water

MDPI

Article

Municipality–Property Owner Collaboration for Climate-Robust Stormwater Management: Experiences and Perspectives from Swedish Actors

Erik Glaas, Sofie Storbjörk and Mattias Hjerpe *

Department of Thematic Studies—Environmental Change, The Centre for Climate Science and Policy Research, Linköping University, SE 581 83 Linköping, Sweden; erik.glaas@liu.se (E.G.); sofie.storbjork@liu.se (S.S.)
* Correspondence: mattias.hjerpe@liu.se; Tel.: +46-11363438

Abstract: Climate change and urban development patterns amplify the risks of flooding and water pollution. While climate-robust stormwater management has the potential to reduce these risks, its implementation remains slow. Enhanced and new forms of collaboration between municipalities and property owners are proposed as the keys to advancing the volume and effectiveness of such measures. However, the practical outline of new collaborative practices between these actor categories within existing built urban environments is still in its early stages. This study uses the experiences and visions of respondents from eleven municipalities and six property companies in Sweden to start examining the challenges, needs, and requirements for such forms of collaboration. The study identifies current challenges, including ambiguous legislation, organizational differences, unclear roles and responsibilities, and weak economic incentives. Requirements for improved collaboration opportunities include overcoming perceived legal obstacles, assigning collaboration coordinators, establishing long-term collaborative forums, and clarifying financial principles and cost-sharing arrangements. Creating the conditions for collaboration thus requires changes in formal national frameworks, as well as changes in local organizational structures, norms, and traditions.

Keywords: public–private collaboration; sustainable stormwater management; climate adaptation; urban built environment; flood risk management

Academic Editors: Hao Wang and Jinjun Zhou

Received: 28 February 2025
Revised: 18 March 2025
Accepted: 19 March 2025
Published: 22 March 2025

Citation: Glaas, E.; Storbjörk, S.; Hjerpe, M. Municipality–Property Owner Collaboration for Climate-Robust Stormwater Management: Experiences and Perspectives from Swedish Actors. *Water* **2025**, *17*, 925. https://doi.org/10.3390/w17070925

1. Introduction

Climate change, combined with urban densification and outdated, under-dimensioned piped stormwater systems, is gradually amplifying the risks of urban flooding and pollution of ground waters, lakes, and waterways. Despite a growing focus in research and policy on local management practices, sustainable drainage systems, and nature-based solutions to reduce these risks, practical implementation remains slow and challenging [1,2]. This is particularly true for existing urban environments, which are often dense, developing over time, and characterized by complex land-ownership patterns and responsibilities among various public and private actors [3–5].

To overcome current bottlenecks and move from policy to implementation of climate-robust stormwater management, the involvement of non-public actors in co-creating new and innovative measures is essential [6]. However, stormwater management traditionally relies on technical expertise to deliver piped services to customers. Similarly, property owners expect a smoothly functioning system without additional contributions. In this context, collaboration is unchartered territory, and introducing it to actors unaccustomed

to interacting on such complex issues is challenging, requiring them to move beyond conventional responsibilities [7] and established governance practices [8]. This is especially true for collaboration between municipal departments and property owners, key actors in the transition towards climate-robust stormwater management [3,9,10]. Such public–private interactions are particularly important in contexts like Sweden, where the current distribution of responsibilities for adapting the urban built environment is ambiguous, and where policies have not yet led to sufficient action [11,12].

Despite the recognized need to enhance collaboration between municipalities and property owners, research on such practices is scarce. However, studies on related issues do exist, primarily addressing municipality-led collaboration processes with various actor groups. These studies have identified several challenges, including the need for new roles and skills for municipal officials, restrictive laws and regulations that hinder collaborative governance [13]; unclear divisions of responsibilities [7]; difficulty in balancing new interactive roles and achieving desirable outcomes [14,15]; socio-institutional path dependency [1]; and a lack of problem awareness and knowledge of solutions among property owners [16]. Facilitating factors identified include political support [13]; social acceptance [1]; funding for participation and implementation of measures [17]; learning and trust-building [18], and clarified terms for interaction [15]. Nevertheless, whether and to what extent these factors are relevant for collaborations between municipalities and property owners on climate-robust stormwater management, and how new and/or enhanced forms of collaboration can be formed, remains underexplored.

In response to the call for increased public–private interaction for climate change adaptation in the urban built environment, this paper explores the experiences and visions of Swedish property companies and municipal representatives regarding the needs, suggestions and requirements for new climate-robust urban stormwater management collaboration. The study is guided by the following two research questions (RQs):

1. What current challenges does municipality–property owner collaboration encounter in working for climate-robust stormwater management?
2. How can new collaborative practices between municipalities and property owners be stimulated to co-create climate-robust stormwater management measures in built environments?

The study is based on qualitative interviews with municipal officials from eleven Swedish municipalities seeking proactive ways to adapt their urban built environments to climate change. It also includes qualitative interviews and workshops with representatives from six Swedish property companies that have initiated systematic work on climate-robust stormwater management practices. These actors are well-positioned to have experienced the challenges of current stormwater management practices and to envision new collaborative arrangements and the requirements for transitioning to their implementation.

The article is structured as follows: Section 2 presents conclusions from previous research. Section 3 provides an overview of the policy landscape for climate adaptation and stormwater management in Sweden, as well as the design and execution of the study. Section 4 presents the main results, focusing on respondents' experiences and views on collaboration for climate-resilient stormwater management. Section 5 discusses the results in light of previous research and the implications for stimulating new and expanded collaborative processes.

2. Previous Research

Both research and policy call for actions to make urban stormwater management more sustainable and climate-robust to reduce the risks of flooding and water pollution. However, studies have found that implementation is slow and predominantly occurs in

new development areas [2,8]. In existing built environments, implementation is more challenging due to technical difficulties, such as old stormwater systems, and because public actors own only a small portion of the land, limiting their ability to induce actions through regulations [3–5]. Municipalities and property owners are described as key actors in the transition towards climate-robust stormwater management since they own and manage most urban land, are responsible for maintaining interconnected infrastructure systems, and often need access to each other's property to implement actions in the urban built environment [10]. Since this transition needs to be coordinated to be efficient, scholars argue that municipality–property owner collaborations need to be developed in the future [7,9,19,20].

Yet, few studies have addressed collaborative processes involving property owners in actions for climate-robust stormwater management, despite their key role as enablers and gatekeepers for implementation. However, research on similar actors and collaborative processes can potentially inform how the conditions for municipality–property owner collaboration are affected and can be improved. This study explores five factors found to influence collaborative processes in previous research.

