



BI Norwegian Business School - campus Oslo

GRA 19502

Master Thesis

Component of continuous assessment: Thesis Master of Science

Falling Between The Silos: Fragmentation in Roles and Responsibilities Create Barriers to Climate Adaptation

- A Case Study of Stormwater Management in the Municipality of Oslo

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Start: 02.03.2018 09.00

Finish: 03.09.2018 12.00

Master Thesis

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A Case Study of Stormwater Management in the Municipality of Oslo

Date of Submission:
06.07.2018

Programme:
Master of Science in Business Major Strategy

Supervisor:
Ragnhild Kvålshaugen

“This thesis is a part of the MSc programme at BI Norwegian Business School. The school takes no responsibility for the methods used, results found and conclusions drawn.”

ACKNOWLEDGMENTS

First and foremost, we would like to thank the people who have contributed to the making of this thesis. Our supervisor Ragnhild Kvålshaugen has always been eager to provide us with valuable guidance, even in spite of being located on a separate continent. Ragnhild also introduced us to the interdisciplinary research project Klima 2050, giving us access to further forums for discussion. We would like to thank the Municipality of Oslo, with special regards to Julia Kvitsjøen, PhD Candidate in the Agency for Water and Wastewater Services. Julia leads the interdisciplinary student group working on project Torshovdalen. Participating in this group has given us a lot of knowledge on the field of stormwater management, that we would otherwise have been incapable of obtaining. We would also direct a special thank you to all the interviewees of our thesis, for being so open and dedicated to sharing insight into stormwater management in the municipality.

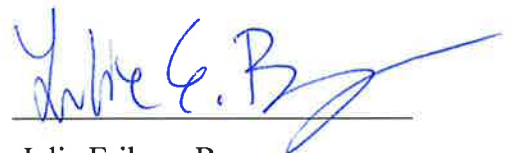
Last, but not least, we would like to express our gratitude towards the process of which we have both endured; it has been challenging and rewarding, and we would not have been able to produce such an extensive thesis without the motivation, dedication and extraordinary friendship between ourselves. We are sincerely proud of our final product.

Enjoy, we hope you find it interesting!

Oslo, July 6th 2018



Anniken Salvesen



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ABSTRACT

The aim of this master thesis is to contribute to the literature on institutional change for climate adaptation by investigating the identified gap in literature of how, why, and where changes need to happen for more sustainable adaptation. We conducted a qualitative research with an empirical case study of interdepartmental collaborations on stormwater management in the Municipality of Oslo, interviewing 14 participants from four different agencies within the municipality. Our findings presented us with a set of barriers to institutional change, and through systematic analysis and conceptualization of the challenges and opportunities present in the Municipality of Oslo, we propose the following:

The Municipality of Oslo has managed to build awareness of stormwater challenges in certain environments of the organization, but in order to align problems with available solutions and political acceptance, institutional entrepreneurs in the organization must influence change. Top managers must coordinate expectations, rules, and roles in their departments, and demolish the silo mentality that is currently prevailing in the organization. Dedicated, operational employees need incentives to avoid old, self-serving logics in order to implement new, collaborative practices and spread awareness and sense of responsibility internally and externally. If they manage to continuously build knowledge and managerial abilities and formalize networks, they can achieve legitimacy that lead to intentional change.

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INTRODUCTION

Intergovernmental Panel on Climate Change reported, with more than 95 percent certainty, that human impact has contributed to more than half of temperature changes since 1951 (State of the Environment Norway, 2017). In Norway, as of 2016, it rains 20 percent more than it did 100 years ago, and extreme weather and heavy rainfall will only continue to increase (Time, 2017). In a report conducted by the Norwegian Government Security and Service Organization, it is published that the frequency for rainfall intensity/durability has increased by a fivefold, stating that in hundred years, what is today considered an episode of intense rainfall with a frequency of 50 years will then be frequenting every ten years (NOU 2015:16, 2015). Moisture is the cause of about 75 percent of damage to buildings, and Finance Norway report that in the last three years, an annual average of NOK 2.1 billion is being paid out in insurances due to natural damages, stormwater and setbacks (Time, 2017; Bartnes et al., 2017).

In addition to the challenge of higher frequency for heavy rainfall is the higher density of population and densification of buildings in cities. More than half of the world's population live in urban areas, and according to United Nations (2018) this number is expected to grow to 68 percent, meaning more than $\frac{2}{3}$ of the world's population, by the year of 2050. This growth leads to more dense building strategies in cities to make space for more people and activities within areas that are already developed (Tekna, 2016). Densely built areas have usually less permeable surfaces, such as grass and smaller plants, that function as a collector of water. The high density of population and buildings serve as a threat of vulnerability to the cities' infrastructure and societal functions. In contrast to managing floods in rivers, stormwater management require a perspective on how new construction affect downstreams. What makes stormwater management distinct is thus that the smaller catchments are more prominent in urban areas because of high density of buildings (NOU, 2015:16, 2015).

Copenhagen, Denmark was subject to an event of extreme rainfall in 2011. In two hours, approximately 150 millimeters of rainfall occurred, and the total amount of damage was estimated at approximately 10 billion NOK (VAV, 2017). The costs of implementation of responsive measures in the aftermath exceeds 11 billion NOK,

and Denmark is now considered to be the Nordic country with the greatest development of obtaining and publicly announcing information and guidance on physical actions for local stormwater management (Norwegian Environment Agency, 2015). According to the The Norwegian Directorate for Civil Protection (DSB, 2016), in one of the 20 cities surrounding the Oslofjord and Skagerrak there exist a 100 percent probability of extreme rainfall within the next 50 years.

Literature on stormwater management is in consensus; transformative change is required in order to address the current and future uncertainties and complexities of climate change, as urban water management measures of today is unsatisfactory (Ashley et al., 2003; Milly et al., 2008; Newman, 2001; Pahl-Wostl, 2008; Wolff & Gleick, 2002; Wong & Brown, 2009). However, previous literature has found institutional change to be challenging, due to the problem of embedded agency (Lawrence, Suddaby & Leca, 2009). Actors can be prevented from implementing institutional change because they are too deeply driven by the existing institutionalized routines, norms and understandings they wish to change (Holm, 1995). Researchers explain that meaning and content of institutions can be understood through the investigation of institutional logics (Thornton, Ocasio & Lounsbury, 2015). Institutional logics are unlikely to be followed in a uniform manner across organizations, and co-existing logics are thus creating barriers that are often resolved through competition (Hoffman, 1999).

Brown and Farrelly (2009) have identified indications from literature that institutional barriers are to a large degree responsible for the slow pace of change, and the lack of comprehension of the overall scope and inter-relatedness between the barriers further contribute to the lack of climate adaptation. The action of changing institutional logics have been argued to happen through the work of institutional entrepreneurs (Lawrence & Suddaby, 2006). Institutional entrepreneurs are considered as those actors who entails the ability and/or the willingness to create new institutional logics while changing the old ones (DiMaggio, 1988; Lawrence, 1999).

Biesbroek, Termeer, Klostermann and Kabat (2014) suggest a gap in literature on institutional barriers and how to overcome them, with regards to more conceptual clarification and precise definition of barriers to climate adaptation. Building on

this, we wish to explore the how, why, and where institutional changes for a more sustainable practice of climate adaptation must occur in an organization, which leads us to our research question;

What interdepartmental collaboration strategies in municipalities are required to overcome institutional barriers for climate adaptation?

This thesis aims to contribute to literature on institutional change for climate adaptation by providing an empirical, single case study of an interdepartmental stormwater project in The Municipality of Oslo, project Torshovdalen, including four agencies within the municipality. Further, we intend to identify and systematically analyze and conceptualize the challenges and opportunities for change in the Municipality of Oslo, resulting in a set of theoretical and practical implications.

STORMWATER MANAGEMENT IN OSLO

In the mid 1800's, as a response to the challenges of increased urbanization and growth in population, the process of modernizing the sewage system of Oslo began (NOU, 2015:16, 2015). The systems were developed to also lead stormwater as a measure to clean the sewage lines, and open watercourses were closed for health purposes. The responsibility of stormwater management was considered to belong to the Municipality of Oslo, and for a hundred years, the sewage systems were considered adequate management of stormwater (Johansen, 2001). The sewers were designed to last for approximately hundred years, and designed with the knowledge of precipitation and population growth at the time of the establishment. They are thus built with limited consideration of increased quantities of water due to changes in climate and population density. Norway has an annual replacement rate of the sewers of 0,5 percent (SSB, 2013). With the large number of sewers, that implies that it will take 200 years to renew all sewers.

With increased knowledge of climate challenges and stormwater challenges for the future, followed an understanding that former measures were not capable of managing future changes in climate and population density. In 1978, the Norwegian

Environment Agency established guidelines that decided stormwater should be managed by natural drainage systems rather than through the sewage systems (SFT, 1978).

STORMWATER MANAGEMENT IN THE MUNICIPALITY OF OSLO

The Municipality of Oslo is a complex organization, consisting of over 50.000 employees distributed throughout different political entities, departments, agencies, municipal undertakings and district administrations. See Appendix 1 for an organizational chart of the Municipality of Oslo and all departments. Stormwater management is a relatively new field in Norway, and the roles and responsibility for management is distributed across several entities in the organization. In the last decade, a demand for more collaborative efforts gained focus, and the municipality has initiated several measures.

First of all, the Municipality of Oslo has included a clause on stormwater management in their Governing Plan, deciding that “§4.2 Stormwater should preferably be dealt with locally and open ... multifunctional solutions should be pursued” (Oslo kommune, 2015: p. 21). In 2012, four agencies within the municipality began working on an interdisciplinary Strategy Plan for stormwater management, and a plan for 2013-2030 was adopted by the City Government in 2014. The strategy focuses on three areas in particular; being able to face climate changes and minimize damages from stormwater and urban flooding, managing to preserve the environment and secure the bodies of water, and to use stormwater as a resource by using local infiltration, attenuation and usage wherever practicable, and by using open, natural and multifunctional systems of attenuation (Oslo kommune, 2013).

A consequence of the Strategy Plan was the creation of an Action Plan, that was finalized in 2016. The Action Plan defines sets of actions to complement the objectives set in the Strategy Plan, and identifies five areas of focus that must be prioritized; gain more knowledge, prevent consequences, develop exemplary projects, closer collaboration, and better information and guidance (Oslo kommune, 2016). The responsibility for coordination of the development of the Action Plan landed with the Agency for Water and Wastewater Services (Vann- og

Avløpsetaten, VAV), while the responsibility for coordinating the execution of the Action Plan landed with the Agency for Planning and Building Services (Plan- og Bygningsetaten, PBE).

The Agency for Water and Wastewater Services supply the population of Oslo with drinking water and handle the wastewater. They own the treatment plants, pipelines and pumping stations for both drinking water and wastewater in Oslo, and their area of responsibility is operation, maintenance and renewal of those facilities. They also work with water resource management, monitoring of the city's rivers, and guidance and information for customer and society. The agency is financed through water and drainage fees, and employs approximately 600 workers (Oslo kommune, 2018a).

The Agency for Planning and Building Services is responsible for the municipality's overall area planning, planning and construction work, map management and map and division operations. Their role is to be a driving force in the urban development of Oslo, administering administer public buildings and plots, and regulating building applications. The agency employs approximately 450 workers (Oslo kommune, 2018b).

Another agency that is heavily involved in the Action Plan and Strategy Plan, is the Agency for Urban Environment (Bymiljøetaten, BYM). BYM administer public grounds, like streets, squares, parks, recreational areas, sports facilities, Oslomarka and inner Oslofjord. BYM is also responsible for air, noise, water, soil. The aim of BYM is to make Oslo a safe, beautiful, environmentally friendly and sporty city. The agency employs approximately 750 workers (Oslo kommune, 2018c).

The public ground not administered by BYM is managed by the district administrations, each responsible for sections within their own local area. The district administrations have no direct responsibility for stormwater management, but are responsible for areas that may be affected by stormwater projects and initiatives. The district administrations have a more direct link to the communities within their areas, and local politicians, than the agencies. The Municipality of Oslo consist of 15 districts.

Together, these agencies are responsible for the management of stormwater in the Municipality of Oslo. VAV is responsible for the water when it runs into the sewage systems, BYM is responsible for the natural and constructed water paths, such as rivers and streams or roads or parks. PBE is responsible for the adaptation of buildings to and plots to include sustainable stormwater management measures, and the district administrations are responsible for the local communities. The Department of Urban Development established a forum for green and technical infrastructure, called Green Technical Forum, in 2016. The forum serves as a interdisciplinary advisory body for agencies working with climate adaptation. Top managers from each agency is represented, and they coordinate collaboration and communication between the agencies affected by green and technical infrastructure, for projects and cases.

PROJECT TORSHOVDALEN

Torshovbekken is the largest sidestream of Akerselva, being approximately five kilometres long. The stream begins at Tonsenhagen, and joins in to Akerselva at Nybrua (Appendix 2). Almost every part of the stream was put in pipes around the shift to the twentieth century. Torshovdalen is a section of the stream, a park area in Torshov. The Municipality of Oslo has defined an objective of reopening up as many streams as possible in order to better adapt to climate challenges and better manage heavy rainfall (Oslo kommune, 2018d). Torshovdalen is considered to have physical and topographic conditions that are well suited for opening up the stream again, due to the infrastructure and open land area. However, there are challenges to opening up a stream that has been connected to the sewage system, with regards to water quality and quantity. Torshovdalen is part of a research project to investigate opportunities for stormwater management, and can serve as an exemplary case for future stormwater projects.

The park area is mainly managed by BYM, but the Sagene District initiated the project by sending a formal invitation to VAV for discussing possibilities. The Sagene District is responsible for the area surrounding the park, and also manage the part of the park that has an activity center. Sagene District includes Iladalen, Sagene, Bjølsen, Sandaker and Torshov. There are approximately 42.000 inhabitants in the district, and the administration of the unit for culture and local

community consist of 10 employees. The unit is responsible for the management, operation and maintenance of 21 smaller parks and squares in the district, is the specialist unit for environmental and urban development, and coordinates the work of the district area initiatives. The unit also handles the allocation of funds for volunteers and environmental initiatives (Sagene Samfunnshus, 2018).

The challenge of stormwater projects in the Municipality of Oslo is to implement the defined plans and objectives into action in an efficient manner, across different entities in the organization. In order to evaluate a best practice approach to the interdepartmental collaboration initiative project Torshovdalen, the Municipality of Oslo needs to consider present stormwater management practices and how to change for increased climate adaptation and sustainable management.

THEORETICAL BACKGROUND

The impending threat of uncertainty that follow climate changes makes it critical to understand the role of institutions in shaping climate adaptation, because climate adaptation is highly local and dependent on incentives and structures of collective action from local institutions (Agrawal, McSweeney & Perrin, 2008). W. R. Scott (2014: p. 56) defines institutions as “regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to life”. These elements provide institutional structure that constrain behavior by providing legal, moral, and cultural boundaries, as well as enabling behavior through guidelines and stimulus for action. In the face of change, institutional theory becomes of particular relevance, because institutional structure serves as a resistance to change. Institutional change is dependent on either internal or external conflict and contradiction, where uncertainty provokes the processes of change (Scott, W. R., 2014).

In order to address our research question, it is imperative that we explore the concept of institutional change, and how it can present an organization with challenges and opportunities for climate adaptation. We begin with a holistic perspective on the concept of institutional change, followed by literature on why institutional change is so complex and challenging to achieve. Further, we examine

theories related to overcoming barriers to institutional change. We then connect institutional change to climate adaptation and stormwater management, which leads us to an identified gap in literature, and conclude with a set of propositions that will further guide the methodology and analysis of this paper.

INSTITUTIONAL CHANGE

The ability for an organizational field to change in order to adapt to complex contextual forces has proven to be crucial for organizational survival and value creation (Greenwood & Hinings, 1996). Closely connected in evolution to organizational change is institutional change, as they reciprocally shape each other (Haveman & Rao, 1997). Institutional change is often a result of a change in the dominant institution of an organizational field (Reay & Hinings, 2009). It can thus be explained as an evolving process from one dominant institution to another, as well as pointing at a restructuring of organizational fields (Hoffman, 1999; DiMaggio, 1991). The challenges of institutional change has been holistically summarized and phrased in this way; “How can actors change institutions if their actions, intentions, and, rationality are all conditioned by the very institution they wish to change?” (Holm, 1995: p. 398).

Dacin, Goodstein and Scott (2002) investigates the research done on institutional change regarding three topics; the drivers of change, how organizations respond to change, and change as a process. One type of pressure that drives institutional change has been suggested by Oliver (1992) as the political pressures, being mostly results of changed power distributions and interests. In such a case the legitimacy of a practice is being questioned, stemming from environmental changes or crisis in performance. Dacin et al. (2002) links the pressures with how legitimacy is needed as an element for influencing how institutional changes are being responded to, making alternative institutional logics to appear less wanted, feasible and suited. Their paper is then addressing the research done on the processes of institutional change, mostly focused towards how existing norms fail and new norms being justified as pragmatic or moral concerns, resulting in institutionalization of the new norms and practices.

In the context of institutional change it has been distinguished between revolutionary and evolutionary change. They differ in the way that revolutionary change occurs rapidly and influencing all parts of the organization at the same time, while evolutionary change happen at a slow pace and it affects the organization in a gradually manner (Greenwood & Hinings, 1996). Further is the notion of how the different institutional changes are triggered and unfolded. Revolutionary change processes are caused by forceful dynamics of macro-level that disrupt institutional reproduction, while also challenging a change in the institutions that maintain stability. Change that unfolds through conflicts that are interrupting and forceful among rival actors with asymmetrical power is expected to be revolutionary (Hoffman, 1999). Contrasting this is how evolutionary change processes are caused by less rushed forces as seen when there are slow societal changes or if modest innovations are intentionally introduced. Evolutionary change unfolds through pragmatic collaborations and convincing embedding (Reay & Hinings, 2009).

