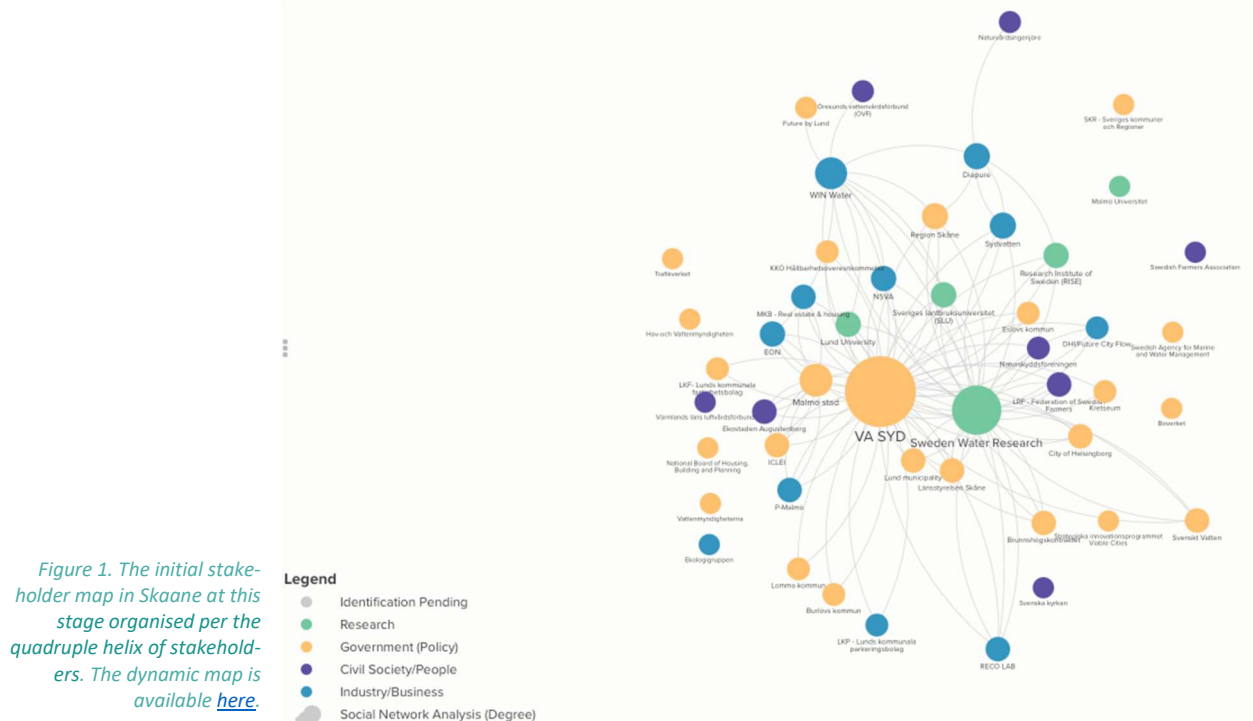


Figure 1. The initial stakeholder map in Skaane at this stage organised per the quadruple helix of stakeholders. The dynamic map is available [here](#).

² A ‘Competency Group’ is an innovative and inclusive method for co-producing knowledge between multiple stakeholders and for fostering collaborative action to overcome societal challenges. This group aims to ensure mutual gaining of knowledge through sharing values, developing strategies, implementing actions, and reflecting upon feedback. In REWAISE, 3 Competency Groups will be established to help facilitate a genuinely participatory dialogue between parties.

Topics of Interest

During qualitative interviews, the stakeholders in the Skaane Living Lab emphasised topics of interest (Table 2) with regards to water issues. The tables includes the results from a media review in relation to key issues about water at stake in Skaane.

Wastewater Leakage	Agriculture and Pollutants	Awareness and Behaviour	Outdated Water Legislation
The uncontrolled release of wastewater into water bodies and related negative consequences for ecosystems.	The role of phosphorous, as a resource. Wetlands as providers of ecosystem services are under threat by the nutrient pollution. Nutrients pollution in water bodies.	The perceived lack of awareness of the public regarding water conservation into different wastewater levels. The high-water consumption in Skaane incentivized through fixed water bills.	Laws on rain and stormwater handling are seen to be outdated and inadequate to the current climatic conditions. Timing for adapting regulations is taking too long which hinders development in sustainable rain and stormwater management.

Table 2. Topics of Interest according to the consulted stakeholders in the Skaane Living Lab. The viewpoints were derived from the interviews and a media review.