2.1. Formal Institutional Setting

Due to differences in national legislation and local policy landscapes, the formal institutional setting for municipal stormwater management varies greatly across countries [21]. Generally, however, and particularly in Europe and the US, Novaes and Marques [21] describe a shift in stormwater management over time from focusing on quantity to quality aspects due to concerns about water pollution, and then back to a greater focus on quantity aspects considering increased pluvial flood risks from climate change. In the EU, the Water Framework [22] and the Floods Directives [23] have been important catalysts for stormwater governance, but they have influenced national legislation to varying degrees, and goal conflicts between the directives have been found during implementation. The legal conditions for actors are also greatly influenced by other related national legislation, creating a complex and uncertain institutional context in many countries [24,25].

This complex and sometimes weak formal institutional setting has challenged collaborative practices. For example, Becker [26] attributes the identified low degree of cooperation between stormwater management officials at water utilities and officials working with flood risks to a misfit between the legal framework and the collaborative networks implementing it. Regarding municipality–property owner collaboration, Hedensted Lund [13] found that clashing norms from different governance paradigms challenge local collaboration processes. Previous studies have also found a lack of legal rights for municipalities to enforce requirements for property owners [24], and use economic instruments to motivate actors to implement actions [27,28] to act as barriers.

2.2. Organizational Logics and Traditions

Previous studies describe stormwater management as entrenched in a tradition of public "top-down technocratic systems of governance and management" ([29], p. 439), where local authorities focus on providing services through centralized piped infrastructure [18]. Although stormwater management is gradually incorporating more open solutions with added values, governance processes have arguably not evolved accordingly, creating collaborative barriers for both public and private actors [9,26]. A significant emphasis on cross-sectoral interaction, collaboration, and learning is necessary to overcome this path dependency and redefine the system [9]. To facilitate collaboration, Mehring et al. [18] suggest that municipalities better understand the challenges and concerns of private actors.

This requires flexibility, which is difficult for municipalities due to longstanding traditions of stability and predictability, and a reluctance to share power with private actors [13].

2.3. Ownership and Responsibility

Organisational traditions often hinder holistic stormwater management due to the division of responsibility for underground and on-ground infrastructure, land, and buildings [20]. This division is frequently shaped by overlapping legislation, limiting actors' actions and reducing their flexibility. For example, Storbjörk et al. [5] highlight that in Sweden, municipalities can use water and sewage fees to build or improve facilities to meet capacity demands but cannot use these funds for systems managing extreme rainfall, as per the Swedish Water Services Act [30], these must be priced according to the principle of cost recovery. Municipalities can use tax funds for facilities handling extreme rainfall, but the Swedish Local Government Act prohibits these from benefiting individual businesses or citizens [31]. Property owners have a responsibility to protect their properties from flooding, but the Swedish Planning and Building Act prevents them from diverting water onto others' land if it causes harm [32]. Trell and van Geet [7] found that such ambiguities and overlaps in responsibility discourage both action and collaboration among actors.

Moreover, collaboration between municipalities and property owners is influenced by perceptions of the distribution of responsibilities for actions [7,13,17,33]. Many property owners are unaware of their role in climate adaptation and lack the experience to act, often viewing municipalities as primarily responsible [27,28,34]. Increasing awareness and capacity among property owners is crucial for engaging them in collaborative planning [35]. Municipal actors are expected to initiate and facilitate these interactions by developing new incentives for collaboration [17].

2.4. Roles, Trust and Relations for Collaboration

Studies have found that knowledge transfer, predominately from public to private actors, often hinders collaboration [36]. The key to fostering collaboration is knowledge of efficient, manageable, and cost-effective actions [16,34] and understanding of why these actions are necessary [37], rather than merely increasing knowledge about risks. Establishing a collaborative platform where new roles and working methods can be jointly explored is also crucial [7]. Creating such platforms requires municipalities to move beyond traditional informational roles and adopt a facilitating role, while property developers must balance their roles as partners, competitors, and defenders, which has proven challenging [14,15]. Consequently, municipalities and property owners must manage their respective organizational roles while developing new collaborative roles and norms to build trust and sustain relationships [13,14,37].

2.5. Motives and Incentives for Collaboration

Trell and van Geet [7] found that key motives for actors to collaborate on climate adaptation include a sense of urgency and problem recognition, with a common understanding of the local issue being crucial for incentivizing active participation. This is particularly challenging in areas not previously affected by issues like flood damage, so motivation must also be based on other potential values of collaboration. Studies have shown that developing a shared vision, such as a sustainable city district, is important for engaging and progressing collaborative processes [37]. Incentives to participate strengthen when actors strive for joint deliberation and learning [17], and when contributing actors perceive they have something to gain from the collaboration in terms of achieving better results [13]. To facilitate a broad involvement and active participation among key actors, Begg [17] argues that support from public authorities is essential in initial phases.

3. Materials and Methods

3.1. The Swedish Policy Landscape on Stormwater Management, Climate Adaptation and Municipality–Property Owner Collaboration

According to the Swedish Water Services Act, municipalities must have legal control over their water and sanitation infrastructure, but the infrastructure can be owned by, e.g., a company that the municipality owns in whole or in part. The most common form is that Swedish municipalities own and manage the infrastructure within a separated municipal department. In this study, the water and sanitation organization is called "water utility", regardless of the form in which the operations are conducted.

In urban areas, municipalities are generally responsible for stormwater management up to a 10–30-year rainfall event [38], traditionally using pipe systems to meet these requirements. According to Swedish environmental legislation, stormwater is classified as wastewater, requiring treatment to maintain environmental quality standards. However, determining when and by whom stormwater should be treated is complex in practice. Additionally, stormwater management is governed by other overlapping and sometimes contradictory laws aimed at reducing flood risks. This separation of responsibilities for stormwater and flood risk management creates practical challenges. Many Swedish municipalities have, however, embraced the need to implement more blue-green infrastructure and nature-based solutions to manage both increased flood risks and stricter requirements for storm and wastewater treatment, as clearly expressed not least in the EU Floods Directive (2007/60/EC), the updated Urban Wastewater Treatment Directive (2024/3019) and the Swedish Climate Adaptation Strategy.

Climate adaptation has been a national policy area in Sweden for the past 20 years. However, it was not until 2018 that the first Swedish national climate adaptation strategy was presented [39]. The strategy identified seven climate-related risks, including flooding, to be prioritized, but left much to the actors within their areas of responsibility to decide how to address these risks [39]. In the updated 2024 strategy, the government emphasized the need to clarify both the distribution of responsibilities and financing arrangements, and to increase collaboration between water and sewage utilities, municipalities, and property owners to accelerate urban climate adaptation [40]. Property owners and municipalities are key actors since they are responsible for managing risks that threaten their land, buildings, and operations, and municipalities because they own and manage critical infrastructure for adaptation [41].

Public–private collaborations in urban planning and development have gradually evolved. Initially, in the 1980s, these collaborations were characterized by one-way information during public consultations. Since the late 1990s, they have developed into more sophisticated property developer dialogues involving various degrees of co-creation [15,42]. However, in the urban built environment, the tradition of involving private actors in collaborative practices has not yet been institutionalized.