Adding on to the research on how institutional change acts out over time, Lawrence, Winn & Jennings (2001) created their study on the subject of temporal dynamics of institutionalization. They present frameworks that show the percentage that adopts a process of institutionalization, linked to the concept of time, when described through levels of pace and stability. The model of slowest pace and lowest stability is argued to be institutionalization based on influence. The model of fastest pace and highest stability is argued to be institutionalization based on force and domination.

Thornton and Ocasio (2008) presents four mechanisms that affects change; institutional entrepreneurs, event sequencing, structural overlap, and competing logics. Institutional entrepreneurs are the actors that holds the opportunity of creating new, while changing old, institutions, since they are the ones with access to the resources that favor their own self-interests (DiMaggio, 1988). The main challenge for such an actor is then how to pass on a new common logic successfully by the creation of a suited environment (Thornton & Ocasio, 2008). Structural overlap occurs in the event of previously separated roles, structures and functions being forced into association with each other (Thornton, 2004). Another element to influence change is event sequencing in which an unique event modify institutions, often accelerating several changes as a result of overlapping structures. Although

competing logics do not have the same direct effect as the three mechanisms mentioned above, it is recognized as a consequence or antecedent, in addition to often serving as a resistant facilitator for institutional change. (Thornton & Ocasio, 2008).

IMPEDIMENTS TO INSTITUTIONAL CHANGE

W. R. Scott (2014) developed a set of institutional pillars that identify elements in which makes up or support an institution; the regulative pillar, the normative pillar, and the cultural-cognitive pillar (Appendix 3). The institutional pillars are used to explain how institutions constrain behavior by providing actors with logics, mechanisms, instructions and ways they must, should, or do behave.

The regulative pillar is based on laws, rules and regulations. Scott argue that regulatory systems exhibit high value on obligations, precision and delegation. Authority is an important aspect of the regulative pillar, as coercion is the primary mechanism for compliance, and the pillar is most reliant on rational agents. The pillar presents a logic for human behavior as such: “Individuals craft laws and rules that they believe will advance their interests, and individuals conform to laws and rules because they seek the attendant rewards or wish to avoid sanctions” (Scott, W. R., 2014: p. 62).

The normative pillar is less reliant on rational agents than the regulative pillar. The pillar is based on value and norms. Scott explains value as the understanding of preferred behavior together with the established routines of which existing structures or behaviors can be compared. Norms define appropriate ways of achieving valued ends, how things should be done. The normative pillar place importance on roles, which are either socially constructed or arise informally through interactions, and give directions for expected behavior. Objectives are also imperative; both definition of, and the designed implementation of. Normative institutions are governed by moral and social obligations. The feeling of shame and disgrace or respect and honor, and the predisposition towards compliance with norms.

The cultural-cognitive pillar concern the conception of common beliefs and shared understandings, action that is taken for granted and a common framework of meanings. The regulation of behavior is in this sense constricted by the feelings of confidence or confusion towards own behavior and competence in shared patterns with others. Culture-cognitive systems are reciprocal in the sense that the culture define and frame individual beliefs, while at the same time is constructed by the shared logics of individuals.

How shared beliefs and standards can challenge institutional change, can further be explored through the concept of institutional logics. Cloutier and Langley (2013: p. 361) define institutional logics as follows: “In essence, logics can be viewed as bundled sets or ensembles of higher order meanings, values, norms, and/or rules that frame how individuals make sense of the world around them and consequently know how to act”. Institutions impose constraints on behavior, but also provide opportunities for both intentional and unintentional institutional change, and this is managed through the distinct variations of institutional logics and their contradictions (Greif, 2006; Thornton et al., 2015).

Institutional logics are dependent on historical development, and an organizational field is typically representing several logics at the same time (Greenwood, Díaz, Li & Lorente, 2010). These logics are often conflicting, meaning that organizations are unlikely to respond to their different contexts in a uniform manner, and often referred to as ‘coexisting logics’. An assumption is that they are solved through competition, by considering organizational fields as spheres of power relations in which certain actors hold a stronger position than others (Hoffman, 1999; Brint & Karabel, 1991). One dominant logic emerges as a set of beliefs and values from the most powerful actors, set the field’s structure (Fligstein, 1993). When a new logic is introduced and thus pushing the old logic away, it has been found that such a rivalry often is solved by covering behaviors (Reay & Hinings, 2009). Although it may seem as if the field’s new dominant logic is the one acknowledged by its actors, the reality is often that the old logic still exists and direct the behavior in a less transparent way than earlier. This notion is emphasizing how crucial it is to understand the power of individual actors when acknowledging present competing logics (Reay and Hinings, 2009).

Aside from the focus on rivalry between competing institutional logics is also the recognition of collaboration as a prominent element in institutionalization. Collaboration “occurs when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms, and structures, to act or decide on issues related to that domain” (Wood & Gray 1991: p. 146). It is suggested that collaboration, rather than rivalry, is strongly beneficial for solving contradictions between coexisting logics within an organizational field (Phillips, Lawrence & Hardy, 2000). While most research have focused on how one dominant logic is replaced by a new as a source for change in the organizational field, Reay and Hinings (2009) addresses how collaboration may emerge from actors’ developed mechanisms and thus supporting coexisting logics that otherwise would encounter in competition. They further found that if actors are encouraged to keep their distinct identities while also developing a common set of objectives, new institutions can be constructed and thus facilitating for more than one logic guiding the actors’ behavior.

A new or changed institutional logic becomes institutionalized through the logic being interpreted, given meaning to, and responded to by actors within the organization. Greenwood, Suddaby and Hinings (2002) identify a critical step of change in institutional logics, through their model of institutional change; theorization and legitimation by existing or new actors. Theorization require specification of where the existing norms and practices fails, as well as moral or pragmatic justification of new norms and practices. As this process spread through the organization, new norms and practices gain legitimacy and become increasingly more institutionalized (Dacin et al., 2002).

Scott (2014) urges the notion that, while the three pillars are distinctive in their definition, they also seldom operate in isolated practice. When the pillars are aligned, meaning that routines and behavior is taken for granted, normatively endorsed, and backed by authorized powers, their combination can be powerful for framing behavior. On the other hand, they may also be misaligned, and thus create opportunities for a less constrained structure of behavior, giving room for more individual interpretation of the correct action. It is in such environments, often filled with conflict and confusion, that opportunities for institutional change occur.

In order to consider in which ways institutions change, it is imperative to look at how institutions are carried across time and space. Scott (2014) identifies four types of “institutional carriers”; symbolic systems, relational systems, activities and artifacts. When institutional elements move from time to time and space to space, they change and adapt to the situation. Scott explain the carriers as follows:

Symbolic systems - various types of symbolic schemata into which meaningful information is coded and conveyed; relational systems - including both interpersonal and interorganizational linkages; routines (activities) - habitualized behavior, patterned actions reflecting tacit knowledge held and conveyed by actors; and artifacts - material culture created by human ingenuity to assist in the performance of tasks (Scott, 2003: p. 882).

The carriers can vary according to which institutional element that has assumed primacy in the situation; regulative, normative or cultural-cognitive (Appendix 4). The pillars of Scott use the term *basis of legitimacy* to explain how one element may assume primacy over the others in establishing social order. The regulative pillar rests on the compliance of laws and rules, the normative pillar asserts the appropriateness and morality of the action, and the cultural-cognitive pillar is legitimized by recognition and cultural support (Scott, W. R., 2014). The rules of an organization may not be perceived as the best practice, even in contrast with what one think is right, or there may exist recognition among the employees that a rule does not need to be followed, and therefore they deviate from the defined rules.

MANAGING INSTITUTIONAL CHANGE

The previous section have discussed how the complexity of institutions become impediments to institutional change. In institutional literature, there has also been a focus that aims to explain how institutional changes occur, embraced as the concept of institutional work. Lawrence and Suddaby (2006) connects the concepts of institutional logics, change and work by saying that the field actors’ institutional work is affecting the change of institutional logics. The concept of institutional work was defined by Lawrence et al. (2009: p. 215) as “the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions”. The focus is thus shifted towards actors with levels of intentionality,

although it varies how strong that intentionality is (Lawrence, Suddaby & Leca, 2011).

Lawrence et al. (2009) have addressed how institutional work is contrasting previous research on institutions in the sense that it focuses on practices instead of processes. They further emphasize that a practice point of view is not looking at individuals as independent and autonomous, but how actors utilize their work of actions without knowing whether the outcome will be as desired or not. According to Meyer and Rowan (1977), the work of changing institutional logics can occur in two ways; either with an organization driving its relations to adapt to new practices, or by organizations attempting to integrate procedures into the environment as institutional rules. This approach is thus recognizing the efforts made by actors on organizational and individual level towards a goal of changing the norms of actions.

Research has however been differing when discussing what actors that entails the power and motivation for change (Lawrence et al, 2009; Leblebici, Salancik, Copay & King, 1991). This approach is challenging DiMaggio's (1988) arguments of how institutional entrepreneurs are the only actors with the opportunity to engage in institutional change. It is suggested that such work can be extended to the actors with roles that serve facilitative or supportive purposes, as well as for those actors holding the needed resources and skills (Lawrence et al., 2009). Another approach is emphasizing the power obtained by a limited set of institutional entrepreneurs, and how they are the only ones with the needed resources for introducing institutional change. Because "the creation and change of institutions are expensive, they require high levels of interest and resources", meaning that political structures can explain the institutionalization of an organizational practice (Leblebici et al., 1991: p. 336).

It is further argued that institutional entrepreneurs are those who act outside the practices and rules determined by the dominant institutional logic by the creation of substitute practices and rules (Battilana, 2006). There is a demand that these institutional entrepreneurs entail a certain willingness to act, decided by degree of interest, and ability to act, decided by amount of resources that are accessible (Dimaggio, 1988; Lawrence, 1999). Another indicator for whether such actors will in fact break with the dominant institutional logics is the social positions of these

individuals. Battilana (2006: p. 666) argues that social positions in organizational fields will affect their actions, including the propositions that “The higher in the organizational hierarchy individuals are, the more likely they are to conduct divergent organizational change”.

In addition to explaining how actors engage when initiating and implementing change in logics, institutional work can also provide a perspective on how actors react and respond to the changed institutional logics, as explored by Gawer and Philips (2013). Their study found that institutional work needs to be performed both externally and internally simultaneously, while also engage in activities of both initiating and responding as the changes occur. It has been suggested that there are five ways of how changing logics results in responding institutional work from most passive to least passive; acquiescence, compromise, avoidance, defiance and manipulation, pointing at compromising as the most suited strategy when the organization is faced with conflicting logics (Oliver, 1991). Pache and Santos (2013) have argued against this and introduced selective coupling as a less costly and more successful response to competing institutional logics. This is explained by the notion that in contrast to compromise, selective coupling does not demand actors to create alternative activities for solving the competing logics.

Research have also pointed at how institutional work evolves in the situation of when an introduced logic is not successfully acted out as desired, often referred to as deinstitutionalization (Leblebici et al., 1991). Zucker (1988) claimed how the importance for preservation of a practice is the requirement for actual practice of it. She further speculated that institutions may be taken for granted and thus ignored, demanding practice at the microlevel in order for stability at the macrolevel to develop. Another issue an organization can face when a new practice is introduced is if its standards do not meet the interests of all actors affected by it (DiMaggio, 1988). Furthermore, Gawer and Phillips (2013) build on this argument by proposing that new institutions can meet great resistance if actors perceive the new practice to be in conflict with the identity of the organization. They explain that organizational identity is mostly significant for how the new practice is made sense of, and how it is decided what actors can perform what practices.

Scott (2014) argue that the cultural-cognitive institutions are the most difficult to change, due to them being deepest embedded in society, and on the other hand the regulative institutions are the most shallow and least difficult to change. A study done by De la Torre-Castro and Lindström (2010) also propose that regulative institutions that are not based on normative and cultural-cognitive institutions are prone to fail. Building on this, Ferguson, Brown and Deletic (2013) propose that change is initially driven by shifts in the cultural-cognitive institutions, which in turn sequentially drives shifts in normative and regulative institutions. They model this into a framework they call *the adaptive cycle*, which describes phases of enabling change in a system.

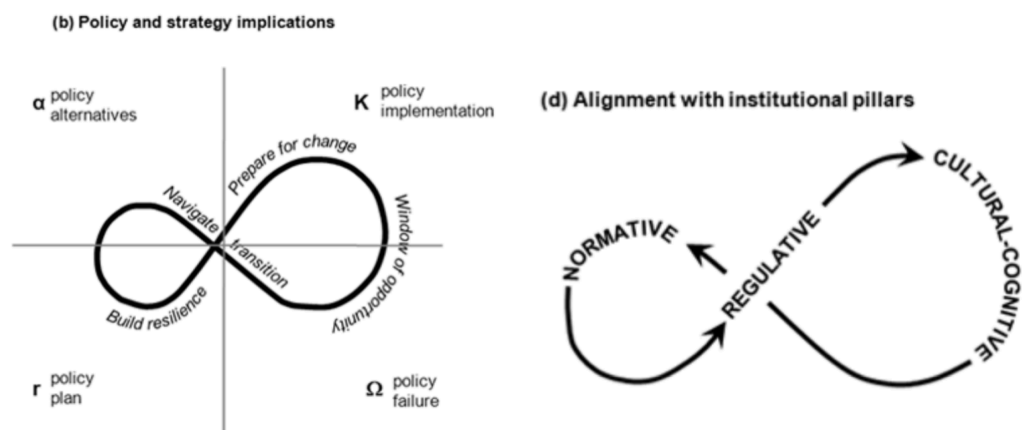


Figure 1; 2: *The Adaptive Cycle* (Ferguson et al., 2013: p. 62).

Two of the phases, the phase of *policy and strategy implications* (fig. 1) and the phase of *alignment with institutional pillars* (fig. 2) can be of particular relevance to institutional change. The policy and strategy implications phase concern the ability to identify how well the system may deal with uncertainty and change. The model is adapted from strategies proposed by Olsson et al. (2006) and Gunderson, Holling and Peterson (2002). The phase of alignment with institutional pillars connects the pillars of Scott (2014) to the focus of strategic initiatives during different phases of change. The models build on three steps of social-ecological system transformations; (1) preparing for change, (2) navigation of transition, and (3) building of resilience.

The first step of the adaptive cycle is *preparing for change*. Olsson et al. (2006) argue that there are three key factors for preparing an institution for change;

developing new knowledge, building informal networks and developing leadership capacity. According to Fergusson et al., this step is most closely linked to shifts in the cultural-cognitive institutions, because reorganization and release of old institutional logics are associated with uncertainty and change in meanings, which give rise to the foundation upon which new institutional logics may emerge. This step is based on a shared understanding of the need for new ways of organizing, and uncertainty about the ways to go forward.

The second step, *navigation of transition*, is connected through the first step by something Olsson et al. (2006) label the *window of opportunity*. Kingdon (1995) argues that the alignment of problem recognition, solution availability, and timing of the political climate is essential for significant institutional changes, and this alignment defines the window of opportunity. When the window of opportunity occur, shifts in the normative institutions will lead to successful navigation of transitional change, because the innovations in the organization compete for resources, but only some will be chosen for exploitation. This is further due to the required flexibility and adaptability this step demands, because the solutions that present themselves from the window of opportunity must be navigated in accordance to the changing conditions (Olsson et al., 2006). The establishment of new routines, roles and standards is part of selecting the best practice solutions for further development.

The final step of adapting to change, is *building resilience*. This step is connected to shifts in the regulative institutions because the organization has begun to adapt to the new way of thinking. This step include further development of the networks, and building of support from the institutional environment (Ferguson et al., 2013). This step is connected to the shift of the regulative framework, because the mindset is becoming increasingly embedded in the organization, and the resistance to new rules and laws are at a minimum.

CLIMATE CHANGE IN INSTITUTIONS

In order to connect the theoretical foundation of institutional theory to the case of stormwater management in the Municipality of Oslo, this paper will now look at institutional change related to climate adaptation. Further, we conclude our

reviewed literature with a set of propositions to further explore our research question; *What interdepartmental collaboration strategies in municipalities are required to overcome institutional barriers for climate adaptation?*

O’Riordan and Jordan (1999) define institutions as a means for giving society a sense of purpose and enabling society to adapt. This is further supported by Adger (2003), who connects institutions to climate change. He explains the role of the state as a facilitator for climate adaptation, through management of environmental risks and promotion of sustainable technologies. Agrawal et al. (2008) define three ways in which local institutions affect climate change; Institutions shape the impact of climate change on communities, they shape the way communities respond to climate change, and they are the intermediaries for external support to adaptation.

Institutions, a product of stability and rigidity, has been identified as a particular barrier to adaptation because adaptation is so reliant on flexibility and change (Næss, Bang, Eriksen & Vevatne, 2005; Dovers & Hezri 2010; Harries & Penning-Rowsell 2011; Lebel, Manuta & Garden, 2011; Storbjörk & Hedrén 2011; Termeer, Biesbroek & Van den Brink, 2012). This is further supported by Brown and Farrelly (2009), who have identified that institutional barriers are to a large degree responsible for the slow pace of change in climate adaptation, and the lack of comprehension of the overall scope and inter-relatedness between the barriers further contribute to the lack of adaptation.

Climate changes affect institutions by creating uncertainty with regards to current practices of climate management, or by introducing entirely new problems with yet undefined practices. Miller, Rhodes and MacDonnell (1997: p. 166-167) raise questions with regards to the implications of the uncertainty that follows climate changes; “What problems might arise from that uncertainty itself and how might the problems differ as a result of the initial legal framework and existing patterns of use and availability?”. Næss et al. (2005) further discuss how present abilities and practices for reducing the negative effects of future similar climatic-induced events may be closely related to the ability and capacity to adapt to future unexpected challenges of climate change.