Perceived Risks and Benefits regarding the Proposed REWAISE Technologies

During the interviews, the stakeholders responded to questions about the perceived risks and benefits of the technological approaches proposed in the Skaane Living Lab. Table 3 shows these aspects, with the perceived risks on the left side and the perceived benefits on the right side. In addition, each aspect is categorised according to whether they relate to the environmental, political, socio-cultural, or technological aspects.

	Perceived Risks		Perceived Benefits	
Environmental Aspects	Concerns about drought episodes and the degree of frequency, since this is not a common occurrence in Sweden		The Skaane region is generally committed to the environmental cause and the fight against climate change	Society acknowledges the added value of the technologies committed to sustainability
Political Aspects	Further deliberation in terms of decision-making, particularly in relation to water management.	International collaborations are desirable, but legal differences poste an obstacle to building them	Strong political will for better sustainable solutions in the water sector as well as a high level of commitment to work further in that direction	
Socio-Cultural Aspects	Desertion towards rural areas to have green spaces nearby	Social ine-qualities require different approaches.	Perceived lack of social awareness of water availability	Perception of national pride in how Sweden is positioning itself in efficient water management and sustainability issues
Technological Aspects	Concerns about de-centralised water systems		Stormwater technologies are land consuming and, their monitoring systems must be made more efficient.	Added value of technologies is good for citizens and attracting new businesses

Table 3. Aspects from the interviews regarding the perceived risks and benefits of the technological approaches proposed in the Skaane Living Lab.

In terms of the value given to water, in the case of Skaane, several stakeholders mentioned that it provides leisure opportunities, which, in turn, increase short-term mental health and psycho-social wellbeing. They also found values of peace and tranquillity associated with having 'blue spaces' close by. Another aspect of the value of water is the generational aspect. There is a perceived responsibility, one interviewee said, of environmental care for future generations as well as of water resources being passed on from generation to generation. Finally, on a psychological level, the physical properties of water, such as its colour, the reflection of light, etc. generated positive reactions in the interviewees.

The Societal Context of the Skaane Living Lab

Analysing the societal context of the Skaane Living Lab lays the foundation for the subsequent completion of defining the value of water, both within [REWAISE](#) as well as in Skaane. Therefore, to find the relevant information that will help us analyse and, indeed, define the societal context of Skaane, we focused on three dimensions:

Governance Issues

There is a perceived underappreciation of what goes into the provisioning of water and the think that people are used to the fact of having treated water.

Water regulation and legislation perceived challenges involve the adaptation and better integration of new practices, a lack of clarity of responsibilities, and misconceptions around certain terminologies that affect water management. It has been identified a perceived slow update of some legal frameworks affecting water management in urban areas.

Another governance issue was about the maintenance of infrastructure, regular monitoring (i.e., accidental releases of wastewater), and checking the real-world, longer-term effectiveness of environmental innovations.

Engagement Activities

The stakeholders recognised the importance of public participation in water issues. They are committed to a continuous, yet strategic dialogue about the issues of interest, i.e. through competency groups with different actors and departments.

They emphasise that social media platforms must be relayed to the public to offer generalised information about the Living Lab.

General barriers for effective participation include timing issues and technical language issues that must be adapted to the knowledge of the participants.

Gender and Ethical Issues

Concerns about inequality, particularly in relation to spatial planning and land use have been expressed.

'Social unfairness' is inevitably related to water management and the effect it has on vulnerable groups in society.

The price of water affects the level of consumption. That is to say, the cost of water becomes an equity issue, because it affects people differently depending on one's wealth.

The Impact Pathway and Next Steps for the REWAISE Project

This study shines a light on the progress of building a network of stakeholders and partners involved in this project, as well as those who need to be further engaged. It also provides a better understanding of the public perception of the barriers and benefits perceived in relation to water.

The results collected from the Skaane Living Lab will be implemented in various activities of the project, both at the level of engagement, communication, and market analysis, and they will simultaneously form the basis for the decisions of the more technological activities. Therefore, the next steps will be to align the priorities raised by society within Skaane with the more technological decisions collected in other deliverables of the project, such as the implementation of a Competency group with relevant stakeholders to discuss about the identified topics of interest.

General Information about this Factsheet

Deliverable # and title	D9.1 - Stakeholder Mapping and Social Contexts in each Living Lab
Methodology	The approach to analyse the societal context for the REWAISE project – and the Skaane Living Lab – the social analysis conducted is grouped into six dimensions: the socio-economic context, the social structure, governance and co-creation, effective engagement, the RRI framework, and cognitive and emotional issues. These dimensions have been a guide from which we build the data gathering process, based on qualitative approach including the interviews and questionnaires.
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