3.2. Study Design and Selection of Respondents

This study builds on qualitative empirical data from municipal officials and property owner representatives. We selected municipalities and large property companies that have initiated proactive work on climate adaptation and/or sustainable stormwater management, as this was expected to increase the likelihood of finding actors with experience in public–private collaboration on these topics.

Eleven municipalities were chosen based on their advanced climate adaptation strategies for the built environment, as indicated by national rankings [43], and/or good practices in urban built environment adaptation [44]. The selection included three large municipalities (population 350,000–975,000), six medium-sized municipalities (population

66,000–145,000), and two small municipalities (population 38,000–42,000). Interviews with ten municipal officials were conducted initially, with an additional municipality included later to expand the empirical data.

Six property companies were selected based on their high ambitions and previous experiences in sustainable stormwater and/or flood risk management. Four companies were included in the initial data collection phase, with two additional companies added later to expand the empirical data. All studied property companies are large by Swedish standards, with 100–400 employees and a turnover of EUR 120–270 million. Four of the six companies have property portfolios within one or more of the studied municipalities.

3.3. Research Methods and Materials

Two research methods were used to collect data: workshops and qualitative interviews. According to Ørngreen and Levinsen [45], workshops are suitable for opening discussions on problems and solutions in a collaborative setting, with researchers "identifying and exploring relevant factors in a given domain by providing means for understanding complex work and knowledge processes". This study is based on six workshops with the four property companies included in the initial data collection phase: one workshop with all four companies, one with three companies, and four with one company at a time. The workshops, conducted between December 2019 and November 2022, included 4–10 company representatives each and lasted between 1 h and 25 min to 2 h and 30 min. Workshop topics covered stormwater management, climate adaptation, and public–private collaboration.

Semi-structured interviews were conducted with one municipal official for each selected municipality, and one representative from each of the two property companies included later. The municipal interviews involved strategists, planners, coordinators and heads of units responsible for stormwater management, cloudburst management, environmental management and/or climate adaptation. The property company interviews involved an environmental coordinator and a climate adaptation coordinator. The municipal interviews lasted between 1 h and 1 h 40 min and were conducted between July 2021 and September 2023. The property company interviews lasted between 45 min and 2 h and were conducted between September 2022 and April 2023. The interview guide covered questions about the organizations' work with stormwater management and climate adaptation, views on their own and other actors' roles and responsibilities, and experiences of collaboration involving municipal departments and property owners on related issues.

All interviews and workshops were audio-recorded. The data analysis followed Braun and Clarke's six-step approach [46]. First, all interviews were transcribed to allow familiarization with the data. Second, the entire data set was coded inductively to identify initial codes. Third, codes were sorted into broad candidate themes. Fourth, candidate themes were reviewed and matched with highlighted respondent quotes. Fifth, final themes were established and named. Sixth, selected quotes were analyzed in detail as the results section was written. The validity of the interview and workshop analysis was strengthened by comparing quotes from different municipal and company contexts [47], revealing a high level of agreement in many response patterns.

4. Results

This section is divided into two main themes, where 4.1 reports on current challenges and limitations experienced (corresponding to RQ1) and 4.2 on stimulating new collaborative arrangements and pinpointing the requirements/enablers of such interactions (corresponding to RQ2).

4.1. Current Collaborative Challenges

Several challenges for collaborative practices are identified in the study. First, above all, municipality staff clearly viewed that the current legislation constrained much-needed adaptation actions as well as incentives for public–private collaboration. One such aspect was about the ability to demand actions from others. The respondents clarified that municipalities are not allowed to demand property owners to take flood mitigation actions on their properties, as illustrated by the following quote:

> "I feel like we lose pace, because we cannot control the individual property owner. We can recommend, but we cannot demand".

The views on the implications of this lack of authority diverged among respondents. Municipal respondents felt that this clearly contributes to a significant adaptation deficit and inaction in the built environment, as it limits their ability to steer and control the implementation of what they consider necessary actions. A related concern is the municipalities' ability to support property owners. Referring to chapter 2, paragraph 3 of the Swedish Local Government Act [31], which states that "members are to be treated equally, unless special reasons suggesting otherwise", several municipal respondents indicated that current legislation severely constrains their ability to initiate and fund stormwater measures in the urban built environment, which may disproportionately benefit certain property owners.

This restrictive interpretation suggests that municipalities are not allowed to finance any stormwater measures on private land, or on municipal land adjacent to private land if it would potentially increase the value of individual properties. For example,

> "We are back tied. The Swedish Local Government Act states that we cannot benefit private business or private actors. We may have critical societal functions on private land, but we cannot take measures that increase real estate values. We are hindered. Some municipalities do this anyway, but we get signals from our administrative heads that this is not how we will act".

This significantly affects collaboration possibilities by reducing economic incentives and limiting actions to situations where only municipal property values are impacted. This is highly unlikely in dense urban environments with fragmented landownership and numerous privately owned properties.

Moreover, municipal respondents noted that limited and unclear legislation for above-ground management of stormwater, combined with the novelty of this task for municipalities, constrains their ability to collaborate with property owners. The role of the municipality in this context is unclear and differs significantly from their role in other matters. The current lack of legislative guidance thus requires municipal staff to find new ways of working, while being cautious not to conflict with other legislation.

In contrast, property company staff unsurprisingly did not view the municipalities' lack of authority to demand climate-robust stormwater measures on private land as problematic. They referred less frequently to legislation and saw the municipalities' lacking ability to control as a window of opportunity for enhanced collaboration. They argued that when municipalities "cannot dictate where and by whom measures should be implemented", property owners should be involved earlier in the planning. However, while property company respondents emphasized their independence in prioritizing actions, they also acknowledged the importance of dialogue and guidance from the municipality on which properties to prioritize. This was seen as especially important to avoid overlooking buildings with significant social functions, where municipalities were seen as best positioned to judge.

Related to other legislative challenges mentioned by the municipal staff, some property owner staff expressed similar concerns. Notably, they highlighted the limited possibilities for municipalities to fund actions that could potentially increase property values, suggesting that municipalities may over-interpret the above-mentioned paragraph in the Local Government Act. For example, a property owner representative noted that municipalities tend not to follow this paragraph as strictly on other issues, such as neighbourhood security measures, which might also affect property values.

Second, both municipal and property company respondents illustrated how current organizational differences hinder their ability to collaborate on climate-robust stormwater management. From the municipal perspective, relatively new challenges like climate-related risks disrupt existing municipal organizational boundaries, the traditional "silos". Consequently, municipal actors need to put effort into initiating cooperation even with other municipal actors and water utilities, which constrains not only internal municipal actions but also the capacity to collaborate with external actors since it is unclear who should "represent" the municipality. This issue was rooted in the organizational and legal division between stormwater and cloudburst management, with stormwater management having a longer history of organizational anchorage, traditions, and representation than cloudburst management, which can create challenges for the latter.