The systems for stormwater management have been present for decades, and routines, norms, culture and infrastructure are persistent and highly interwoven (Brown, Farrelly & Loorbach, 2013). Sustainable urban water management requires a deeper understanding of socio-institutional government. The policies for urban water management is beginning to reflect an understanding of this, but in practice most implemented efforts are still just responsive and not preventative measures (Brown & Farrelly, 2009). In order to achieve change, practitioners must understand the institutional barriers for best practice stormwater management, and how they interact (Brandes & Kriwoken 2006).

PROPOSITIONS

Many studies have researched institutional impediments to climate adaptation and recommendations for how to overcome them, but Biesbroek, Termeer, Klostermann and Kabat (2014) suggest a gap in literature with regards to more conceptual clarification and precise definition of barriers to climate adaptation. In order to explore and develop an understanding of how, why and where changes for a more sustainable practice of climate adaptation must occur in an institution, this thesis has developed a set of propositions to guide the research. The propositions explore a set of identified barriers in an article by Brown and Farrelly (2009) in the context of institutional carriers.

P1: Best practice interdepartmental collaboration strategies require changes in regulations to overcome institutional barriers for climate adaptation.

The first proposition concerns the change of current regulations in the Municipality of Oslo. We expect the presence of two regulative barriers from the framework of Brown and Farrelly (2009: p. 842); uncoordinated regulatory framework and insufficient human and capital resources. An uncoordinated regulatory framework can limit climate adaptation in the sense that rules and laws set precedence for actions and behavior, and is therefore inefficient if not coordinated across agencies, and to a certain degree an impediment to new initiatives and actions. Resources can be a barrier for climate adaptation if they are insufficient, which is often the case in public administration. Regulation of budgets affect the Municipality of Oslo's

ability to invest and prioritize innovation and projects, making it difficult to implement sustainable solutions that are often costly and extensive.

P2: Best practice interdepartmental collaboration strategies require changes in norms to overcome institutional barriers for climate adaptation.

The second proposition argues for the importance of changing norms as well, in order to adapt to climate changes. We expect in particular four barriers from the framework of Brown and Farrelly (2009: p. 842); unclear, fragmented roles and responsibilities, poor organizational commitment, poor communication, and little or no evaluation. First is that if roles and responsibilities across agencies are unclear and fragmented, collective actions on stormwater management can be unaligned and misunderstood, preventing a holistic and proactive approach. Next is the notion of when an organization lacks the required commitment, which we expect to see in some degree when considering whether the Municipality of Oslo lacks prioritization of stormwater management. Then are the barriers of climate adaptation that occurs when the routines for communication and evaluation are poor, being especially crucial for the collaborative strategies that require such activities to happen across the four agencies included in our research.

P3: Best practice interdepartmental collaboration strategies require changes in logics to overcome institutional barriers for climate adaptation.

At last, we propose that logics need to change in order to overcome institutional barriers to climate adaptation, so that interdepartmental collaboration can become more efficient in the Municipality of Oslo. From the framework of Brown and Farrelly (2009: p. 842), we expect five cultural-cognitive barriers to be present in the Municipality of Oslo; limited community engagement, empowerment and participation, lack of information, knowledge and understanding, technocratic path dependencies and lack of political and public will. Community engagement, empowerment and participation, and political and public will is necessary for the Municipality of Oslo because it is public office, and projects and actions are dependent on initiative and dedication, both inside and outside of the organization. We expect to see a lack of all these elements, that hinder more efficient collaboration. We also anticipate a lack of information, knowledge and

understanding in applying integrated adaptive forms of management, due to varying logics across the departments and levels of the organization. Another set of conflicting logics we anticipate, is the identification of technocratic path dependencies in the agencies of the Municipality of Oslo. Too specific and tacit knowledge of your own field of expertise will most likely be an obstacle for collaboration across departments with each of their own area of responsibility.

METHODOLOGY

RESEARCH DESIGN

Research strategy

The research strategy was chosen with the aim of following the purpose of this thesis, namely to investigate collaborate strategies for overcoming institutional barriers for climate adaptation. Whereas a quantitative method concerns the collection and analysis of numbers, the qualitative approach emphasizes words, processes and behaviour (Bryman & Bell, 2015). Our research question is pointing at the need for collecting information rich data of social form. Since the research question is in close connection with the existing theory and dependent on social processes of complex degree, we found greater opportunities for gaining such insights through a qualitative method rather than a quantitative one. A qualitative approach will help us better explore the interactions between specific actors and entities.

Our research philosophy emphasizes the study's aim to understand the context and relevant subjects. By approaching the methods used in interpretivism, we have searched for understandings through the verbal explanations of how participants in the field of study is interpreting the phenomenons of subject (Myers, 2013). The methods of this thesis are also in the line of constructionism, meaning that "social properties are outcomes of the interactions between individuals, rather than phenomena 'out there' and separate from those involved in their construction" (Bryman & Bell, 2015: p. 392). This approach emphasizes the significance of participants when conducting the data, as the most important source of information in this research.

Choosing a case study

According to Yin (2014), case studies are particularly interesting when (1) the researcher is trying to answer “why” and “how” questions; (2) the researcher has limited control of behavioral events; and (3) the study focuses on a contemporary phenomenon. We believe that the choice of a qualitative case design is the most fitted for our study, based on the reasoning of single-case research being able to deeply investigate a particular phenomena of interest (Eisenhardt & Graebner, 2007).

We have performed our research in a case study of stormwater management in the organization of the Municipality of Oslo, with interdepartmental collaboration for project Torshovdalen in focus. For our study, a case approach have proven to be the most beneficial and was chosen with the concern that the case provides the ability to generate learnings that can be useful for the implementation of project Torshovdalen (Bryman & Bell, 2015). It has been argued that a case study is “best defined as an intensive study of a single unit with an aim to generalize across a larger set of units” (Gerring, 2004: p. 352). Therefore, we chose to investigate the concept of the research question in several internal departments within the organization of the Municipality of Oslo.

DATA COLLECTION

Bryman and Bell (2015) argue that the connection between theory and research of qualitative research is more ambiguous than of quantitative research, and thus data collection consist of greater variability. Therefore, we chose an approach of triangulation, meaning we have used more than one method of data collection (Bryman & Bell, 2015). Altrichter, Feldman, Posch and Somekh (2008) argue that triangulation provides a more detailed and balanced understanding of the situation. We have therefore used the combination of interviews, observations and documents for our study. Interviews and observations will contribute to insight into institutional barriers in the agencies of the Municipality of Oslo, while documents can illustrate the formal structures of strategy and management in the organization.

Interviews

Interviews are our main source of data in order to gain in-depth knowledge of the institutional barriers to climate adaptation in the Municipality of Oslo. According to King (2004), there are four steps for constructing and carrying out qualitative research interviews: defining the research question; creating the interview guide; recruiting participants; and carrying out the interviews. Our research question has guided our data collection, both with regards to the construction of questions for the interview guide, and for recruitment of participants.

We sought to devise a single interview guide (Appendix 5) that would be appropriate to all participants across the agencies of the Municipality of Oslo, and therefore found it most convenient to conduct semi-structured interviews. Semi-structured interviews provided the freedom of flexibility in order to achieve insight into the routines, processes and experiences of the interviewee (Bryman & Bell, 2015). We chose this method in order to extract all the information necessary, but also in order to possibly receive additional information and aspects of the case that we did not account for beforehand. We asked open-ended questions and allowed for follow-up questions, and built up the interview guide with the intention of starting off with easier, factual questions and moving into more advanced, reflective questions towards the end.

The content of the interview questions was shaped with the intention of investigating the concepts of which our propositions were built on. We wanted to touch upon subjects that elaborated on the participants' experiences of management, routines, priorities, communication, action and processes across departments in the Municipality of Oslo. Another approach in the interviews was to establish an understanding of how stormwater management has developed over the last five years. We also searched for thoughts on both expected and wanted forecasts for this work in the future, both short-term and long-term.

We interviewed 14 employees in the Municipality (Appendix 6). The distribution between the agencies varied due to size of the organization, but we were careful to get a selection of participants within each agency to ensure the fullest picture obtainable within the limitations of our thesis. All interviews were conducted at the workplace of our interviewees across Oslo, within a two month period of time, from

mid February to mid April. Each interview lasted between a preset time frame of 30-60 minutes, which was appropriate considering the extent of our interview guide. The interviewees were recorded and transcribed to ensure complete rendition of the content extracted, but also to ensure full concentration and free speech not interrupted by having to write notes down during the interview.

When we recruited participants for our interviews, we used the method of judgment sampling. Judgment sampling reflects some knowledge of the topic, so that people whose opinion will be important to the research, because of what you already know about them, will be selected (Harrell & Bradley, 2009). We have interviewed key personnel in the agencies of the Municipality of Oslo, within the agencies for Water and Wastewater Services (VAV), Urban Management (BYM), Planning and Building Services (PBE) and Sagene District Administration. Our respondents were a selection of employees at different levels of the organization, ranging from operational project executioners, to strategic decision makers on higher levels. They all had in common their connection to planning and management of stormwater issues in their agency, and all had in some way or other been involved in interdepartmental collaboration with other agencies. We got access to our sample through our collaboration with the Municipality of Oslo, with a central employee that provided us with his/her network.

Observations

Due to the time constraint and the scope of the thesis work, we have used a limited amount of observations, so called micro-ethnography (Bryman & Bell, 2015). A full scale ethnographic study would require spending considerable time within the organization. We therefore limited our observational study to participant observations in meetings with the Municipality of Oslo. We have attended several meetings with an assembly of employees from the Municipality of Oslo and students from other institutions for the project of Torshovdalen. The first meeting was in the beginning of December 2017, with monthly repetition until May 2018. This is a cross-agency and interdisciplinary project group, which has provided us with complementary observations to our data material from interviews.

Documents

The use of documents has also been complementary to our interview data material, in order to further increase our conception of the organizational structure of the Municipality of Oslo. A list of the used documents is found in Appendix 7. The most relevant documents have been the Strategy Plan for stormwater management, the Action Plan for stormwater management, and similar description and factual sheets of information about stormwater management from the Municipality of Oslo. In addition, organizational charts, Official Norwegian Reports and other reports have helped guide our analysis and understanding of the concepts we discuss. In order to ensure quality of the information we gather, we have evaluated the documents according to their credibility, authenticity, representativeness and meaning (Scott, J., 2014).

DATA ANALYSIS

Because the source of data in qualitative methods are embedded in interviews and observations, the procedure for analysis is not constrained by strict rules or procedures on how to do it (Bryman & Bell, 2015). To manage the extensive amount of data collected, we used the Computer Assisted Qualitative Data Analysis Software NVivo.

This thesis follow the strategy of abduction, using the tools of framework, theory, case study and the empirical world (Dubois & Gadde, 2002). This approach involves a process of systematic combination, where one goes back and forth between the research activities, and between empirical observations and theory (figure 3). This contributes to an expanded understanding of both the theory and the empirical phenomena.

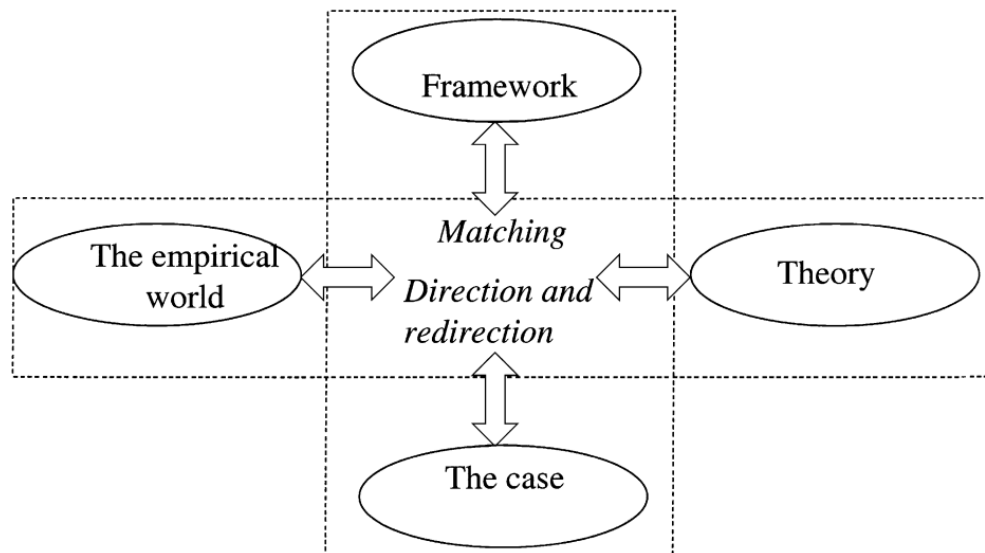


Figure 3: Systematic Combining (Dubois & Gadde, 2002: p. 555)

In systematic combining, one uses concepts as a way to create reference and to function as a guideline when entering the empirical world, and the framework is evolving by refinement of concepts underway (Dubois & Gadde, 2002). This study has been guided by literature on institutional change, and thus the findings were explored and categorized according to the theoretical framework. Our propositions guided the research, and formed the coding structure. While a predefined coding structure has the potential disadvantage of limiting the analysis, we continued to code and looked for themes not initially included. We defined three top-level nodes, based on the institutional barriers; regulative barriers, normative barriers and cultural-cognitive barriers, each with their own family of sub-themes (Appendix 8).

The sub-themes were made from three out of four of the types of institutional carriers (Scott, W. R., 2014). Excluding artifacts due to our focus on patterns of behavior, interaction and practice, the answers from employees resulted in evidence of symbolic systems, relational systems and activities in the agencies. Furthermore, we investigated how these carriers were inhibiting or facilitating collaboration and best practice management. We then compared the sorted answers of the employees across each agency to identify similarities and differences of opinion and experience, as well as comparing the employees within each agency to ensure consensus or conflict of concepts. These results are presented in the chapter on findings, after theoretical saturation was achieved from going back and forth to the interviews and findings to make sure nothing of interest had been ignored (Bowen,

2008; Strauss & Corbin, 1990). The purpose of our findings was to compare results with expected theoretical foundations, in which we found both indications of confirmatory and contradictory phenomena.

RESEARCH QUALITY

Due to the inconclusive nature of qualitative research, the concepts of reliability and validity is considered of questionable relevance (Bryman & Bell, 2015). Lincoln and Guba propose two more appropriate criteria for evaluating the quality of qualitative research; *trustworthiness* and *authenticity* (1985; 1994), and King (2004) emphasize the importance of *reflexivity* for qualitative research.

Trustworthiness

Trustworthiness is made up of four criteria; credibility, transferability, dependability and confirmability (Guba & Lincoln, 1994). *Credibility* concern whether the study can be deemed in correct understanding of the social world it investigates, and can be solidified through respondent validation or triangulation. As previously mentioned, this study use an approach of triangulation to ensure proper insight from multiple angles. Furthermore, this study has been in continuous dialogue with project Torshovdalen and the Municipality of Oslo, giving them opportunities for feedback on our progress, contributing to the respondent validation of our study.

Transferability is the potential for study findings to hold in other context. Although we believe our study could be representative for more than one municipal setting, we do not seek to generalize our findings. We leave it to future studies to explore our findings further, but we aimed to provide as rich an account of the phenomena of study as possible in order to ease future judgement on the subject. *Dependability* propose that researchers should allow for auditing of their data in order to ensure trustworthiness. As previously mentioned, we have recorded and transcribed all interviews to ensure as much accountability and transparency as possible. Due to constraints in the extent of our master thesis, as well as our responsibility for anonymity and generalizability of our study, we cannot include all raw data material in our thesis. However, our thesis supervisor have full insight into our material, and will function as an auditor in that sense. Also, since all the interviews were

conducted in Norwegian we had to translate the parts of which we have included as quotes in our findings. We are aware that differences in the languages of English and Norwegian gives room for misinterpretation, but we can ensure that the quotes are representing the correct meaning when translating them to the best of our competencies. To ensure *confirmability*, we have, to the best of our ability, conducted our research without interference from personal values and theoretical inclinations. This was of particular importance when we designed our interview guide, as our study aimed to include unexpected findings and investigate the interviewee interpretations of the issues.

Authenticity

Guba and Lincoln (1994) also propose the criteria of authenticity in order to ensure research quality. This paper has aimed to conduct research that provide better understanding of the institutional barriers that are present between the agencies of the Municipality of Oslo, and hopefully help the agencies better understand the perspectives of each other. Ultimately, the intention of our paper is to stimulate engagement and action for change in the organization to better adapt to climate change. The study has been equally engaged in all the four agencies, and aimed to be objective in its approach in order to strive for fairness.

Reflexivity

King (2004) propose that reflexivity should also be considered an important criteria for qualitative research methods, concerning the recognition of the active participation of the researcher in a study, and how this influence the process of acquiring knowledge and findings. There are several ways to ensure reflexivity in a study, and we have for example made sure we document our thought process along the way, debriefing after every interview by writing down our perceptions while it was still fresh in our minds. We have also ensured higher reflexivity by being able to continuously review and discuss our process, progress and content creation. Not only because we have been two authors with separate perspectives on this thesis, but further because we have had access to discuss with our supervisor, the project Torshovdalen group and Klima 2050. Furthermore, we present our study with a set of propositions at the end of our theoretical background. Our presuppositions are therefore transparent, and we have also defined an aim of our

study to strive for unexpected results and findings from the semi-structured interviews.