From the perspective of property companies, organizational difficulties were highlighted as the most prominent constraint for future collaboration on climate-robust stormwater management. Differences in lead times, budgets, and organizational management styles between municipalities and property owners were seen as making it difficult to align with each other, thus constraining collaboration. For example, one property company respondent noted the following:

> "... and then it is about their own budget and that process is much slower than ours. It takes longer. It must be presented to committees. Therefore, I think it can get a little messy".

The same dilemma is noted between the agendas and priorities of municipalities vis à vis appointed water utilities:

> "Collaboration is based very much on an understanding of each other's organization. Just because we are owned by the municipality, we do not understand what the municipality's administration does and vice versa. We have different lead times, we have different finances, we have different mandates, different leadership philosophies".

There were also instances where differing organizational agendas and timelines hindered potential collaboration on actions to make urban stormwater management climate-robust. In one municipality, a flagship project aimed at opening up a large, culverted stream crucial for urban drainage was planned. This attracted the interest of a large property company wishing to partner up to develop a section of the stream currently culverted below one of their residential areas. However, according to the municipal respondent, that section of the stream could not be prioritized because the municipal expansion plans required other sections to be addressed first:

> "That plan [to open up the stream] affected areas that we [the municipality] wanted to develop. That meant we couldn't make investments elsewhere. So, the new development of housing came first".

This demonstrates a challenge related to organizational strategies, suggesting that overall municipal development plans can override opportunities to collaborate with property owners when making decisions on large-scale investments for climate-robust stormwater

management. Similar reasoning was evident in other interviews, indicating that municipal development plans significantly impact where and how investments in these actions can be implemented, thereby affecting the opportunity to collaborate with property owners.

Third, both municipal and property company respondents discussed several challenges related to funding, noting that current financial arrangements for enabling climate-robust stormwater management constrain new collaboration practices. However, financial issues were less frequently mentioned compared to legal and organizational challenges. From the municipal perspective, respondents linked funding constraints to the section in the Local Government Act previously described, where municipal respondents were hesitant and often refrained from financing actions that risked being seen as financially benefiting individual property owners. Additionally, there are currently no accepted mechanisms for public–private co-funding that allow for cost-sharing. Related to this, property company respondents provided examples where joint financing of actions was constrained by the need for all neighbouring or affected property owners to voluntarily agree to the financial arrangement. They argued that if one property owner refuses to finance the actions, the entire project is jeopardized, as outlined below:

> "Precisely for these parts, when there are several actors who need to come together and do something, it is enough that one private property owner next door does not intend to spend any money on actions on his side. Then we sit there. Should we then bear the entire cost for it [implementing the actions] to work? You might get permission to dig on their land, but they don't intend to contribute with any money".

According to these respondents, the lack of financial incentives is a significant reason why many property owners choose not to implement climate-robust urban stormwater management actions. Since actions in the outdoor environment do not lead to rent increases, such actions are difficult to motivate from a financial perspective:

> "The outdoor environment does not increase the rent either, so it is a pure cost. So, then you don't do it unless you just have to".

There are also several suggestions of how new collaborative practices can be stimulated in the interviews.

4.2. Stimulating New Collaborative Practices

Both municipal and property company staff discussed the evolving roles and requirements to enhance new collaborative practices that enable implementation of climate-robust stormwater management in urban built environments.

First, predominantly municipal respondents emphasized that the current legal requirements, as a key element of the formal institutional setting, needed to be clarified. They pointed to the possibility of interpreting the principle of equal treatment less restrictively by considering that adaptation actions provide important public benefits, including a climate-robust stormwater system. Referring to the "special reasons" specified in the Local Government Act, these respondents argued that municipalities should be allowed to fund adaptation actions that provide public benefits, and should test this principle based on such motives. Additionally, they argued that adaptation could be motivated by other explicit local tasks and goals:

> "The municipality have a role to ensure human life and health, rescue service accessibility and other key values. We have to secure critical societal functions. We also have the task to climate-proof our city, mandated by our local government. But we cannot take measures that only benefit private property owners".

This means that in areas with critical societal functions such as infrastructure, rescue service, hospitals, schools, and elderly care, the municipalities still see it as their responsibility to fund solutions. This would require both intersectoral coordination within city administrations and in relation to both municipally owned and private business:

> "If there are mutual interests and you can cooperate where all parties contribute reasonably then it would be very inhibiting if we couldn't go ahead. Local place-specific initiatives with property owners related to safe communities and refitting public areas is encouraged and there we haven't been restricted by the Local Government Act".

However, in vulnerable locations without public co-benefits, it would arguably be difficult to legitimize investments. However, local principles for distribution of responsibilities need to be established and enacted to create reasonable expectations:

> "We need to work with expectations about what you could achieve as well as the municipality's mandates and responsibilities".

Second, appointing designated municipal coordinators for sustainable stormwater and flood risk management in existing urban built environments was highlighted. Property company respondents emphasized that the absence of a clear contact-point created significant challenges for collaboration:

> "We don't really know who in the municipality we should contact, because it is not entirely clear who is responsible for coordinating efforts related to floods and stormwater management in existing areas".

Both municipal and property company respondents concurred that municipalities should take on the role of informers, proactively educating property owners and the general public about flood risks, water pollution, and potential actions. During the workshop discussions, property company respondents noted that while most municipalities had not yet embraced this role, some had made significant progress in providing information and fostering dialogue. One municipality was recognized as a forerunner due to its targeted communication efforts with property owners:

> "I think they are doing very well, the role they have taken, to inform property owners /…/ and to understand what the problem could be. We have had two meetings and will have a third next year to inform those who are interested /…/ So above all, providing information to property owners is good".

Property company respondents argued that municipalities should not only inform people about flood risks, but also about municipal actions to make stormwater management more climate-robust and what actions property owners could undertake. Such information could incentivize property owners to actively seek collaboration. For example, both municipal and property owner respondents recognized the opportunity created by informing property owners in advance about the development of a central park. This led to a collaborative, jointly financed project initiated by the property company, where part of the park was lowered to enhance stormwater drainage capacity.

Reflecting on this example, property company respondents suggested that municipalities would be more legitimate coordinators of the actors involved in making urban stormwater management more climate-robust than other societal actors. Some municipal respondents also saw an opportunity to have a key role in coordinating the adaptation of the built environment. This links well with ongoing policy-recommendations that suggest clarifying that municipalities either can, or in some suggestions should, take on a coordinating role for climate adaptation of the built environment [11,12,48]. Given the highly fragmented pattern of property ownership in urban areas, gathering property owners to

inform and discuss their intentions and actions could create opportunities for collaboration by making other activities more visible and identifying common interests. A property company respondent stated the following:

> "The municipality has the platform to gather us. Perhaps not to dictate what we should do, but to bring all interested parties together and be a collaboration platform provider".