ETHICAL CONSIDERATIONS

In order to prevent challenges of ethical issues throughout the research phase, we made sure to follow certain suggested principles. These were taken in action both before, during and after interaction with the study's participants where relevant, as well as a continuous evaluation of them throughout the entire process of conducting the thesis. We have used the proposal of Diener and Crandall (1978) to include especially four ethical principles; risk of harm, informed consent, invasion of privacy and deception. Other ethical issues such as confidentiality, anonymity and voluntary participation has also been central of evaluation throughout (Bryman & Bell, 2015).

The risk of lacking informed consent has been ruled out by the development of consent forms (Appendix 9) that were handed out to interviewees before conducting the interviews. Signatures from interviewees and interviewers were filled out on two forms, one for each participant and one respectively for the authors of this paper. This ensured mutual understanding of the purpose of participation in our study, and the rights of the interviewee, as well as requesting for acceptance of recording the interviews. As defined in the consent form, all recorded material was used exclusively for transcribing, and deleted from all platforms when finished. All statements were made anonymous in order for it to be impossible to trace them back to the specific participant. We have enlisted our master thesis project subject to notification with the Norwegian Centre for Research Data, as is required when collecting personal data for student research projects with direct or indirect personal data involved (NSD, 2018).

FINDINGS

The following chapter presents the findings substantiating the institutional barriers of the Municipality of Oslo, and how they may prevent collaboration initiatives for climate adaptation. The findings identify attitudes, experiences and thoughts on interdepartmental collaboration efforts for stormwater management, and explore the challenges that are present in the routines and practices of the different agencies in the municipality. We also learn how the agencies are working and attempting to overcome some of these challenges.

REGULATIVE BARRIERS

Rules, laws

When talking about collaborative efforts in the Municipality of Oslo, it became apparent that one major challenge is the structure of financing, budgeting and objectives across the different agencies. The Agency for Water and Wastewater Services (VAV) is self-financed by water and sewage fees, while the Agency for Planning and Building Services (PBE) and the Agency for Urban Environment (BYM) are financed through taxes from the city treasury. These financial structures hold some limitations for budgeting and spending, due to differences in responsibilities and priorities. VAV is restricted to only invest into purposes related to drinking water and sewage, and is therefore dependent on BYM for initiating projects related to stormwater management.

We are not allowed to use fee funds for stormwater initiatives, but the stormwater ends up in our sewage system. We manage it in streams and the purification systems, so it becomes an economic challenge for us anyways. It seems illogical not to spend money on managing it on the surfaces. (VAV employee).

BYM, VAV and the Sagene District all have operational responsibility with subsequent costs, and this restricts their investment budget. They often depend on additional subsidies for projects, or co-financing through agreements with private developers. BYM and VAV often have different priorities, and it is typical for stormwater initiatives to be side projects of other, larger infrastructure projects at BYM. Stormwater management often fall in between responsibilities and priorities

above and below ground. An issue that often arise, is that one agency is ready to budget for initiatives in an area, while another agency have other priorities and no money to set aside at that time. And then they cannot collaborate on a project.

The agencies acknowledge that it is favorable use of time and resources if we collaborate on projects, and that it will increase the amount of feasible projects and decrease the costs of projects. But as of now, there are no standards for this in the municipality. But I am sure it will come in the future. (BYM employee).

PBE does not invest in projects at all, but provide guidelines and regulations for the projects initiated by BYM or VAV. This causes challenges because of the often present friction between cost efficiency and high quality solutions.

Another issue related to this concerns the laws and regulations for stormwater management. In building application management, VAV can regulate applications related to drainage to their pipes, but if a developer avoids applying, and simply writes it will manage stormwater in an open and local manner, then the application goes to PBE instead of VAV, and VAV is prevented from regulating the stormwater management efforts on that site.

What the municipality permits, the municipality must take responsibility for. If we know about it. When we are strict about allowing water into our sewage system, we experience that people try to bypass our rules, and find alternate solutions that end up in our system either way. Without having to apply for anything. But they don't know what they are doing, they think they are smart. It ends up being damaging for the house and grounds. (VAV employee).

PBE have a different set of regulations they enforce, and lacks the extensive knowledge of water and stormwater management solutions found in VAV. Having different legislations and demands when handling much of the same challenges is therefore mentioned as a barrier to efficient collaboration. The agencies request more specific and strict guidelines that apply for all, in order to better manage stormwater. The agencies also mention outdated practices concerning application management as an impediment to efficient stormwater management practices. As

of today, they are obliged by law to administer applications in a chronological order, which makes the process of coordinating efforts and projects more complex.

In the future, it must be more guided by risk and consequence rather than just what is easy.

If we don't manage by the highest risk, we will use an awfully long time on climate adaptation. (VAV employee).

The changes necessary must come from governmental decision making, because municipal governing is limited by the rules and laws enforced from above. The agencies experience that they are delegated responsibility for stormwater adaptation, but not the necessary resources and framework for best practice execution.

Governance systems, power systems

When discussing the process of interdepartmental collaboration in the Municipality of Oslo, the agencies stress the importance of bureaucratic processes for enabling collaboration projects. If an agency wants to initiate a project with other agencies, they must go through formal channels of communication.

In a well-functioning democracy, the politicians must depend on their agencies and departments. Projects and initiatives come from below, then up to the top, and back down again. (VAV employee).

The process of coordination is much easier if it is embedded in the top management of the agencies involved. And that is due to our success being measured by the degree of which we deliver on the instructions from the City Government Departments. (PBE employee).

However, these processes are also considered time-consuming and slow, and the operational level of the organization have very limited authority for execution, even though they express a demand for more informal and flexible systems in which they can operate. Instructions from above are conditional for funding. The top managers are constrained by the objectives set by the City Government Departments, and the agencies belong under different departments. VAV and BYM belong to the

Department of Environment and Transport, while PBE belong to the Department of Urban Development, and Sagene District belong to the Department of Primary Health and Social Services. It follows that coordinating separate objectives and priorities become complex in such an organization. The agencies experience that collaboration on the operational level is functioning better than on the managerial level, and often depend on having the right network.

Collaborations on the operational level functions very well. The challenge is to accomplish joint willingness for investments. Because our City Government Department is the same one as VAV, with the same Vice Mayor, but separate sections within the department. They work in very different ways when it comes to investment projects. So the challenge is to make the agencies align their time, and the top management to have the same agenda. (BYM employee).

Even though the top management first and foremost want to deliver on objectives and instructions from the City Government Departments, there is consensus that collaboration is necessary, and agencies are expected to work together. But common incentives must be developed to better facilitate for interdepartmental collaboration.

The agencies in the Municipality of Oslo are very large, and everyone wish to be good. But if they want to be good within each their silo, that will not be good enough for the city. So the City Government Department must also take ownership of that dilemma. (BYM employee).

An initiative that most agencies agree on, is the Action Plan for Stormwater Management. It has created a joint platform of information, with a set of guidelines and objectives that helps employees get commitment to projects and initiatives. It was developed in a joint collaboration between the agencies that manage stormwater. Even though it is not politically adopted yet, as of now it is being processed, most agencies treat it as a binding mandate. It is a document that applies to all agencies, and give directions for management of stormwater. However, until the plan is politically embedded in the organization, there are some challenges. First of all, the Action Plan is a specification of the Strategy Plan that was politically

adopted in 2014, but it is still limited with regards to clear directions and routines for tasks related to stormwater management.

Best practice stormwater management need to start with plans. Guiding plans for public spaces, including stormwater, and those can be fluffy plans. On the next level, we need regulation plans, that take into consideration regulation of flood trails, sewage system, that there are no conflicts and such. And those must be processed quickly. And if those are accepted, we need detailed framework plans where we propose how to best utilize the plot of land, and then we can use the guide for stormwater in building applications. Finally, there is commissioning permits, and then the whole process is planned out and decided. (VAV employee).

Monitoring, sanctioning, disrupting

Most of the agencies agree that strict rules and guidelines make collaboration on stormwater management more easy to execute, because the responsibilities and demands are more specific.

One of the most important aspects of efficiency in the Municipality of Oslo, is clearly defined guidelines for what needs to go through the top management and what tasks can be decided on a more operational level. A lot need to go to top management, but that is much more time consuming. It has to go up to one director, then from director to director, then down there, back up again and back. It is a barrier for efficiency. (VAV employee).

The agencies also enhance that strict rules contribute to obedience, because if it is a clear defined responsibility, then the top management needs to budget for investments and manpower of projects. Thus, top management apply for funding in budget proposals, and it is considered a priority. However, there are challenges associated with managing strict rules in the municipality. Some employees experience that too much obedience creates slow processes, and that the holistic perspective on stormwater management is more difficult to maintain. And a consequence of strict instructions from above, is a lack of initiative when there are no specific instructions. Furthermore, a very strict interpretation of the laws and

rules would mean that a lot of the interdepartmental collaboration projects would never had been initiated.

If we were to interpret the fee regulation very precisely today, we should not really use money on a lot of the projects we are using money on today. But then we would have had problems with operations of the sewage system, if we were to not manage any stormwater. It makes it difficult to continuously keep a balance. There are a lot of grey areas we have to navigate. (VAV employee).

Summary of regulative barriers

P1: Best practice interdepartmental collaboration strategies require changes in regulations to overcome institutional barriers for climate adaptation.

As mentioned in the first proposition, we expected to find evidence of a limited regulatory framework and lack of human and capital resources as barriers to climate adaptation in the Municipality of Oslo. From the interviews, we found that there exist demands for new legal practices surrounding stormwater management, and that the present legal framework is outdated or not specific enough. A regulatory framework that is superior to all the agencies, rewarding joint efforts, is also asked for. This also relates to the lack of resources, due to the separate financial systems of the agencies. Investment of human capital and funds for collaborative projects is challenging, and thus a barrier for climate adaptation efforts.

In addition to the expected findings, we have also identified other barriers from the present regulative carriers in the municipality. The projects and plans for stormwater management are embedded in bureaucratic processes, that impede the progress of climate adaptation. Formal communication structures, and dependability on political embeddedness makes collaboration efforts challenging, and commitment to projects difficult.

NORMATIVE BARRIERS*Values, expectations, standards*

There is a consistent perception in each agency that the other agencies lack the correct understanding of what their responsibilities are. An employee in VAV is addressing the concern that the other agencies regard VAV as too strict in their demands for stormwater management, and thus that their actions are not fairly appreciated. There is however a positive belief that people in general have a willingness for the field of stormwater. A common perception in all agencies is that the focus on stormwater management have increased drastically the last ten years. An anticipation for where these changed focus areas will lead the municipality in the future is however not something that can be forecasted with any certainty.

It is a leap in the right direction. If we continue at the same pace in the future, stormwater practices will be good in five, ten, fifteen, or twenty years. (PBE employee)

The importance of considering the city as one connected area in a systematic way is agreed on by more or less all interviewees. What is of conflicting nature is the experience of whether such an approach is being followed in the different agencies. The idea of thinking proactively pervades employees in all agencies as an ideal approach for managing stormwater. A concern of doing projects in a too proactive manner has however occurred after experiences of completed projects that in the aftermath has not required full utilization of the solution. Hence, by building with the idea that the solution is made to handle extreme climate changes and heavy rain may be experienced as too dramatic before such weather incidents actually happen. Decisions and prioritizations are forced to happen without the time to wait for increased knowledge, being that there is no opportunity to pause the always ongoing city development.

In BYM, we identified uncertainty on whether there is acceptance for prioritizing cross agency collaborations over regular intradepartmental tasks. There exists a vision for cross sectional thinking that breaks the traditional silos. This is however experienced as difficult to practice because each agency serve their own set of internal objectives upon which they are measured. When resources are limited, the agency's objectives take primacy. VAV experience an expectation from the other

agencies that they contribute at a higher level, and since VAV employees are so dedicated to the discipline, they comply with these expectations. Thus, challenges arise when tasks in collaboration with other agencies are too far aside from internal tasks, something the agency managers have to restrict.

Regimes, authority systems

Collaboration across agencies have not always worked well. There has been little communication between the entities in advance of doing constructions at the same place or at close locations. Coordination challenges occur because of VAV and BYM having responsibilities for water respectively under and above the ground. Employees in PBE, in particular, points at the amount of cases and projects that all occur at the same time as a challenge for coordinating across agencies.

Sagene District is missing a clear channel for communication with agencies in other city governments. When roles are unclear, the system leaves messages hanging because of uncertainty for who should solve it. It is acknowledged that the agencies are organized in a way that can challenge the efficiency when being unsure of where to make the point of contact. BYM in particular is pointed at as complex, and one would need to know certain key employees in order to have a chance of getting the message to the relevant person. Familiarity on a personal level is also beneficial for involving the relevant people to a project, something all agencies consider to be fruitful.

We always attempt to use the same group of people. In the initial phase of such projects, we receive an official request at first and then we reach out to the relevant agency unofficially. Then we discuss in the different departments on who should be involved, linked to where the biggest consequences of the project are. The management level is then involved, granting resources for this decision, also being aware on who has been involved earlier. (PBE employee)

In the initiation of project Torshovdalen, Sagene District reached out to VAV and BYM and hoped for their interest for collaboration. Since this is not politically instructed, there is uncertainty on whether the agencies have resources that can be used on this project. Sagene District is currently left in a limbo on this process, as

they are kept out of the loop from VAV and BYM. It will be the responsibility of Sagene District to later on take this initiative to the City Government, so that a political instruction can go to the agencies from above.

The establishment of the Green Technical Forum is a board of advisory, but they have no regulative authority. This means that the cases and agreements made in this forum still have to go through the same lines to the City Government in order to get political and managerial support.

It is easier now with the Green Technical Forum, but there is still a lot more to work to do.

The managers have to agree on cases so that they give out equal demands that we can better coordinate across agencies. (VAV employee)

The management level is failing when it comes to joint priorities. (BYM employee)

Considering the Municipality of Oslo as one organisation is experienced to be a difficult challenge. The collaboration between VAV and BYM has room for improvement when it comes to joint instructions that considers the challenges of responsibility concerned to whether the water is below or above the ground.

We are helping the other agencies, we are trying to help each other. Even though we notice now and then that the managers are most concerned with our agency's field of operations, and not helping others. And that is actually a really big problem, in organisations in general, that managers report on their own tasks and not on other managers' tasks. This is a huge challenge. (VAV employee)

The top level managers are measured on the achievement of internal agency objectives, meaning that there is no opportunity to report on achievement of joint solutions and collaborations. However, employees consider the stormwater management issues to be of collective importance.

The management is very focused on who is having what responsibility. If they mean that BYM is holding the responsibility, they would like us to stay away from it. But what we experience is that stormwater management is a relatively new discipline in Norway. If

something is going to happen, we are the ones with the needed technical knowledge of water, and so we have to help the others. (VAV employee)

Roles, jobs, routines, habits, repertoires of collective action

An employee in BYM elaborated on how a project rarely concern only one agency, and that they often have an interdepartmental project group. BYM and VAV, and sometimes other agencies, are involved from initial phases. BYM was formally invited to the work with developing the new Strategy Plan and Action Plan, and they experience early involvement when it is expected that they contribute with professional knowledge. Employees in PBE is also expressing contentment with early involvement, but have seen that both VAV and BYM have struggled with coordination that prevents early participation.

It is explained that collaboration is supposed to happen in two phases; one in the initial phase with the assessment work, and in the next phase that involves the actual implementation.

It is clearly a lot more easy to involve in the implementation phase, because then you can present a concept and a draft. A decision is easier to make in that phase. Involving people in initial phases without them having any expectations of what the project can result in makes it a lot more challenging, because they have a distinct need that is really close to them. (BYM employee)

One statement explained that because a joint unit for stormwater management is still not embedded officially, projects have often involved a lot of ad hoc decisions and coincidences concerning who has been involved. This results in challenges in the later project phases.

An employee in Sagene District also explained that a lot of the role allocation in collaborations seems to be solved ad hoc whenever there is a new project. When it comes to managing the parks in the district, they believe that most of the parks are naturally within BYM's responsibility because of geographic exceedance, but that the rest seem somewhat random. Several employees view collaboration with the

district administrations as challenging and they express confusion concerning collaboration between the agencies and the district administrations.

In the project of Torshovdalen, they (Sagene District) approached us. And I actually didn't know that BYM were managers of that park area. But in reality, they have to do the loop around their City Government, to our City Government. Because we need the instruction from above. If not, BYM will probably say that 'No, we think this park is fine, we don't see any needs to do this'. (VAV employee)

Further is the uncertainty among VAV, BYM and PBE concerning the role allocation. There are different approaches when it comes to either continuing doing what their agency are used to doing, or to follow the new roles.

We get plenty of good help from VAV, they are taking on a lot of responsibility, which is really good. But at the same time, they do make a bit a mess out of it, because they take on a lot of responsibility that they shouldn't have. ... We experience that the other agencies are being more and more aware of knowing what their actual tasks are, which is needed for the future work. (PBE employee)

We don't want to take on too much responsibility from BYM, since they have responsibility for the surface and water on the surface. But still, we don't want that water to run down in our pipe system. So there is a tricky balance there. (VAV employee)

Many of the jobs and roles within stormwater management is as of today often considered to be to some degree randomly appointed. An employee in PBE says that it can be frustrating that they are the ones to receive all inquiries on stormwater in conjunction with building cases, a job they do not have the required resources for. Agency employees have also experienced being involved in collaboration projects on stormwater management without seeing the value of why their agency was represented there.

When it comes to levels of knowledge, the employees agree that it should be highly skilled professionals in all project phases, not just among the employees who initiate the project. They acknowledge the benefits of routinized knowledge sharing

across agencies and process stages, and that this is not being done enough. Even though the willingness for sharing knowledge with coworkers in other agencies exist, they explain that their managers are preventing such actions because of internal agency objectives. A general view on information flow across agencies is that lack of openness prevents relevant knowledge to come through, resulting in misconceptions.