However, when considering this potential new role, municipal respondents struggled to outline what it would practically entail and how actively they should engage with property owners. Shouldering a coordinating role was viewed as unfamiliar and not fully aligned with the current municipal mandate. As long as this role is not properly defined and established, it is burdened with unrealistic expectations. Municipal respondents also observed that while many property owners expect municipalities to initiate collaboration for climate-robust stormwater management in areas of common interest, others simply wanted closer dialogue. Currently, municipalities grapple with determining their role:

> "There is a clear interest and desire from property owners to have more dialogue and cooperation with the municipality, but I think we are fumbling a bit in terms of responsibility and how far and deep the municipality should go. I think in and of itself, the municipality has an important role regardless. Even if it is not the responsibility of the municipality [to implement the measures], you can have a role as facilitator or dialogue partner".

Municipal respondents primarily see a promotional role in communicating flood risks and current distribution of responsibilities to property owners. They currently expressed concerns about whether and to what extent they should actively approach property owners to initiate collaboration for climate-robust stormwater management. Property owner respondents, on their part, experience this lack of outreach alongside a desire for more dialogue.

Municipal respondents described their current collaborative approach as reactive, adapting a municipal property only if the adjacent property owner expressed an intention to reduce flood risk and if this coincided with municipally planned actions:

> "We can't take the initiative to run around and look for all the property owners who are at risk of being flooded to collaborate, but that's where they have to push . . . if we see that we can lower this bike path when we build here, or lower this park, then we'll try to do it while we're there anyway. Maybe we wouldn't go out and do these things if someone didn't push us to help each other out".

Thus, the above highlights the importance of further clarifications of public–private roles in climate-robust stormwater management.

Third, as part of built environment coordination, respondents identified the need to establish a collaborative platform. To facilitate effective collaboration, respondents emphasized the need for the long-term development strategies of both the municipality and large property owners in the municipality to be more synchronized, particularly in terms of timing. Property company respondents explained that they undertake major renovations in one city district at a time, following a cyclical pattern. They noted that it is unfortunate when municipal actors initiate stormwater actions in a city district that has recently been renovated. All parties would benefit significantly by coordinating actions to coincide with major reconstruction efforts. Establishing a local group or committee where representatives from various municipal departments and property owners could provide valuable insights into each other's organizations was suggested. This group should be long-term and meet regularly to build trust and discuss how to make urban stormwater

management climate-robust. In one medium-sized municipality, a practical example was highlighted in the form of a cross-sectoral working group on climate adaptation, which had been operating for about eight years. This group was described as building trust, understanding, and common knowledge. According to property company representatives, the group facilitated municipality–property owner collaboration on climate-robust stormwater management in various parts of the urban built environment by synchronizing municipality and property company organizational timing. Municipal representatives from a small municipality also emphasized the importance of building trust over time to create a collaborative environment:

> "Sometimes they [property developers] call us beforehand and say 'we were thinking of building here. How should we think?' They have confidence in us and have seen us take action with a good outcome and that we don't want to rob them of their money but are here to build a good society. We haven't had that much turnover among the property companies, and we have built relationships. Therefore, they are accommodating. They see value in it".

Respondents also discussed how the conditions for collaboration differed depending on the scale of the actions, including whether they targeted an individual building or an entire city district. Property company respondents argued that focusing the municipality–property owner collaboration on a city district level, rather than on specific properties, would greatly facilitate collaboration that leads to effective end-results:

> "In the long run, it may be that we need to take an area focus, and create a basis that can be used by everyone who is there. It may very well be that there are many people who must cooperate because it may be about, for example, the water utility's pipes. Or it could be that we take actions on a site that the next site will cause problems. Greater collaboration between all these actors will probably be required. If you look at an entire city district, it may be that you discover that here we have a green space that is not really being used, can we make something good out of it".

For this to work, property company respondents emphasized the importance of long-term collaborative platforms that facilitate the involvement of more actors in making urban stormwater management more climate robust. Respondents highlighted that involved actors should jointly establish a common vision for the district, which they believe would further facilitate collaboration during implementation:

> "I think a good framework for such collaboration [between municipality and property owner] can be city district development... It will be a small starting distance, but this is not something we will do tomorrow, it is a long-term effort, and you must start early to jointly think about the long-term. It starts with us sitting down and start talking. Here everything starts to create a common vision for a city district. Then you have to ensure to solve problems one after the other".

There are several procedural elements that need to be clarified for such a platform to become legitimate, operational, and effective. These include questions of representation, mandates, rules for engagement and acceptance/agreements, especially given the likelihood of free-riding and unwillingness to participate. For municipalities, it is also important to have broad political unity around building long-term collaborations with property owners in specific geographical areas, as this commits the municipality to take action in these places. Where the political views diverge, there is a risk that collaboration processes will be broken, or lose legitimacy as new political priorities emerge.

This brings us to the fourth and final requirement: the need to clarify financial principles and cost-sharing arrangements. Establishing funding principles, as suggested by a

municipal respondent, would involve developing principles to assess the extent to which municipal investments in climate-robust stormwater actions benefit the public. These principles would support claims that benefits such as "more efficient water management", "more robust stormwater systems", and "learning about climate adaptation actions" outweigh the risk of financially benefiting individual property owners. This also relates to the need to clarify parallel municipal tasks and goals, such as the mandate to protect residents from floods, as determined by municipal politicians. Referring to such goals could potentially enable the municipality to finance actions in areas deemed important to protect, thus mitigating the constraints often encountered with the Local Government Act:

> "[using the principles] we can justify that we need to do this [measures] to learn, and we can lean on the decided principles".

Municipal respondents highlighted the importance of developing financial arrangements for cost-sharing, as property owners need to contribute to funding actions from which they financially benefit. Interviews indicated that municipalities have currently handled joint financing between, for example, the municipality and the water utility, and in some cases also with property owners, on a "case-by-case" basis. Here, guidance and mechanisms from the national government-set formal terms for cost distribution and the design of agreements for joint financing were requested. These were seen as crucial for incentivizing and scaling-up collaboration for climate-robust stormwater management.

To enhance the financial incentive for property owners, property owner respondents suggested that the municipality or region should establish a financing fund. Property owners could then apply for funding to implement actions, with the permission of the neighbouring properties and the municipality. This links to national suggestions of joint co-funding mechanisms between public actors like municipalities and regions and private actors like trade associations and insurance companies [11]. There are currently several investment mechanisms supporting climate mitigation initiatives in Sweden, such as The Climate Leap (In Swedish: Klimatklivet) or regional funds for emission reductions that could serve as inspiration for such initiatives. Other property company respondents found it less problematic to secure internal funds for actions aimed at climate-robust stormwater management. Requesting funds was seen by these respondents as straightforward for actions co-financed by the municipality, indicating good conditions for collaboration, as this would both increase property value and reduce risks for costly flood damages. This is exemplified by the following two quotes:

> "We are happy to help and even finance to secure our property values, right, and that usually makes things easier".