What I have heard recently is that it seems that there is a person who have received the responsibility for a coordination role, but no one knows who it is. There is no information from PBE on this. I have heard that they have already hired someone, but that is just rumors. No one knows anything. So a little transparency would have been nice. (VAV employee)

Similar to the lack of routines for knowledge sharing is that there are no clear knowledge on how to share experiences and doing project evaluations. Some of the agencies do however have internal routines for learning from past projects, but close to none that is transferred further outside the agency.

It is an ambition that we do systematic evaluation after the projects, but I am not sure if it is being done. There are no established roles for who is responsible for evaluation. I do however believe that it is important in order for us to not repeat the same mistakes again and again. (VAV employee)

An unfortunate experience with how strongly separated the agencies are organized, is how there is little or no accessibility to each other's internal documents. Also, the Action Plan was seen as necessary for giving routines for how to collaborate, as the present routines for this was experienced as outdated. Still, some employees are demanding systems for how to follow these routines through, such as common access to certain documents that are equally useful for several agencies. This notion is also pointed at when discussing the routines for sharing project evaluation across agencies.

I believe that all documentation we create during the project should be accessible, along with a final report. But I have to admit that I am unsure of what the routines for this really

are. I am not sure how to make experiences available. We do have a joint project portal where all documents can be saved for everyone to see. (BYM employee)

Contradictory information is thus given when it comes to whether there are joint portals for sharing documents and project evaluations. As a result, employees are uncertain of whether these routines are followed, and how to actually do it.

Summary of normative barriers

P2: Best practice interdepartmental collaboration strategies require changes in norms to overcome institutional barriers for climate adaptation.

Before conducting our data analysis we anticipated to discover a certain set of normative barriers for collaboration; unclear, fragmented roles and responsibilities, poor organizational commitment, poor communication, and little or no evaluation. The authority for managing stormwater in the Municipality of Oslo have shifted from being completely fragmented, to the current Action Plan instructing new roles. Through the interviews, we have however witnessed confusion and misunderstandings in all departments as a result of unclear roles and responsibilities, preventing efficient processes. There is an overall perception that there is still a lack of prioritization and commitment to the subject of stormwater, even though it has improved over the last years. This is reflected in fragmented objectives, resulting in separate strategies that serve as a barrier for managing stormwater in a more long-term perspective. Also, employees interviewed demand more clear cut routines for communication and evaluation.

CULTURAL-COGNITIVE BARRIERS

Categories, typifications, schemas, frames

All agencies agree that “the right” person is imperative for well-functioning collaboration in the municipality. There are some or many individuals in every agency that possess certain qualities; engagement, interest in stormwater, a wish for innovation and will to go the extra mile.

From personal experience, meeting the right persons at the right time is conditional for collaboration on projects. If you meet dedication. For example, in the Torshovdalen project we met with a VAV employee, who was very passionate. Our requests are sometimes a little out there, because we talk about opening up the stream, which may not be feasible until after you have executed several large, costly measures. But when we meet dedicated people, we can look at alternative options and try to identify possibilities (Sagene District employee).

There are different subcultures within the agencies that are affected by this variation. Several employees talk about the department in BYM with responsibilities for road operations, that are often difficult to engage in stormwater management projects. It is especially important with regards to the will to do alternative solutions.

Those invested in stormwater are easy to collaborate with. We have the same objectives. But those in BYM that would prefer for stormwater to just disappear, those are challenging to be working with. There are a lot of discussion with the people that work in the road department and those working with operations, because there are not enough money to operate all the projects (VAV employee).

On the operational side, I have noticed some resistance from “the grey ones” in BYM, those concerned with transport and communication and roads. Historically, those working with sewage water and stormwater in the road section, have the mindset that you just direct it into the sewage systems. There is no longer capacity for that solution, so we need to think differently (PBE employee).

On the other hand, BYM also have a subgroup referred to as “the green ones”, made up of open-minded employees working with parks, outdoors and environment. The employees who have worked on stormwater management for a longer period of time have created a network of dedicated colleagues across agencies. The general opinion is that VAV is the most dedicated agency towards stormwater management, and several employees in VAV are continuously mentioned as enthusiastic

promoters for new ideas. However, some experience their enthusiasm as disruptive for processes, because they take on responsibility outside of their jurisdiction.

Most agencies point to knowledge and variation in competence as a potential reason behind the contrasting openness and dedication to stormwater management. BYM is a merger of five previous agencies, which has affected the culture in the department.

We are a very young agency with regards to the fact that there are no discipline named urban environment, a collection of subjects such as sports, outdoors, transport and communication and green structure. We have named it urban environment ourselves. So we often experience divergence between what we say and what we mean. In projects, you can suddenly have a need for four representatives from BYM. [laughter]. (BYM employee).

The collaboration between VAV and PBE has been affected by the difference in mindsets of engineers, that are very traditional, versus the forward thinking and process oriented employees. The engineers look for definite solutions, and are reluctant to explore alternative solutions like rain gardens. There also exist challenges between the technical agencies and the Sagene District. Many employees in the agencies are reluctant to work with the district administrations, because they experience it as time-consuming and challenging that the district employees don't have the technical knowledge of stormwater.

The district administrations don't have the same technical knowledge as BYM. It's an entirely different process of collaboration. It has almost come to the point where we refuse to be part of project unless BYM is involved. [laughter]. I have experienced it as so time-consuming to work on project without joint instructions and priorities, so I have let notice that I don't work on projects without BYM. We don't want to waste our time, it is not productive. (VAV employee).

On the other hand, Sagene District is eager to work with the agencies, having many ideas for environmental-friendly initiatives. They are aware of their lack of technical competence, but are also clear and proud of the value of their specific knowledge.

I have picked up from a colleague of mine at BYM that there exist different opinions in the agencies on the desired role of the district administrations. But I don't experience that it limits us in any way. On the contrary, I believe it makes us grit our teeth together and want to prove our value to the projects. And that is something we can be proud of (Sagene District employee).

Our knowledge of the local area provides opportunities for excluding small issues that they might have to use more resources on excluding later on. And at the same time, if they include us, we know what is going on and can keep the politicians in the loop (Sagene District employee).

Related to knowledge of stormwater management, the agencies highlight the importance of awareness in order to achieve will for action. For a long time, most of the stormwater focus was limited to certain sections and subgroups in VAV. With the cross-departmental creation of the Strategy Plan and Action Plan, together with an increase in problematic rain events in Oslo, the other agencies have become more involved in and informed on the challenges.

The planning departments here at PBE have probably looked at stormwater management as another demand to handle, a boring demand. It is more fun to plan and execute nice architectural solutions than to find secure runoffs for stormwater, how boring! But then the focus has shifted, and now we see multifunctionality, esthetics, and water as something to experience. And then the architects come to life, then they enter the discussion (PBE employee).

This attitude is also experienced in other fields of stormwater challenges, such as convincing developers to invest in better stormwater management initiatives. The argument of esthetics and environment as an investment in increased value of properties and land has helped. The price of buildings with a nearby stream increase significantly, and thus it is easier to collaborate on sustainable measures in the area.

Another aspect concerning awareness and acceptance of stormwater challenges is related to the increase of events with extreme rainfall, and granted funding and priority from top management and political bodies. The agencies all use a term for extreme rainfall, “granting rain”, with the accompanying connotation of rain of such a magnitude that initiatives and funding for maintenance and damage control becomes an instant priority. The term comes from the event of extreme weather in Copenhagen in 2011, where damages were measured to 10 billion NOK. They had applied for funding of 3 million NOK that was waiting for approval at the time of the extreme rainfall, for preventative measures. Now they have invested 11 billion NOK in over 300 projects to prevent it from happening again.

If we really want to become proactive in our actions, we need a Copenhagen rainfall, an awakening rainfall, a heavy downpour that really hits you where it hurts. Not only the municipality and insurance companies, but also the population as a whole. As of today, there are some individuals with flooded basements, the municipality and insurance companies that feel the consequences, but it needs to be comprehensive, and close to heart. Your own basement, out of your own wallet. It must be personal. (PBE employee).

Stormwater and sewage systems are not the easiest concepts to understand, and to raise awareness and acceptance of the challenges associated with stormwater is difficult.

Stormwater is not the funniest word. When I meet people who don't work with stormwater, they don't understand what I am talking about. So I usually say I work with climate adaptation. They understand that concept, and can relate to the importance of it. The general conception is that stormwater and sewage is something you want to avoid, both as a concept and subject, put it into the pipes. (VAV employee).

The agencies are in agreement of the role they think the municipality should have, in the national work on climate adaptation and stormwater management. In order to achieve higher awareness in society, the Municipality of Oslo needs to invest in projects, be early adopters, experiment with alternative solutions and share their experiences with others.

Structural isomorphism, identities

There is a common understanding that stormwater management is a subject that is highly intersectoral, and that not having a silo mentality should be in focus. It seemed evident from most that each agency is unable to be groundbreaking in all areas of the theme, thus being dependent on the capabilities of the other agencies. Nevertheless, this becomes a challenge considering that there is no joint responsibility for stormwater, as the agencies all have their own field of stormwater to handle. The consensus for seeing the need for more collaboration require that no agencies point at each other in order to find the solution, argued by the inefficiency of pushing away given responsibility on others.

Acknowledgment that other agencies sometimes hold more relevant knowledge than their own is however not enough for an efficient coordination when the role allocation is experienced as vague. VAV is now trying to follow an approach of not taking as much responsibility for unclear stormwater tasks as before, and rather address a hope that the other agencies will take more responsibility.

The other agencies are responsible for handling stormwater above the ground. But then we are often the ones with the relevant technical knowledge of water. We then experience a strong expectation that we contribute and help them. That is when conflict of time is critical. The managers have duties of making sure that we are doing certain agency-related tasks, creating challenges when we disappear to help the other agencies. (VAV employee)

The many distinct professional disciplines are experienced as challenging in the initial phases of collaboration because of terminology that is interpreted wrong by those who are unfamiliar with the use of it. Employees in PBE expressed their impression that they are often misunderstood to be less cooperative because they use a technical language affected by formal rules.

An advantage is that after a while you meet the same group of people attending the different interdepartmental meetings. That develops a more personal relationship and understanding of the theme. We are often perceived as restrictive and problematic, that we give out rejections and so on. It is important to communicate why it is like this, why we state that

something is not possible. It is not because we are harsh, but it is because of something grounded in the rules and laws. (PBE employee)

A reasoning for why the groundbreaking solutions are not prioritized is the general conception that the actors in Norway have been too cautious because the theme is still fairly new. As mentioned earlier, the willingness of having a proactive approach is experienced as present in all agencies. Overarching and large preventative initiatives are however very expensive. It is believed that the municipality have to learn the hard way through experiencing the heavy rainfalls, like in Copenhagen, that gives the politicians and managers budgets to act more radically.

The Copenhagen rain created a crucial shift in the focus on the theme. It is always beneficial to have specific examples like that to use. We always want to look at what other cities are doing, like Copenhagen, Stockholm and Gothenburg. So we are of course measuring ourselves up against each other, a healthy competition between the cities. At the same time we are helping each other out. I really like working in an environment like that. (VAV employee)

At the same time as being inspired by other cities, an argument for why Oslo has been unable to do the same actions is the fact that foreign cities are often organised and limited in other ways than what the Municipality of Oslo is.

Predispositions, scripts

Through experiencing more collaborative initiatives across the agencies, there is a common belief that the synergy effects of success will result in positive developments for future collaborations. It has been argued that there is a need for far more collaboration that exceeds the simple checklists, creating the right consequences for the entire processes. Another issue acknowledged by many, but not all, is that the district administrations are not included early enough in the projects. Sagene District has expressed this as a frequent challenge that causes frustration.

The district administrations, representing the citizens, could of course be more heavily involved in the early phases. I think that they are, but they are often given an undeservedly small voice. (BYM employee)

As mentioned earlier, sharing information and knowledge across departments are considered to be advantageous, but challenging because of systems that do not facilitate for it. An overall belief is that this will naturally develop to work more seamlessly if all agencies keep working the same way that they started doing since the initiation of the Action Plan. Thus, even though it is said that lack of facilitation can limit experiences to be shared between agencies, they are taken for granted that it will evolve gradually in the right direction, and that there is a culture for knowledge sharing in the Municipality of Oslo.

When you enter a collaboration you experience it as a necessity at first. Then you experience along the way that it brings some benefits to it. The process happens to be more smooth at the end. (PBE employee)

Some employees have certain belief in the Action Plan being part of a process, and the phrase “things take time” is frequently used to defend the progress. They believe the most important contribution from plans is increased understanding of the joint challenge and each others challenges and priorities, as well as expanding networks across departments.

For every plan, we understand more and receive more input. It happens every day and is an continuous evolution (PBE employee).

The challenge is either way how to implement theory into practice, and making sure the goal of joint mindsets and responsibilities for stormwater management can be embedded in the organization throughout the different levels and agencies.

Contradictory to the agreement that stormwater should be managed with a complete holistic perspective of the city is the perception that there is little acceptance for prioritizing projects that exceeds the agency’s internal objectives and responsibilities. A VAV employee elaborated on this issue by saying that everyone

needs to give and take, but disclamation of responsibility is an extremely well developed way of managing things because no one wants to spend their budget. This leads back to how agencies end up taking jobs that are undefined, with often result in emotional friction.

We do not actually have the resources to do so, but we participate because we think it is extremely fun to influence process plans. And because we know what will not work when building cases appear, and with bad decisions comes bad building cases. (PBE employee)

We are sitting and looking at stormwater management in building cases, but what we are really supposed to do is to only have an opinion about the pipe system and whether there is space enough or not. The rest is actually the responsibility of PBE. But we are doing it as a service for them, something it seems that they have not understood. Many of the building application workers are lacking the needed knowledge about stormwater in order for them to say something about it. And they do not have the time either, they have like 90 days of waiting or something like that. (VAV employee)

Employees in VAV explain that they end up working in a grey area of roles because they think it is illogical to not spend smaller parts of the budget if that can prevent stormwater in the pipe systems. If they call it pilot projects, the acceptance is more easy to obtain.

Summary of cultural-cognitive barriers

P3: Best practice interdepartmental collaboration strategies require changes in logics to overcome institutional barriers for climate adaptation.

From the third proposition, we assumed we would observe five cultural-cognitive barriers to climate adaptation; lack of community engagement, limited empowerment and participation, lack of information, knowledge and understanding, technocratic path dependencies and lack of political and public will. There are several deeply embedded logics both within and across the agencies. The “right person” and engagement from employees in the agencies have been both a facilitator and impediment to climate adaptation in collaboration projects on

stormwater management. Certain sub-cultures in the agencies create engagement, while others create conflict and reluctance. This affects the will to participate and collaborate. Empowerment is also influenced by a lack of awareness and consciousness, which was an addition to our original expectations.

The lack of knowledge and information about the advantage of each others' specific expertise, has also proven to be a barrier to climate adaptation. Several employees have expressed different mindsets as challenging when collaborating on projects. What was surprising to find, was that there was not just interdepartmental differences, but also intradepartmental ones. Technocratic path dependencies are related to this, as there exist a great variation of disciplines in the agencies related to stormwater management in the municipality, and it has proven to be difficult to communicate across technical fields. The lack of public and political will is crucial in the Municipality of Oslo, because acceptance for climate changes is difficult to obtain. In order to implement theory and plans into practice, collaboration projects must be embedded into politics and management.

SUMMARY OF FINDINGS

Through the findings which are presented above, we have discovered a set of phenomena that in the section of analysis will be discussed in the light of existing theory. See table 1 for a summary of the identified phenomena.

Barriers	Regulative	Normative	Cultural-cognitive
Symbolic systems	Funding and budgeting Legal framework	Expectations Priorities Coordination Perspective	Engagement Innovation Competence Awareness Empowerment
Relational systems	Formal channels Bureaucracy Hierarchy	Channels for collaboration Instructions from above Goal management	Technocracy Silo mentality Holism
Activities	Demand to agencies Demand from agencies	Involvement Responsibility Knowledge Experience	Communication Interaction Acceptance Commitment

Table 1: Summary of phenomena.

ANALYSIS & DISCUSSION

This thesis has set out to research the question; *What interdepartmental collaboration strategies in municipalities are required to overcome institutional barriers for climate adaptation?* In order to further explore if the findings can contribute to the development of an understanding of how, why, and where changes for a more sustainable practice of climate adaptation must occur in the Municipality of Oslo, we will now analyze the findings in the context of existing literature.

WHAT ARE THE BARRIERS TO CLIMATE ADAPTATION?

In this section we aim to further explore the identified institutional barriers by discussing why they exist and where the changes are required to occur in order to overcome these barriers. We will first discuss the identified barriers in the light of the four mechanisms that affect change presented by Thornton and Ocasio (2008); institutional entrepreneurs, event sequencing, structural overlap, and competing logics. These concepts will help our efforts of making sense of why they can be considered as barriers. At last we will discuss the impact of complexity and pace, and why these are considered to be challenging the change processes as well.

Institutional entrepreneurs

A common experience among all participants is how the change process is dependent on including certain key employees in order for projects to evolve in the most efficient way. Research on institutional agency cover these topics by the elaboration on institutional entrepreneurship; when actors with a special interest in certain institutions are able to either change existing institutions or create new ones by exploiting resources available (Maguire, Hardy & Lawrence, 2004). This demands that the actors are preferred to have both interest and the ability to influence the institution. A general conception is that there are many employees on the lower operational levels with high degree of enthusiasm and interest for managing stormwater in innovative ways, but that they do not possess the authority that is needed for making changes as required. On the other hand is the experience of being met with a lack of interest by the managerial and political levels that in contrast are given the mandate of affecting processes if needed. This is backed as a barrier for change by researchers; “Dominant actors in a given field may have the

power to force change but often lack the motivation; while peripheral players may have the incentive to create and champion new practices, but often lack the power to change institutions” (Garud, Hardy & Maguire, 2007: p. 961).

Even though our research have identified many enthusiastic employees in all agencies, these actors have not been able to fully pass on new common logics to be adopted by employees across agencies and across levels within agencies. This is argued to be especially challenging for such actors, as they have to create new suited environments that make sense of the new logic (Thornton et al., 2015). A possible explanation for this can be how institutional entrepreneurs often are too embedded in existing practices, even though they are aware of the changes happening (Hardy & Maguire, 2008). This challenge, known as the paradox of embedded agency, has been explained to bring difficulties to those especially with lack of access to different experiences and fields (Garud et al., 2007). Such theories emphasize the importance of breaking the silo mentality and searching for inspiration and new information outside the employee’s agency, and even outside the municipality. It was however experienced as challenging in the Municipality of Oslo to prioritize such external actions of analyzing and bringing in new knowledge.

Those employees who possess special levels of knowledge and interest on the subjects of stormwater, often referred to as ‘the water people’ or ‘the green ones’, seem to be too focused on the issue that they are the only ones with the required awareness. They have not successfully shared their knowledge to other agencies or to the public. Stormwater is still a subject that is unrelatable for most that are not directly affected by it, and so there is a need for increased awareness and knowledge. Contrasting to ‘the green ones’ are the employees and sub-departments in the agencies that are referred to as ‘the gray ones’. Initiatives such as the Action Plan has given new stormwater related jobs to these actors who now hold different responsibilities than earlier. However, their level of engagement and knowledge is not increased in line with changes in roles. A barrier is then the lack of understanding of why commitment to these initiatives are crucial, and stormwater management is looked at as a demand. These employees are more likely to perceive stormwater management and collaborative projects as forced and this empowerment may thus lose its value.

Structural overlap

Initiating the Action Plan and more collaborative work across the agencies over the last years has demanded that activities and jobs are coordinated in new ways than prior to the shift of focus on stormwater management. Having in mind that the previous role allocation concerning stormwater has been unclear and fragmented, it would not be possible to implement the Action Plan without rearranging the responsibilities. Challenges have then arisen in the efforts of creating new structures because of difficulties with deviating from the old ones that are strongly embedded as routines and habits. Literature has pointed at these processes as structural overlap; when organizational actors face opportunities and challenges of institutional change because of divergent cultures being forced into association with each other (Thornton & Ocasio, 2008). However, it seems that the challenges have overshadowed the opportunities in many parts of the implementation of more interdepartmental collaborations in the Municipality of Oslo.

Despite the purpose of the Action Plan to delegate new and more distinct responsibilities, there are still many employees that express uncertainty of what the roles actual are. It has previously been the informal responsibility of VAV to manage stormwater, but a lot of these tasks are now formally given to PBE and BYM instead, demanding that VAV focus on a more narrow set of tasks. Employees in PBE are however still in the belief that VAV are the ones holding the most suited specialized knowledge, and thus expecting them to take initiatives of involvement, even though the authority lies mostly within PBE now. This is linked to the concerns of being given tasks that are not aligned with the internal agency disciplines, creating uncertainties for how to handle complex issues.

Further are the observed misunderstandings of where the different roles are delegated, as we have seen that many are not aware of the responsibilities and thus having assumptions based mostly on the traditional role delegation of VAV doing most. VAV is on the other hand reacting on the new roles by actively attempting to take a step back and not taking on any extra projects. Thus, the original problem of tasks not being caught by any agency is still not solved because of overlapping and poorly communicated responsibilities.

The agencies are highly distinct in terms of disciplines and focus areas that they are instructed to prioritize. Internal values and standards are coherently differentiated, and it became evident that most are lacking the understanding of what those are in the other agencies. The silo mentality is again a barrier in the sense where an agency is unable to see the full potential of the other agencies, which prevents efficient coordination of involvement from all required parts. Thornton and Ocasio (2008) explains that embeddedness and constraints are increased in cases where actors are unable to have contact with institutional logics across multiple organizational fields. This notion would in our case emphasize the barriers that occurs when agency employees are too focused on their internal agency culture, thus missing out on the opportunities of experiencing the real culture in the other agencies. Increase in such crossagency experiences would make it easier to work as an institutional entrepreneur with actions towards change. Another layered barrier linked to this is how some employees are unaware of which individual actors at what levels that possess the official power of making a change. An observed result of this is an attitude that leads to tasks not being done by anyone.

The overlapping structures and responsibilities are mostly considered as a barrier instead of an opportunity, which is explained by the lack of a clear cut overview of all the different roles related to stormwater management across the agencies. The Action Plan is by many considered to be inadequate for a holistic perspective to evolve. There is also a demand for guidelines with the purpose of being followed by every involved part, in order for making sure all are aware of their own and others' responsibilities. An additional barrier to align responsibilities and new roles are the regulations and budgets that instruct each agency to prioritize their own results and objectives.

Event sequencing

Another barrier we have found to why changing the approach of stormwater management is challenging is the need for larger incidents and specific initiatives to happen. Our findings encompassed the concern of a general low awareness and interest on stormwater both among municipal employees and citizens. Projects are as a result slowed down or prevented because of knowledge levels not growing at the same speed as the need for strategic initiatives. Getting acceptance from top

managers, politicians, and the public is difficult because it is competing with a vast amount of issues that are more familiar. A change in how the more peripheral actors and entities perceive the issue of stormwater is thus crucial. This would require a transformation in how cultural symbols and structures are interpreted with relation to stormwater and climate challenges, through unique events that create attention to the relevant issues (Sewell, 1996).

An event that is highly demanded, although with a hint of humor and humility when mentioned, is an extreme rainfall similar to what Copenhagen experienced. There is a strong belief among several employees that such a dramatic happening in Oslo is the only way of obtaining the needed attention and resources for prioritizing stormwater management in the municipality. It is not only in the top level management they are waiting for such a granting rainfall, but also on the operational levels of the agencies. The major issue when thinking that political and public will be dependent on the Oslo version of the Copenhagen rain is that such an event is not in any way possible to control, and it is impossible to say when this might in fact happen. Thus, if the rain were to happen now it would most likely serve as an excellent accelerator for changing the processes of stormwater management, but the common action of waiting for it is impeding the actions of making sure the field gets its deserved attention without natural disasters.

A crucial event that has already shifted the focus and implemented certain positive changes in culture and collaboration is the development of the Action Plan. By using several years and involving different parts in the work it served a purpose much needed for bringing the agencies together on stormwater management. It has however not been able to serve its full value in the latency of it being politically embedded. The Action Plan is thus an additional example of an event of which the employees are waiting for the impact to happen, without having any control of it as of now.

We have identified events where agencies have spoken publicly with the chance of drawing the attention towards the issues of stormwater without doing so. The theory on how event sequencing influences institutional change argues that it is dependent on how much public attention the event receives (Hoffman, 1999). However, the institutional entrepreneurs in the Municipality of Oslo have not been able to neither

create events that result in increased awareness, nor to take on the opportunities of teaching those unaware more about the issues at hand. The Action Plan is not enough to create the buzz and attention in public channels that is needed. Thornton and Ocasio (2008) argued that it is when events are occurring in sequencing procedures that they hold the opportunity of transforming the dominant institutional logic. They further explain that sequencing events increases the likelihood of more related events to happen, resulting in even stronger reinforcement of changing the logic. Because the frequency of stormwater information occurs rarely, the issue is not emphasized often enough and serves as a barrier for institutional change.

Competing logics

We have already discussed to some degree how the agencies operate with different sets of knowledge, routines and values, among other internally embedded logics. These are often experienced to collide in confrontation and overlapping each other, instead of working as complementary standards. This is coherent with what literature points to as coexisting logics; a passing situation that is solved through competition between the logics where one dominant logic ends as the one adapted (Hoffman, 1999). We have found that increased collaboration across municipal agencies has however been unable to adapt to new dominant logics that are followed by all in the context of managing stormwater.

There are several rivaling logics identified, where most of them are because of agency differences. One issue is the distinct competencies that in essence is not conflicting each other. In the manner of stormwater management however, employees in the most technical agencies especially do often fail to see the value of the practical competence of others. Each agency are confident of their own importance, but the common appreciation is often lacking. The fact that the involvement of certain agencies can be considered as a restraint instead of an opportunity creates barriers in the attempt of aligning such shared understandings into one that is collectively embedded. The logics across the agencies are thus not consistent, which contradicts with theory claiming that they have most effect when being uniform and taken-for-granted easily (Owen-Smith & Powell, 2008).

The confusion and misunderstandings concerning responsibilities and roles have resulted in VAV taking on more jobs than authorized because of their belief that the other agencies are not fulfilling their roles. On the other side is PBE and BYM, which argue that the stormwater coordination is prevented because VAV is doing too much that exceeds their responsibilities. Thus, this is another way of responding to conflicting logics besides competition; a covering behavior of continuing with the old logic in secret because of habits and discomfort with the change (Reay & Hinings, 2009). Agencies are speaking confidently about how they intend to follow the Action Plan, at the same time as they are emphasizing how the original roles are still being pursued.

We have even discovered intradepartmental differences, which raises the issue of how it is possible to coordinate shared understandings across agencies if they are not even consistent internally within each agency. This is supported as a problem when argued that having several competing logics active in the same setting can create conflicts, and even the generation of new set of activities (Owen-Smith & Powell, 2008). One activity in particular that entailed many conflicting perceptions on how it should be done is the communication efforts across agencies and authority levels. Some were consistent in following the formal lines of reaching out to other entities as the only possible way, even though these processes were known to demand a lot of time and waiting. Others experienced that these rules were only a formality and that one must go beyond them in order for any implementation to happen. Employees are thus making sense of rules and routines differently. Some employees demand more strict rules and routines in order to make sure all agencies follow the same procedures, but such regulations would at the same time prevent the type of collaborations ‘outside the box’ that is often initiated by the most enthusiastic employees.

Complexity and pace

As a huge overlaying and lurking barrier that municipal employees are pointing at is the bureaucracy system and regulations. They are also using the complexity of the organizational form as a defense for why they cannot work in alternative ways, because ‘that is how things have always been done, so there is probably a reason for it’. The shift in focus on managing stormwater over the last years is a quite

radical change, at least when considering the allocation of new roles and actions. Combining this with our previously discussed issues of employees not being fully aware of their new responsibilities results in difficulties for implementing the changes that are initiated (Battilana & Casciaro, 2012).

We consider initiatives such as the Action Plan to originally be of transformational nature, because of how it demands a radical change from the status quo of stormwater management. Despite the vast amounts of efforts invested in its development, the progression is slowed down by the long time for political acceptance to be a reality. The process of the Action Plan is then in fact becoming developmental instead of transformational because it lacks enough increasing positive returns and elaborations (Micelotta et al., 2017). This have resulted in employees placing the changes into their traditional institutions, instead of actually transforming their culture of work.

HOW TO OVERCOME BARRIERS TO CLIMATE ADAPTATION?

After analyzing the barriers to climate adaptation in the Municipality of Oslo, it is also imperative to discuss what efforts should be considered for overcoming institutional barriers. This section will explore the concept of institutional work, with special regard to the role of institutional entrepreneurs and institutional logics for achieving change in institutions. More specifically, we analyze the framework of strategies for responding to institutional change by Oliver (1991) and with regards to the efforts done and efforts needed for the Municipality of Oslo, as well as discussing the Adaptive Cycle of Ferguson et al. (2013) in order to investigate the impact of shifting institutional pillars with phases of adapting to change.

Since institutional logics are deeply embedded in time and space, the change of logics is dependent on institutional work being performed both externally and internally simultaneously, while also initiating and responding to activities as the changes occur (Gawer & Philips, 2013). Preservation of practice is how logics become institutionalized, and continuous work is therefore the key to obtaining acceptance and implementation of new or changed practices (Zucker, 1988). As briefly explained in the reviewed literature, Oliver (1991) proposed in his article *Strategic responses to institutional processes* that there are five ways of how

changing logics result in responding institutional work; acquiescence, compromise, avoidance, defiance and manipulation (Table 2).

TABLE 2
Strategic Responses to Institutional Processes

Strategies	Tactics	Examples
Acquiesce	Habit	Following invisible, taken-for-granted norms
	Imitate	Mimicking institutional models
	Comply	Obeying rules and accepting norms
Compromise	Balance	Balancing the expectations of multiple constituents
	Pacify	Placating and accommodating institutional elements
	Bargain	Negotiating with institutional stakeholders
Avoid	Conceal	Disguising nonconformity
	Buffer	Loosening institutional attachments
	Escape	Changing goals, activities, or domains
Defy	Dismiss	Ignoring explicit norms and values
	Challenge	Contesting rules and requirements
	Attack	Assaulting the sources of institutional pressure
Manipulate	Co-opt	Importing influential constituents
	Influence	Shaping values and criteria
	Control	Dominating institutional constituents and processes

Table 2: Strategic Responses to Institutional Processes (Oliver, 1991: p. 152).

Acquiescence

Acquiescence, or acceptance, describe the most passive form of adapting to change, where an organization expects that conformity will be aligned with one's own interests, or the organization is unaware of its own conformation and the institutional processes involved. There are three ways in which an organization accede; through habitualized adaptation, mimicry of other actors in the environment, or compliance to new norms and routines (Oliver, 1991).

In the Municipality of Oslo, there exist many illustrations of the process of acceptance of change, especially with regards to the Action Plan. As we learned from the findings, the phrase "things take time" is commonly used when it comes to defending the progress of the Action Plan and stormwater management practices. The employees of the Municipality of Oslo are used to the time constraints of bureaucratic processes, and when the Action Plan is not politically adopted, they accept the delays as part of the process, and use the Action Plan as intended either way. They take it for granted that the Action Plan will eventually become a regulatory framework, and thus advance their routines without structural influence.

This process is most likely influenced by the institutional entrepreneurs, in the sense that those involved in the creation and initiation of the Action Plan and Strategy Plan started using the plan as if it was embedded in the organization, and therefore it became embedded when others began to imitate their behavior. When the enthusiastic “water people” speak high and loud of the Action Plan, inviting to meetings and discussions and collaborative efforts, the practice spread through the organization. The acceptance of the Action Plan has been integrated into stormwater management, and compliance can also have been a strong factor for achieving such. The people that were not necessarily involved in the work on the Action Plan initially, have been aware of the issues in the organization, and see the challenges with interdepartmental collaboration. Therefore, they have awaited initiatives addressing such challenges, and therefore acceptance came rapidly when introduced due to its manifest seemingly aligning well with general interest in the organization.

The Action Plan provides a great example of how the process of acceptance may work, and should be considered for future implementation of stormwater management practices in the municipality. Having an active awareness of the present shared understandings and interests of an organization, as well as appreciating the potential influence of central institutional entrepreneurs can streamline the process of achieving acceptance. However, routines and practices that are accepted under wrong assumptions, self-serving interests or unconsciously adopted may not provide the organization with best practice routines and habits, and inefficient institutional logics may dominate.

Compromise

The second form of strategic response to institutional change is compromise (1991). This form describe how organizations may deal with inefficient logics derived from blind acceptance, where the organization try to balance, pacify, or bargain with inconsistent or conflicting interests in the organization (Oliver, 1991).

The tactic of balancing the expectations of multiple interests in the organization can be exemplified through the divergence of interest between VAV and PBE with regards to granting importance to stormwater management. PBE was long

convinced that the only purpose of stormwater management was finding runoffs for the water, a demand. VAV has made several efforts to inform and communicate the potential synergies and added values of stormwater management, such as aesthetics and environmental gains. When PBE saw the potential for architectural creativity, the resistance to new practices were heavily reduced, and they actively assisted with alternative solutions to stormwater management.

Another way to achieve compromise to institutional change, is the tactic of pacification. This tactic is shown in the context of the Municipality of Oslo through the impediments to collaboration efforts from top level management. The lack of joint objectives, separate funding systems and budgets are a clear barrier to collaboration projects for increased climate adaptation. The Action Plan is a step in the right direction, and a form of pacification, but the Municipality of Oslo need to develop practices for aspiring to the same set of objectives. The issue of stormwater management is affecting all the agencies, and if they continue to serve separate interests, the practices will continue to be inefficient. Top level management must serve the same agenda, and align their priorities in order to be able to overcome the institutional barriers found in our case.

A more active form of pacifying, is the tactic of bargaining. The findings reported that contracts and strict rules were a form of achieving more well-functioning collaboration, and contracts are used as a form of bargaining with developers to achieve joint stormwater management efforts. Changes to the regulatory frameworks may influence the adaptability of the organization with regards to collaboration. Finding the compromise between external and internal interests, both interdepartmental and interorganizational initiatives can increase their ability to adapt to climate changes.

Avoidance

The third form of strategic response to institutional pressures, is the response of avoidance. Oliver (1991: p. 154) define avoidance as “the organizational attempt to preclude the necessity of conformity; organizations achieve this by concealing their nonconformity, buffering themselves from institutional pressures, or escaping from institutional rules or expectations”.

Organizations practicing concealment pretend to conform in order to continue serving its own self-interests. In the Municipality of Oslo, this tactic is used in order to avoid the strict rules on investment limitations, for instance. As the findings illustrated, institutional entrepreneurs in VAV believe the regulations on their budgets to only include initiatives concerning the sewage system is inefficient, due to the fact that water above ground affects the pipelines and become an economic responsibility for them either way. Since they are not allowed to invest in projects above ground, they have learned that projects receive acceptance from management if they are called pilot projects, with the insinuation that it is a limited amount of resources requested for the implementation and consequences of the project. However, if the project is successful, the project managers in VAV will apply for further implementation of the solution in other areas and projects later on. Thus, they use this tactic to avoid the regulatory framework in order to preserve their interests and implement solutions that would never have been initiated another way.