> "I think you have to be prepared to spend some money to meet each other. I have an example where the municipality does a great deal of work to take care of its stormwater in a park, but above all from nearby residential areas that belong to us and then we may also have to help finance it. It is then important to have a discussion about what is a reasonable level? We get rid of our stormwater, but they get to deal with it on their land. There is no established basis to calculate that, but you have to discuss it".

Statements from both municipal and property company respondents thus demonstrate a willingness to develop arrangements for co-financing actions for climate-robust stormwater management. However, there are currently relatively few examples of such arrangements, indicating a need for further development in the future to strengthen the overarching formal institutional settings.

5. Discussion and Conclusions

This study shows the numerous visions and experiences of the actors studied, which are important to consider for strengthening the conditions for municipality–property owner collaboration in climate-robust stormwater management. Below, the main results are compared with previous research findings related to the two research questions.

5.1. What Challenges Do Municipalities and Property Owners Face When Collaborating on Climate-Robust Stormwater Management?

The results of this study reinforce previous conclusions that ambiguous and sometimes non-existent legislation surrounding climate-robust urban stormwater management obstructs private–public collaboration [3,18,37]. This study shows that this issue also affects collaboration between property owners and municipalities in Sweden, as current legislation creates uncertainties about legal interpretations, such as what municipalities are allowed to finance without violating the equal treatment principle in the Local Government Act. This uncertainty about legal boundaries makes municipal officials hesitant to initiate collaboration with property owners. Interestingly, the study indicates that municipalities are more cautious about the equal treatment principle in relation to funding stormwater measures than funding neighbourhood security measures, which also risks affecting property values. A recent assessment of legal conditions for urban built environment adaptation suggests that interpretive space in the Local Government Act is greater than often assumed [49]. However, further investigation is needed to understand the issue of equal treatment.

Additionally, climate-robust stormwater management forces municipalities into uncharted territory between traditional stormwater and flood risk management, areas they are not accustomed to and where municipalities and water utilities still struggle to find the intersection between their responsibilities [26]. In such a situation, engaging in collaboration processes with property owners would likely expose knowledge gaps and ambiguities, breaking municipal traditions of cooperating with private actors, often built on stability, clarity, and predictability [13,14].

Moreover, organizational differences were found to obstruct collaboration [9,24,26]. This includes differing organizational agendas, budgeting principles, and timelines between municipal departments and water utilities, hindering public actor collaborations on a structural level. These differences also appear to exist between municipalities and property companies, where inflexible municipal plans and slow decision-making processes were seen to hinder collaborative opportunities. However, this must be seen in light of expectations that municipalities should lead such collaborations also in an area where they lack formal responsibility and rather feel limited in their capacity to act. This likely makes it easier to point out municipal shortcomings.

5.2. How Can New Collaborative Practices Between Municipalities and Property Owners Be Stimulated to Co-Create Climate-Robust Stormwater Management Measures in Built Environments?

To pave the way for new collaborative practices, respondents stressed the need for government clarifications on how central legislation should be interpreted, and possibly changes in the legislation. Some respondents also stressed that municipalities could start testing the legislative limits by initiating collaboration and funding or co-funding measures that provide social benefits like protecting vulnerable groups and critical societal infrastructure, even if they also benefit individual property owners. Another idea was to establish a general municipal principle of co-financing measures with property owners where it is practical and economically justifiable in order to circumvent the principle of equal treatment. However, municipalities were also very cautious about taking on a responsibility that could potentially extend to all areas in the municipality.

To improve collaborative conditions, the study also highlights the need for local actions, such as assigning designated municipal collaboration coordinators for adaptation in urban built environments, establishing long-term collaborative platforms, and clarifying financial principles and cost-sharing arrangements. Property company respondents emphasized the benefit of a municipal coordinator of adaptation actions in built urban environments, which they believed could lower the barrier to seeking municipal collaborations [24,50]. This also involves exchanging information between concerned parties, such as updates on upcoming stormwater and flood measures [37], which property owners saw as important for showcasing possible opportunities for collaboration. While municipal officials were generally open to taking such a role, they felt unaccustomed to it, and currently lacked the mandate, and feared that it would create unrealistic expectations of ensuring built environment adaptation. Therefore, it is crucial to clearly define what this coordinating role would entail and the distribution of responsibilities and roles, including who will lead, initiate and drive collaborative projects in various settings and place-specific circumstances, with different degrees of public and private interests at stake.

The study also highlights the need to establish a long-term collaboration platform between key actors operating in the built environment realm [7]. To improve collaboration conditions, respondents saw the need for better synchronizing long-term development strategies, and increasing transparency in their operations. A successful example mentioned is a public–private working group for climate adaptation in one of the municipalities studied, which is seen as key to building trust, increase cross-organizational transparency and fostering a collaborative environment [18].

Additionally, the study underscores the need to clarify financial principles and cost-sharing mechanisms to enhance municipality–property owner collaboration. Respondents stressed the importance of designing agreements for joint financing of measures with mutual interests, which arguably can strengthen formal institutional settings, as well as incentivizing and scaling-up collaborative stormwater management practices. This involves developing principles for co-financing and maintaining measures that benefit both public and private interests, whether located on private or public land. This would preferably also entail the development of template agreements for co-financing measures between municipalities and property owners.

Such co-financing principles are important in Sweden for at least two reasons: First, since water services must be priced according to the principle of cost-recovery, water utilities can only finance measures intended to meet their capacity requirements, or to protect the stormwater infrastructure from damage, using water tariffs (including stormwater fees, which many Swedish municipalities use). Thus, water utilities cannot increase fees to pay for measures that can handle extreme rainfall without co-financing from tax funds or private actors covering the cost of other benefits. Moreover, due to the same principle, stormwater fees are generally so low in Sweden that they do not create much incentive for property owners to implement their own measures in built urban environments, similar as found for other countries [51]. Hence, to increase property owners' incentives to implement stormwater measures, the principle of cost-recovery in the Swedish Water Services Act probably needs to be reviewed or practiced differently. This is likely to be among the many changes needed as additional areas of significant flood risk have been identified through Sweden's work with the EU Floods Directive (2007/60/EC) and the stricter requirements for stormwater treatment presented in the updates to the EU Urban Wastewater Treatment Directive (2024/3019) is transposed into Swedish legislation. Although it is still too early to speculate how these and other likely changes in the national policy landscape may affect the conditions for collaboration between municipalities and property owners, it appears highly likely that an even greater focus will be on blue-green infrastructure and nature-based

solutions in the coming years, necessitating apt legislation. Second, and similarly, tax funds can only cover costs for measures that benefit common interests, meaning that individual actors need to pay for the benefits that only they receive, as discussed above.

In conclusion, the study showcases the need for both municipalities and property owners to increase their capacity to act within the urban built environment, suggesting that new collaborative practices are established. Creating favorable collaborative conditions requires changes in formal institutional frameworks, including nationally decided clarifications regarding roles, responsibilities, legal issues, and financing opportunities. It also requires changes in local organizational structures, and transforming informal collaboration patterns, norms, and traditions. Finally, actors need to build experiences of acting differently and learn from these experiences to gradually institutionalize a new collaborative landscape that facilitates climate-robust stormwater management and urban built environment adaptation.

This study should be seen as an initial temperature measurement of limitations and requirements to strengthen collaboration between municipalities and property owners in the development of climate-robust stormwater systems. The study is limited to a relatively small sample of prominent municipalities and property owners by Swedish standards in order to find actors with experience of such collaborative processes. This type of collaborative process is therefore probably more advanced in the studied municipalities than in Swedish municipalities in general. The study has also focused on collaboration within existing built environments, which differs from the more institutionalized collaboration processes that exist within new construction. Our understanding could be strengthened with, for example, survey studies to confirm and/or refute the study's conclusions, and with studies in and comparisons between other countries. As several of the barriers identified arise from the current Swedish policy landscape, they probably do not play out in exactly the same way in other countries.

Author Contributions: Conceptualization, E.G., S.S. and M.H.; methodology, E.G., S.S. and M.H.; investigation, E.G., S.S. and M.H.; formal analysis, E.G. and S.S.; writing—original draft preparation, E.G., writing—review and editing, E.G., S.S. and M.H.; funding acquisition, E.G., S.S. and M.H. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Länsförsäkringsbolagens Forskningsstiftelse, under grant number P1.19, and Vinnova, under grant numbers 2021-01603 and 2023-02734.

Data Availability Statement: The anonymized data supporting the conclusions of this article will be made available by the corresponding author on request.

Acknowledgments: The authors wish to thank Hanna Jansson for conducting two of the interviews and collecting articles on collaboration for sustainable stormwater management and climate adaptation, as well as the two anonymous reviewers for their valuable comments.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Dhakal, K.P.; Chevalier, L.R. Managing urban stormwater for urban sustainability: Barriers and policy solutions for green infrastructure application. *J. Clean. Prod.* **2017**, *196*, 943–952. [CrossRef]
2. Dodman, D.; Hayward, B.; Pelling, M.; Castan Broto, C.; Chow, W.; Chu, E.; Dawson, R.; Khirfan, L.; McPhearson, T.; Prakash, A.; et al. Cities, Settlements and Key Infrastructure. In *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*; Cambridge University Press: Cambridge, UK; New York, NY, USA, 2007; pp. 907–1040.
3. Geyler, S.; Bedtke, N.; Gawel, E. Sustainable stormwater management in existing settlements: Municipal strategies and current governance trends in Germany. *Sustainability* **2019**, *11*, 5510. [CrossRef]

4. Hansen, R.; Stahl Olafsson, A.; Van der Jagt, A.; Rall, E.; Pauleit, S. Planning multifunctional green infrastructure for compact cities: What is the state of practice? *Ecol. Indic.* **2019**, *96*, 99–110. [CrossRef]
5. Storbjörk, S.; Hjerpe, M.; Glaas, E. The necessity of pragmatic muddling. Ten Swedish early adopter cities navigating climate adaptation policy-implementation in the urban built environment. *Environ. Sci. Pol.* **2024**, *160*, 103842. [CrossRef]
6. Gimenez-Maranges, M.; Breuste, J.; Hof, A. Sustainable Drainage Systems for transitioning to sustainable urban flood management in the European Union: A review. *J. Clean. Prod.* **2020**, *255*, 120191. [CrossRef]
7. Trell, E.M.; van Geet, M.T. The governance of local urban climate adaptation: Towards participation, collaboration and shared responsibilities. *Plan. Theory Pract.* **2019**, *20*, 376–394.
8. Gimenez-Maranges, M.; Pappalardo, V.; La Rosa, D.; Breuste, J.; Hof, A. The transition to adaptive storm-water management: Learning from existing experiences in Italy and Southern France. *Sustain. Cities Soc.* **2020**, *55*, 102061. [CrossRef]
9. Bohman, A.; Glaas, E.; Karlson, M. Integrating Sustainable Stormwater Management in Urban Planning: Ways Forward towards Institutional Change and Collaborative Action. *Water* **2020**, *12*, 203. [CrossRef]
10. Glaas, E.; Bohman, A.; Karlson, M.; Navarra, C.; Olsson, J.; Hundecha, Y.; Opach, T.; Cederlund, D.; Sjulander, J.; Neset, T.S.; et al. Development and user testing of the ICT-platform Visual Water supporting sustainable municipal stormwater planning. *Urban Water J.* **2022**, *19*, 962–974. [CrossRef]
11. Swedish Adaptation Expert Council. *Första Rapporten från Nationella Expertrådet för Klimatanpassning (First Report from the Swedish Expert Council on Climate Adaptation, in Swedish)*; Swedish Adaptation Expert Council: Stockholm, Sweden, 2022.
12. Riksrevisionen. *Statens Insatser för Klimatanpassning av den Byggda Miljön. (Government Actions to Adapt the Build Environment to Climate Change), Report NR. 2022:29*; Riksrevisionen: Stockholm, Sweden, 2022.
13. Hedensted Lund, D. Governance innovations for climate change adaptation in urban Denmark. *J. Environ. Pol. Plan.* **2018**, *20*, 632–644.
14. Storbjörk, S.; Hjerpe, M.; Glaas, E. Using public–private interplay to climate-proof urban planning? Critical lessons from developing a new housing district in Karlstad, Sweden. *J. Environ. Plan. Manag.* **2018**, *62*, 568–585. [CrossRef]
15. Storbjörk, S.; Hjerpe, M.; Glaas, E. "Take it or leave it": From collaborative to regulative developer dialogues in six Swedish municipalities aiming to climate-proof urban planning. *Sustainability* **2019**, *11*, 6739. [CrossRef]
16. Dillenardt, L.; Hudson, P.; Thieken, A.H. Urban pluvial flood adaptation: Results of a household survey across four German municipalities. *J. Flood Risk Manag.* **2022**, *15*, e12748. [CrossRef]
17. Begg, C. Power, responsibility and justice: A review of local stakeholder participation in European flood risk management. *Local Environ.* **2017**, *23*, 383–397. [CrossRef]
18. Mehring, P.; Geoghegan, H.; Cloke, H.L.; Clark, J.M. What is going wrong with community engagement? How flood communities and flood authorities construct engagement and partnership working. *Environ. Sci. Pol.* **2018**, *89*, 109–115. [CrossRef]
19. Qiao, X.J.; Kristoffersson, A.; Randrup, T.B. Challenges to implementing urban sustainable stormwater management from a governance perspective: A literature review. *J. Clean. Prod.* **2018**, *196*, 943–952. [CrossRef]
20. Sörensen, J.; Persson, A.; Sternudd, C.; Aspegren, H.; Nilsson, J.; Nordström, J.; Jönsson, K.; Mottaghi, M.; Becker, P.; Pilesjö, P.; et al. Re-thinking urban flood management: Time for a regime shift. *Water* **2016**, *8*, 332. [CrossRef]
21. Novaes, C.A.F.O.; Marques, R.C. Regulation of urban stormwater management is not a matter of choice, but performance. *Water Policy* **2022**, *24*, 1325–1342. [CrossRef]
22. European Commission. *Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 Establishing a Framework for Community Action in the Field of Water Policy*; European Commission: Brussels, Belgium, 2000.
23. European Commission. *Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the Assessment and Management of Flood Risks*; European Commission: Brussels, Belgium, 2007.
24. Wihlborg, M.; Sörensen, J.; Alkan Olsson, J. Assessment of barriers and drivers for implementation of blue-green solutions in Swedish municipalities. *J. Environ. Manag.* **2019**, *233*, 706–718. [CrossRef]
25. Brown, R. Impediments to integrated urban stormwater management: The need for institutional reform. *Environ. Manag.* **2005**, *36*, 455–468. [CrossRef]
26. Becker, P. Tightly coupled policies and loosely coupled networks in the governing of flood risk mitigation in municipal administrations. *Ecol. Soc.* **2021**, *26*, 34.
27. Hjerpe, M.; Glaas, E.; Storbjörk, S. The patronization of pluvial flood risk and adaptation among tenant-owned housing associations in Sweden. *Buildings* **2025**, *15*, 300. [CrossRef]
28. Glaas, E.; Hjerpe, M.; Storbjörk, S. The 2021 extreme rainfall in Gävle, Sweden: Impacts on municipal welfare services and actions towards more resilient premises and operations. *Hydrol. Res.* **2024**, *55*, 431–443.
29. Wilfong, M.; Paolisso, M.; Patra, D.; Pavao-Zuckerman, M.; Leisnham, P.T. Shifting paradigms in stormwater management—Hydrosocial relations and stormwater hydrocitizenship. *J. Environ. Policy Plan.* **2023**, *25*, 429–442. [CrossRef]
30. Swedish Government. *Public Water Services Act. Lag (2006:412) om Allmänna Vattentjänster*; Swedish Government: Stockholm, Sweden, 2006.