Another avoidance tactic is buffering, which concerns the practice of separating internal work activities from formal structures and external assessment to better achieve efficiency. Since the Municipality of Oslo is a public office, internal work activities must be open for public assessment, and therefore this tactic is difficult. However, it could be argued that the disregard of formal communication practices mentioned by the employees of the municipality is an example of buffering in the public sector. From time to time, the employees directly contact known coworkers in other departments to avoid the bureaucratic impediments of formal channels, which is supported by managers for less extensive activities. However, it is significant that the routines and expectations from top level management is clearly defined, which is pointed out as subject to improvement from operational workers in the agencies.

The last tactic of avoidance is escaping, which implies significant alterations to own objectives, activities, or domain so that one can avoid the necessity of conformity of an institutional logic (Oliver, 1991). An example of this tactic, is how VAV explain the difficulty of regulating the sewage system due to developers avoiding the system. Developers try to be smart, and avoid applying for access to the sewage system with VAV, who have quite strict regulations, and instead send an application

to PBE where they state in a general sense that they will manage stormwater open and locally. The consequence is that they implement a set of shortcut initiatives that are less costly, but end up in the sewage system either way through other means that end up often being damaging to the house and grounds. In a long-term perspective, this is not beneficial for any parties, and the municipality should consider finding a way around the barrier of separate regulatory frameworks for stormwater applications with the different agencies.

Defiance

The second to last, and second to most aggressive, strategy for responding to institutional logics, is defiance. There are three tactics of defiance; dismissal, challenge, and attack (Oliver, 1991).

The first one is called dismissing, where norms and values are explicitly ignored. From the findings, we learned that VAV often feel the need to step outside of their jurisdiction, the sewage system and pipelines, in order to ensure management of stormwater challenges. They see it as a service to other agencies, because they possess the best technical knowledge of the field. However, PBE has expressed irritation towards such practices, because it contributes to confusion about the role allocation of stormwater management, which is confirmed by confused employees with BYM. The Action Plan has been a step in the right direction, but keeping to the old institutional logic of VAV always being involved at the same time as the Action Plan has assigned responsibilities to other agencies, is hindering the new logic to establish itself in the municipality. PBE has been assigned the coordination responsibility, and received funding for a position to be in charge. It is imminent that this position can take over the responsibility of ensuring a holistic stormwater management practice in the municipality, relieving VAV of that felt responsibility, and working towards more efficient, collaborative stormwater management practices.

Another tactic of defiance, is challenge. In the Municipality of Oslo, there has existed silos of mentalities for a long time, separated into those who want to manage stormwater in open streams and above ground, and those who want to manage it under ground in pipes and the sewage system. The “water people” who function as

institutional entrepreneurs, have managed to turn the municipality around in many ways the last five years, by challenging existing, deeply embedded logics. Stormwater management is difficult to understand, and it is in constant competition for funds from school system, kindergartens, geriatric care etc. To gain priority to the field is challenging, especially without a crisis to guide the awareness.

This also relates to the last tactic of defiance, attack. As of now, challenge is the most suited and used tactic, with constant pressure from dedicated people in the agencies. However, *when* the day comes that Oslo is hit with a “Copenhagen rainfall”, the priority of stormwater management must go up, as damages will be costing the municipality billions of NOK. The reactive management practice of today will be insufficient, and thus the municipality should consider prioritizing preventive measures before such an incident. The largest, and probably untouchable, barrier of unavailable funds for preventive measures makes it extra important for the Municipality of Oslo to establish best practice collaboration efforts that will facilitate decreasing costs and increase the amount of feasible projects.

Manipulation

Oliver’s (1991) last strategic response to institutional processes, is the response of manipulation. There are three tactics for manipulation; co-opting, influencing, or controlling (Oliver, 1991).

The tactic of co-opt can be found in the establishment of the Green Technical Forum. Green Technical Forum is a board of advisory on climate related projects and challenges, in which the top level management of each agency is represented. They have regular meetings to discuss coordination of activities, and function as an intermediary between the project managers and the City Government. When proposing the initiation of a new stormwater project, project managers in the agencies send the proposals to Green Technical Forum, who then evaluates the priority of the project up against other agency activities, and then request an instruction from the City Government for the project to be prioritized. By coordinating and collaborating, the process of initiating projects and getting them accepted has become much easier, but it is still room for improvement. The forum

is affected by separate goal management with the different top level management representatives, and they all answer to, and try to influence different commissioners in the City Government. In order to manipulate the political agenda, the agencies must align their agendas to demonstrate more impact.

The second tactic of manipulation, is influence. The Municipality of Oslo is dependent on public opinion, because it is a public office. VAV, BYM and PBE have all experienced the effect of resistance in neighborhoods in development, for example the complaints about excavation projects, or other projects affecting the local environment. Here, the position of Sagene District is relevant to take in consideration. The district administrations are in intermediary positions between the local community and the local politicians, and have much deeper understandings of the public opinion in their area. Sagene District reported that they often are included in projects too late, or are kept out of the loop a lot of the time, and thus are unable to influence the local environment underways in the planning and execution of projects. Petty, Cacioppo and Goldman (1981) have argued that issue involvement increases a person's motivation to process a persuasive message, for example through personal communication or personal relations to the issue. This should be prioritized, as many processes could potentially become much more efficient with the support of the local community.

The tactic of influence can also be related to media management, surrounding the theme of stormwater management. In order to achieve higher enlightenment of stormwater challenges and implications, the Municipality of Oslo need to exploit opportunities for media coverage to communicate a consistent message. Rogers (1975) proposed that the important aspects of a fear appeal in designing communication, are the magnitude of noxiousness of the depicted event, the conditional probability that the event will occur if no adaptive behavior is performed, and the perceived efficacy of the recommended coping responses in averting the danger.

If the public opinion is to be influenced by media, stormwater challenges need to be relatable, and stormwater management practices need to be seen as valuable and in demand. Due to the challenges of alternative stormwater management solutions being a relatively new concept and therefore not as tested, as well as perception of

rain gardens or green roof solutions to be expensive, the added values of stormwater management initiatives must be consistently referenced. The use of technical reasoning is difficult to relate to, and does not give justice to the severity of potential damages.

Another technique of influencing behavior through communication is public commitment. If a behavior or attitude is stated publicly, it is perceived as stable and it may increase the performance of behavior consistent with the public opinion (Pallak, Cook, & Sullivan, 1980). Hence, the importance of a consistent message across several voices of opinion. The synergies from aligned messages from politicians, agencies and the district administrations could have major impact on public opinion. A mindset for adaptation in the public would also have reciprocal effects for the City of Oslo. Not only does it help the municipality with gaining acceptance for projects and less resistance to changes, but increased focus on climate adaptation and stormwater management with citizens of Oslo could influence the demand on developers to change their practices to include more robust and long-term solutions, which in turn helps the municipality to regulate and monitor sewage systems and stream management as well as provide a more sustainable city for the citizens.

Conformity or resistance to institutional logics are affected by both the willingness and ability of an organization to conform to the institutional environment. Willingness to conform is bounded by the legitimacy of the present institutional logic, the political self-interest of institutional entrepreneurs, and efforts to remain in control of processes and activities in the organization. The ability to conform is bounded by the capacity necessary to meet requirements for institutional change, the alignment of conflicting institutional logics, and the awareness of institutional expectations (Oliver, 1991).

The Municipality of Oslo has, for the last five years, undergone some changes with regard to stormwater management practices, with the creation of a Strategy Plan and Action Plan to better collaborate for best practice management. However, there exist strong indications that many institutional logics in the different agencies are deeply embedded, and that bureaucracy is making adaptation to change slow. The different institutional entrepreneurs have conflicting logics, both horizontally and

vertically across departments and levels in the organization. The lack of resources, both human capital and financial capital, is to a large degree restricting changes and alternative ways of thinking. Silo mentality is a known concept in the organization, and awareness of the impediments to the mentality is present. However, the systems and structures for prioritizing and investing in collaborative projects are still favouring separate practices and self-serving behavior.

Selective Coupling

Another strategy for responding to institutional change is selective coupling, proposed by Pache and Santos (2013). Selective coupling is a responsive strategy intended to process competing institutional logics in an organization. The response require strategic combination of selected elements from a pool of competing institutional logics.

The agencies of the Municipality of Oslo all inherit their own strengths and weaknesses for stormwater management practices, and if the municipality could be able to combine the best practices of each agency in order to reduce the inefficiencies within each agency, a superior stormwater management practice could emerge. For example, the structure, system, and process oriented approach of PBE could help the other agencies with transferring knowledge and experience across steps in the process. VAV possess in-depth stormwater knowledge that the other agencies could learn from to improve their responsibilities, together with a pool of enthusiastic institutional entrepreneurs to influence feasibility of projects. BYM, being such an interdisciplinary agency, have a lot of experience with different projects and development experience. Sagene District has the connection to local community and politicians. These attributes combined together could eliminate some of the regulative, normative and cultural-cognitive barriers to efficient climate adaptation in the municipality, such as confusion, lack of awareness and engagement, or dispersed regulations and sanctions.

The Adaptive Cycle

By analyzing our findings in the light of the adaptive cycle, further suggestions for how the Municipality of Oslo can enable changes in practices for stormwater management can be made. It is argued that institutional change is driven in

sequential shifts of the cultural-cognitive, normative and regulative institutions of an organization, and it is dependent on the ability to target the right institutional pillar in the right phase (Ferguson et al., 2013). The model's three steps of adapting to change is taken in consideration; preparing for change, navigation of transition, building resilience.

The stormwater management practice in the Municipality of Oslo has had success in creating a lot of awareness and gaining support among certain environments of the organization over the last five years. The introduction of the Strategy Plan and Action Plan has set in motion processes of knowledge development and shared networks across the agencies, as well as developed an understanding with top level management that stormwater need more priority in the future. However, it could be argued that the municipality has lacked a window of opportunity for implementing best practice stormwater management.

Even though stormwater has been recognized as a legitimate problem in the organization, there are still challenges with the availability of solutions due to the complex prioritization and strict regulatory framework for investment and budgeting. This is also connected to the lack of good timing in the political climate, as the lack of a stormwater crisis makes it difficult to change the aforementioned regulatory framework. If the Municipality of Oslo wish to enable proactive changes to their practices, it is important that they continue working towards alignment of the problem, solution and politics. This is easy said, not so easy done, but with continued efforts towards developing knowledge, networks and management in the agencies and City Governments, eventually the shared meanings become taken for granted across vertical and horizontal levels of the organization, which further will contribute to the ability to navigate towards implementation of more clear routines and roles on stormwater management.

In the long run, successful routines and practices should enable the institutional entrepreneurs to influence on higher levels, and building legitimacy for change in rules and laws surrounding stormwater management. As was proven in the findings, initiating successful alternative management practices in VAV enabled the agency to get support for continued practices on responsibilities outside of their jurisdiction. If the agencies can create a strong enough network to share knowledge

and experience, the number of successful initiatives should increase, and furthermore enable the agencies to gain support from higher levels of the organization. It is important to not try to enforce new practices without first gaining legitimacy from the right authorities, which could be argued has been a problem with stormwater management in the past. If the institutional entrepreneurs of the different agencies can work the same agenda, it will have more power for enabling change, than if they work their self-interests separately.

CONCLUSION

KEY IMPLICATIONS

The aim of this master thesis is to contribute to the literature on institutional change for climate adaptation. By providing an empirical study on the barriers to climate adaptation in stormwater management and how to overcome them, we believe we have contributed to the identified research gap of how, why and where changes need to happen for more sustainable adaptation. By identifying the institutional barriers, we could systematically analyze and conceptualize the challenges and opportunities present in the Municipality of Oslo.

By using the concepts of institutional logics and institutional work, we have identified several implications for managers. Institutional entrepreneurs, in our case defined as either the most dedicated and enthusiastic operational employees, or the top level management, can be a resource in changing institutional logics because they are influential by having ability and/or willingness to act. However, it is important to be aware of self-serving interests that may serve old, and inefficient logics, which can be avoided by clear role allocations, expectations, and rules.

Interdepartmental collaborative efforts are impeded by unaligned priorities and objectives by top management, so top management must be aware of the power of unity for best practice stormwater management. Joint efforts can help gain legitimacy for new and alternative strategies for climate adaptation, which is imperative for an organization with strict and limited investment funds. Not only intraorganizational legitimacy for stormwater management is necessary, also

external legitimacy. Stormwater is a collective challenge and responsibility, with personal, organizational, political and societal consequences. Collaboration is necessary for efficient management, and thus awareness become important. Aligned agendas and consistent message in both intra-, interorganizational, and public channels can contribute to increased acceptance for the necessary measures.

The Municipality of Oslo has managed to gain awareness in certain environments by building knowledge, creating informal networks, and developed managerial abilities, but still lacks available solutions and political legitimacy in the organization. The institutional entrepreneurs of the organization must continuously work towards aligning their agendas and build interdepartmental knowledge and networks in order to achieve a window of opportunity on both organizational and political level. If they try to implement new practices and routines without support from shared understanding embedded in all the right environments of the organization, the process of change will be slow and met with much resistance. If the municipality manage to build legitimacy, the informal networks will become formal, and the knowledge and abilities can result in managerial and operational intentional change.

IMPLICATIONS FOR THE MUNICIPALITY OF OSLO

Our analysis pointed at how institutional change can be implemented within the Municipality of Oslo in the light of theoretical arguments. Based on this, we are also concluding with a set of more practical recommendations for how the Municipality of Oslo can adapt to climate change and stormwater management in collaboration strategies.

We believe that today's system for collaboration across agencies on stormwater issues is structured in a way that gives incentives for silo mentality instead of encouraging collaboration efforts. More defined coordination for activities that exceeds each agency would be beneficial, and should be implemented in structured plans and objectives that serve a joint purpose for stormwater management. One action for approaching collaborative incentives is implementing an interdisciplinary steering committee that is given mandate for the holistic perspective on stormwater issues in Oslo. As a solution to employees being prevented to collaborate due to

agency budgets, we suggest that the work of such a group would be more efficient if given its own investment budget that is independent from the separate agency budgets and goal management.

Stormwater projects should always aim for early involvement of the relevant actors and agencies, and we see it as important to keep all parts involved and informed throughout the stages of the project of which their participation is fruitful. A stronger focus on this approach would likely lead to more legitimization and acceptance from the included agencies, which is crucial to achieve from for instance the district administrations as they are the link to gaining legitimization and acceptance from the citizens. This strategy would further benefit from more defined routines for knowledge sharing and evaluation across agencies in order to ensure that the different specializations are being fully utilized. VAV possess unique and valuable competencies on wastewater and stormwater, PBE is considered to be highly skilled managing processes and plans, while both BYM and Sagene District are used to working with interdisciplinary actors across entities. These competencies are complementary and would provide beneficial solutions with more clear facilitation and coordination for information flow across agencies.

We consider it to be a need for implementing projects that can serve as exemplifications for how stormwater can and will affect the city as a whole, as well as affecting the citizens. A step towards increased knowledge levels can be to launch information campaigns and having heavier focus on talking loud about both the challenges and opportunities regarding stormwater in Oslo. Such actions could result in increased awareness on the issues and on the fact that managing stormwater is not only the responsibility of the municipality, but also of construction companies, landowners and citizens. This approach does however demand a more uniform shared understanding across the agencies on how to present the concept of stormwater in internal and external channels.

The aim of these recommendations is to provide guidance for future projects, such as project Torshovdalen. If the municipality implement suggestions from our analysis, and proves successful, the evaluation of the project may serve as an exemplary case of institutional management in complex interdepartmental collaboration projects in a municipality.

LIMITATIONS AND FUTURE RESEARCH

There are certain limitations connected with the research design of a single-case study that should be addressed. Our study investigated selected agencies within one single organization, The Municipality of Oslo, in relation to the very specific case of project Torshovdalen. It is crucial to notice that the Municipality of Oslo is a particularly complex and bureaucratic organization that cannot be compared to any of its kind in Norway. We are aware that some of the actions we mention for change are limited by regulations that are strongly embedded outside of the municipality's control to affect. A limitation is thus that our findings are not generalizable to other organizations or contexts outside of stormwater management in the Municipality of Oslo. We do however believe that the findings are of value for similar projects within the municipality, and that our research can be used in, for instance, the further projects of opening Torshovbekken in addition to the concentrated area of Torshovdalen. To some degree, it can also be transferred to collaborative projects within the municipality in other areas than stormwater management, as most of our findings are based on general conceptions of interdepartmental processes and practices in the municipality.

The interviewees in our research were selected with the purpose of including those employees that are central in the work of stormwater management to gain the best knowledge about the concept. Although we believe this approach gave us the most relevant data, it can be considered a limitation that these are also representing the most enthusiastic actors in the topics of climate, water and stormwater, and thus excluding possible different views of those who were not included.

Following one framework for data analysis can be considered a limitation when concerning the chance of only using the original framework without searching for alternative solutions. Our purpose was however not to use the chosen method for testing the framework, but to combine and compare literature and findings in a systematic process. The research method of qualitative approach does not conclude results that are of statistical significance. We recommend future researchers to further test our findings through quantitative methods, and encourage investigation of other contexts, projects and geographical scope, in order to check for generalizability.