31. Swedish Government. *The Swedish Local Government Act. Kommunallag (2017:725)*; Swedish Government: Stockholm, Sweden, 2017.
32. Swedish Government. *The Swedish Planning and Building Act. Plan-Och Bygglagen (2010:900)*; Swedish Government: Stockholm, Sweden, 2017.
33. Dai, L.; Wörner, R.; van Rijswick, H.F.M.W. Rainproof cities in the Netherlands: Approaches in Dutch water governance to climate-adaptive urban planning. *Int. J. Water Resour. Dev.* **2018**, *34*, 652–674.
34. Grahn, T.; Jaldell, H. Households (un)willingness to perform private flood risk reduction—Results from a Swedish survey. *Saf. Sci.* **2019**, *116*, 127–136.
35. Davids, P.; Thaler, T. Flood-resilient communities: How we can encourage adaptive behaviour through smart tools in public–private interaction. *Urban Plan.* **2021**, *6*, 272–282.
36. Harmawan, B.N.; Ilman, G.M.; Pertiwi, V.I.; Bataha, K. Research trends of collaborative governance in climate change: A bibliometric analysis. *Glob. Knowl. Mem. Commun.* **2024**, 2514–9342. [CrossRef]
37. Khoshkar, S.; Balfors, B.; Wärnbäck, A. Planning for green qualities in the densification of suburban Stockholm—Opportunities and challenges. *J. Environ. Plan. Manag.* **2018**, *61*, 2613–2635.
38. Svenskt Vatten. *Avledning av Dag-, Drän-, Och Spillvatten. Funktionskrav, Hydraulisk Dimensionering och Utformning av Allmänna Avloppsystem (Discharging Storm-, Drainage-, and Waterwater. Functional Requirements, Hydraulic Dimensioning and Design of Public Wastewater Systems)*; Publication P110; Svenskt Vatten: Stockholm, Sweden, 2016.
39. Swedish Government. *Nationell Strategi för Klimatanpassning (National Climate Adaptation Strategy, in Swedish)*; Government Bill 2017/18:163; Swedish Government: Stockholm, Sweden, 2018.
40. Swedish Government. *Nationell Strategi och Regeringens Handlingsplan för Klimatanpassning (National Strategy and the Government's Plan of Action for Climate Adaptation)*; Skr 2023/24:97; Swedish Government: Stockholm, Sweden, 2024.
41. Swedish Government. *Vem Har Ansvaret? (Who Is Responsible?)*; Swedish Government Public Report 2017:42; Elanders Sverige AB: Stockholm, Sweden, 2017.
42. Smedby, N.; Neij, L. Experiences in urban governance for sustainability: The constructive dialogue in Swedish municipalities. *J. Clean. Prod.* **2013**, *50*, 148–158.
43. IVL. *Klimatanpassning 2023. Så Långt Har Sveriges Kommuner Kommit (Climate Adaptation 2023. This Is How Far Swedish Municipalities Have Come)*; IVL Rapport C765; IVL: Stockholm, Sweden, 2023.
44. Naturvårdsverket. *Naturbaserade Lösningar—Ett Verktyg för Klimatanpassning och Andra Samhällsutmaningar (Nature-Based Solutions—A Tool for Climate Adaptation and Other Urban Challenges)*; Report 7016; Naturvårdsverket: Stockholm, Sweden, 2021.
45. Ørngreen, R.; Levinsen, K. Workshops as a research methodology. *Electron. J. e-Learn.* **2017**, *15*, 70–81.
46. Braun, V.; Clarke, V. Using thematic analysis in psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [CrossRef]
47. Baxter, J.; Eyles, J. Evaluating qualitative research in Social Geography: Establishing 'rigour' in interview analysis. *Transact. Inst. Brit. Geogr.* **1997**, *22*, 505–525. [CrossRef]
48. Swedish Association of Local Authorities and Regions. *Ställningstagande—Effektiv Och Ledande Lokal Klimatpolitik (Position Statement—Effective and Leading Local Climate Politics)*; SKR2023/02375; Swedish Association of Local Authorities and Regions: Stockholm, Sweden, 2024.
49. Delphi. *Klimatanpassning—Utredning av Hinder i Lagstiftningen (Climate Adaptation—Investigation of Legal Barriers)*; Delphi: Linköping, Sweden, 2024.
50. Glaas, E.; Hjerpe, M.; Wihlborg, E.; Storbjörk, S. Disentangling municipal capacities for citizen participation in transformative climate adaptation. *Environ. Policy Gov.* **2022**, *32*, 179–191. [CrossRef]
51. Tasca, F.A.; Assunção, L.B.; Finotti, A.R. International experiences in stormwater fee. *Water Sci. Technol.* **2018**, *2017*, 287–299. [CrossRef]