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APPENDICES

LIST OF APPENDICES

Appendix 1: Organizational chart of the Municipality of Oslo

Appendix 2: Map of Torshovbekken

Appendix 3: Institutional Pillars

Appendix 4: Institutional Carriers

Appendix 5: Interview guide

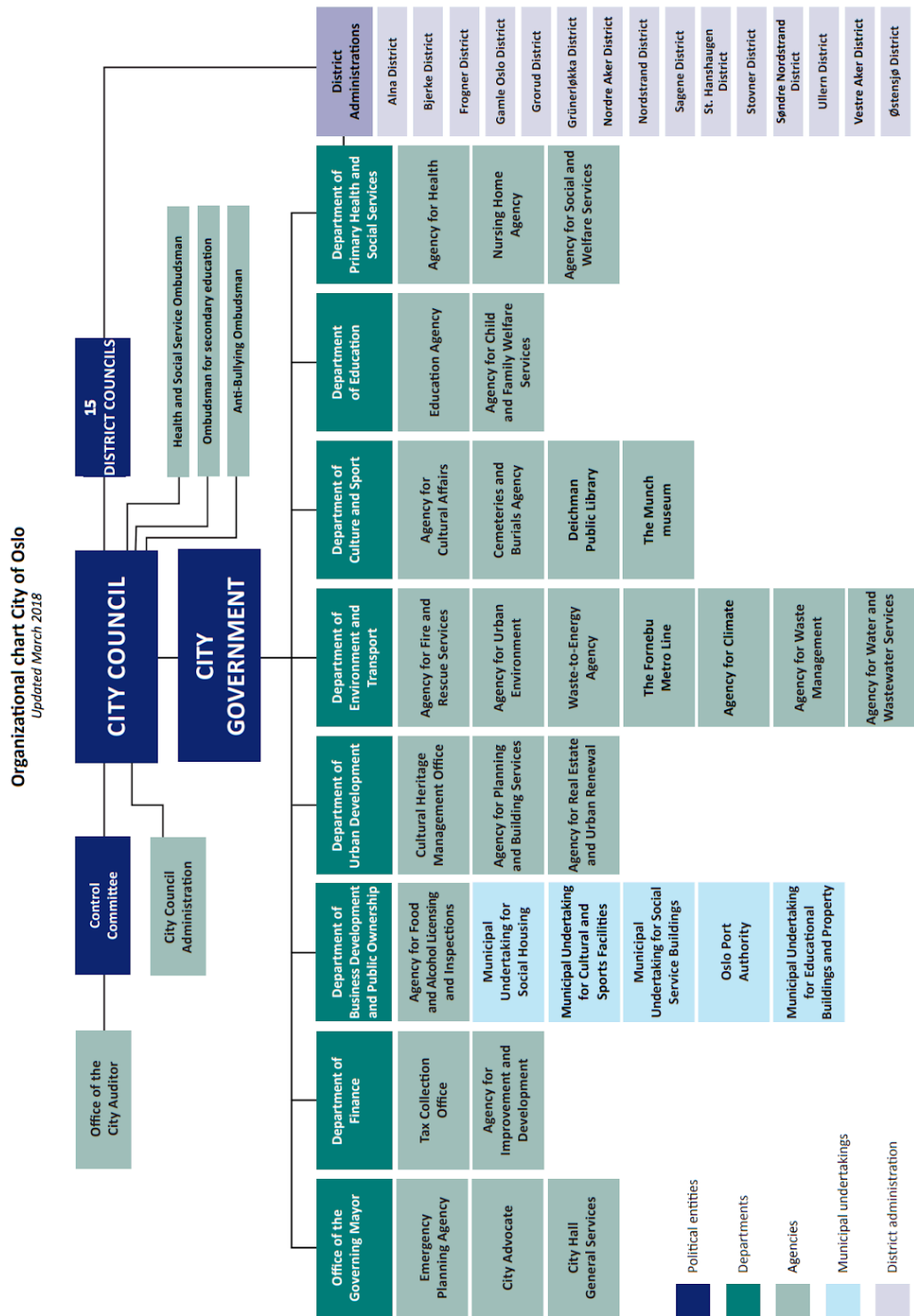
Appendix 6: List of interview objects

Appendix 7: List of data sources and documents

Appendix 8: NVivo mind map

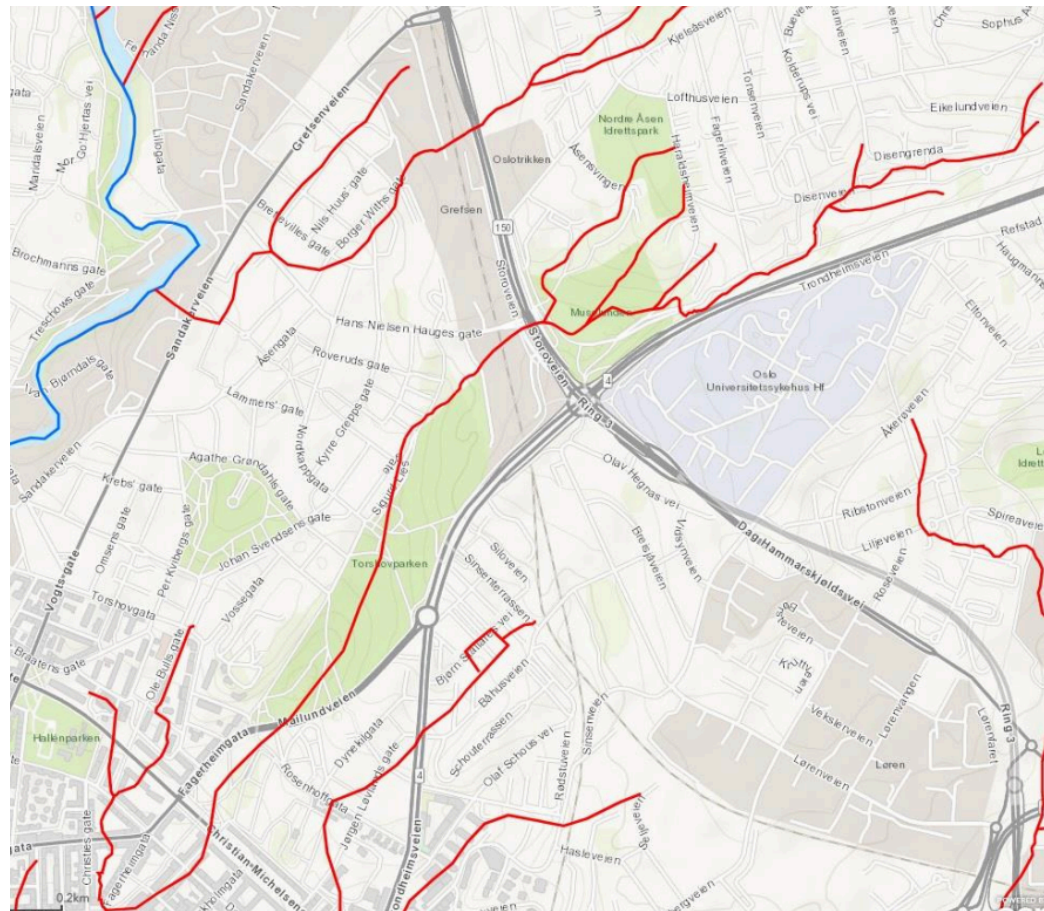
Appendix 9: Consent form

Appendix 1: Organizational chart of the Municipality of Oslo



Source: Oslo kommune. (2018). Organizational Chart City of Oslo. Retrieved from: <https://www.oslo.kommune.no/english/politics-and-administration/politics/city-governance/>

Appendix 2: Map of Torshovbekken



Source: Sagene District. (2017). *Torshovdalen i Bydel Sagene* [PowerPoint presentation].

Retrieved from: http://stormwaterweb.azurewebsites.net/wp-content/uploads/2017/12/3_Presentasjon-av-Torshovdalen-fra-Bydel-Sagene_Martin-og-Helene.pdf

Appendix 3: Institutional Pillars

Three Pillars of Institutions

	Regulative	Normative	Cultural-Cognitive
Basis of compliance	expedience	social obligation	taken-for-grantedness, shared understanding
Basis of order	regulative rules	binding expectations	constitutive schema
Mechanisms	coercive	normative	mimetic
Logic	instrumentality	appropriateness	orthodoxy
Indicators	rules, laws, sanctions	certification, accreditation	common beliefs, shared logics of action, isomorphism
Affect	fear guilt/innocence	shame/honor	certainty/confusion
Basis of legitimacy	legally sanctioned	morally governed	comprehensible, recognizable, culturally supported

Source: (Scott, W. R., 2014: p. 60)

Appendix 4: Institutional Carriers
Institutional pillars and carriers

	Regulative	Normative	Cultural-cognitive
Symbolic systems	rules, laws	values, expectations, standards	categories, typifications, schemas, frames
Relational systems	governance systems, power systems	regimes, authority systems	structural isomorphism, identities
Activities	monitoring, sanctioning, disrupting	roles, jobs, routines, habits, repertoires of collective action	predispositions, scripts
Artifacts	objects complying with mandated specifications	objects meeting conventions, standards	objects possessing symbolic value

Source: (Scott, W. R., 2014: p. 96).

Appendix 5: Interview guide

The Norwegian version of the interview guide was used in contact with the participants and when conducting the interviews.

Beskrivelse:

Dette intervjuet vil være en del av datainnsamlingen til en masteroppgave på programmet MSc in Business med fordypning i Strategi, ved Handelshøyskolen BI. Masteroppgaven blir skrevet i samarbeid med Oslo kommune, med tematikk overvannshåndtering. Oppgaven er en del av et studentprosjekt som omhandler åpning av Torshovbekken, ledet av Julia Kvitsjøen, VAV. Formålet er å se på ledelse, rutiner og handlinger for samarbeid på tvers av fire avdelinger i kommunen; Vann- og avløpsetaten, Bymiljøetaten, Plan- og bygningsetaten og Bydel Sagene.

Estimert tid: 30-60 min

1: Beskriv kort din rolle i organisasjonen.

Hvor lenge har du vært her?

2: Hvilke prosjekter for overvannshåndtering har din etat deltatt i, de siste fem årene?

Hvordan har du vært involvert?

3: Hvilke etater var involvert i prosessen og var det noen form for samarbeid?

4: Var denne prosessen et resultat av systematisk og organisert samarbeid, eller et resultat av individuelt initiativ? Hvem er det som initierer samarbeid mellom etatene?

5: Hvis du kunne bestemme, hvordan ville en ideell prosess for overvannshåndtering se ut i din organisasjon? For mest mulig effektiv håndtering.

6: Hva skal til for at man skal komme seg fra der dere er i dag, til den ideelle situasjonen du beskriver? Hva mangler i dagens situasjon, mener du?

The English version of the interview guide is translated from Norwegian and included to ensure that all readers understand the complete content of it.

Description:

This interview will serve as a part of the data gathering for a master thesis in the programme MSc in Business with major in Strategy, at the BI Norwegian Business School. The master thesis is written in collaboration with the Municipality of Oslo, on the subject of stormwater management. The paper is a part of a student project that deals with opening of Torshovbekken, directed by Julia Kvitsjøen in VAV. The purpose is to investigate management, routines and actions for collaborations across the four departments in the municipality; The Agency for Water and Wastewater Services, The Agency for Urban Environment, The Agency for Planning and Building Services, and Sagene District Administration.

Estimated time: 30-60 min

1: In short, describe your role in the organisation.

How long have you been here?

2: In what projects for stormwater management have your agency been a part, the last five years?

What was your involvement like?

3: What agencies were involved in the processes, and was there any kind of collaboration?

4: Was this process a result of a systematic and organized collaboration, or a result of individual initiatives? Who are initiating collaborations across the agencies?

5: If you could decide, how would the ideal process for stormwater management look like in your organization? In order to achieve the most efficient process.

6: What is required for changing the standards of where you are at today, to the ideal situation that you describe? What is missing in today's situation, in your opinion?

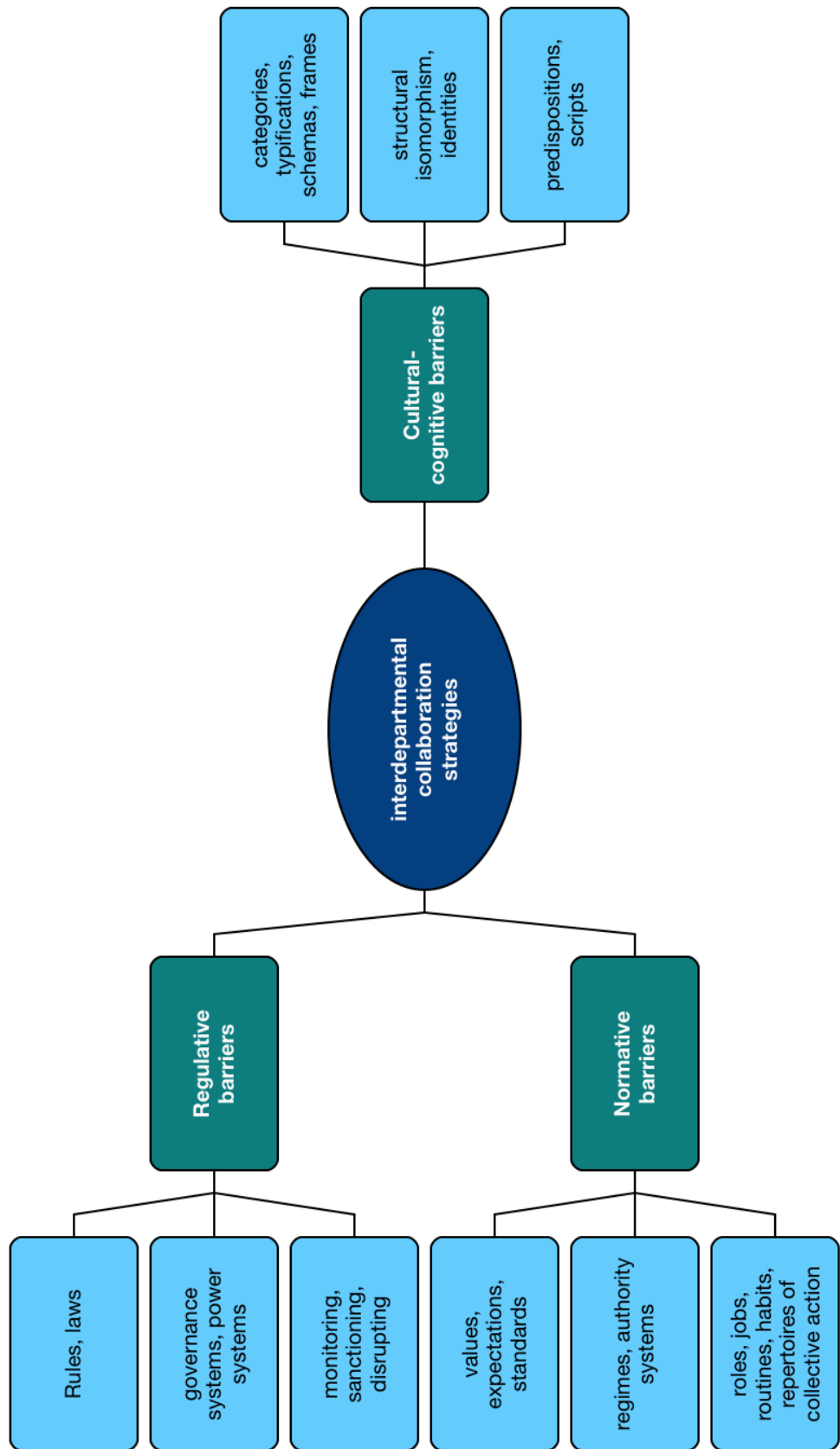
Appendix 6: List of interview objects

AGENCY	AUTHORITY LEVEL
VAV	Project level
VAV	Strategy level
VAV	Technical level
VAV	Project level
BYM	Project level
BYM	Middle management level
BYM	Project level
BYM	Strategy level
PBE	Strategy level
PBE	Middle management level
PBE	Technical level
PBE	Project level
Sagene District	Project level
Sagene District	Technical level

Appendix 7: List of data sources and documents

Title	Link
Governing Plan for the Municipality of Oslo	https://www.oslo.kommune.no/politikk-og-administrasjon/politikk/kommuneplan/kommuneplan-2015/
Strategy Plan for Stormwater Management 2013-2030	https://www.oslo.kommune.no/politikk-og-administrasjon/miljo-og-klima/vannmiljo-og-overvann/overvann/#gref
Action Plan for Stormwater Management in the Municipality of Oslo	http://stormwaterweb.azurewebsites.net/styringsdokumenter-i-oslo-kommune/

Appendix 8: NVivo mind map



Appendix 9: Consent form

Samtykkeerklæring for intervju

Beskrivelse av prosjektoppgaven

Dette intervjuet vil være en del av datainnsamlingen til en masteroppgave på programmet MSc in Business med fordypning i Strategi, ved Handelshøyskolen BI. Masteroppgaven blir skrevet i samarbeid med Oslo kommune, med tematikk overvannshåndtering. Oppgaven er en del av et studentprosjekt som omhandler åpning av Torshovbekken, ledet av Julia Kvitsjøen, VAV. Formålet er å se på ledelse, rutiner og handlinger for samarbeid på tvers av fire avdelinger i kommunen; Vann- og avløpsetaten, Bymiljøetaten, Plan- og bygningsetaten og Bydel Sagene.

Frivillig deltagelse

All deltagelse er frivillig, og du kan trekke deg når som helst. Vi bruker diktafon for intervjuet, men opptaket vil kun benyttes for intern bruk ved transkribering. Du kan når som helst avslutte intervjuet eller trekke tilbake informasjon som er gitt under intervju.

Anonymitet

Dine uttalelser kan bli brukt som sitater i vår oppgave. Uttalelsene fra intervjuet vil bli anonymisert i oppgaven. Det vil si at ingen andre enn forfatterne vil vite hvem som har blitt intervjuet, og informasjonen vil ikke kunne tilbakeføres til deg.

Før intervjuet begynner ber vi deg om å samtykke i deltagelsen ved å undertegne på at du har lest og forstått informasjonen på dette arket og ønsker å delta.

Samtykke

Jeg har lest og forstått informasjonen over og gir mitt samtykke til å delta i intervjuet.

Sted og dato

Signatur intervjuobjekt

Signatur forfatter

Signatur forfatter