In this final chapter the study is reflected upon from the perspective of the researcher. The aim of this reflection is to look back on the research and reflect how and why the used research approach worked or didn’t work. It consists of four parts: the relationship between research and design, the relationship between graduation theme and research subject, the relationship between methods of graduation lab and chosen method and the international character of the research.

Relationship between research and design

The aim of this research was to investigate the level of engagement of the property developers in the adaptation of the urban waterfronts and what influences their engagement. This was investigated with an empirical research strategy, which had a qualitative character. From the theoretical background and studied theories a theoretical framework was created. This framework formed the basis for the case studies and the analyzing of the findings.

In the beginning I didn’t make a connection between the theory and the case studies and therefore much of the focus during the research project was on the case studies. Through twenty interviews with involved actors in the waterfronts in Gothenburg and Dordrecht, a questionnaire and several policies and planning documents, a significant amount of data was available to analyze and draw conclusions from. However, these findings were not connected to the studied literature. Although the studied literature was used for the case selection, interviews and analysis of the findings, a connection had not been made explicit in the report. By going back to the theoretical background, an enhanced theoretical framework was created, that enabled me to understand the connections between the studied literature, existing theories, and the findings from the case studies.

Eventually the approach led to an understanding of the complexity in the engagement and the influence on the behavior of the property developers in the adaptation of flooding vulnerable waterfronts in Gothenburg and Dordrecht. Although the case studies remained throughout the research, the research questions, aim and method were modified. Making the research process more circular than linear. This was something I was not aware of and I assumed that when one aspect of the research was written, for example the research questions, this would not change anymore. However this was not the case and throughout the research adjustments have been made to the research design which has improved the results and the end report. In figure 66 the circular process of this research project is illustrated.

The selected case studies: Frihamnen and Stadswerven where selected in the beginning of the research after two exploratory interviews and a document analysis. Gothenburg was the starting point of the research and the selection of Frihamnen was quickly made, as the transformation of this waterfront is a major project in Gothenburg. In the Netherlands several waterfront developments were studied, to find the most suitable one for the comparison with Frihamnen. Through a brief research of Dutch waterfronts, Stadswerven was selected which is located in an unembanked area, which turned out to be a crucial aspect for the comparison. In an unembanked area the Rijkswaterstaat and the Waterboards do not have the responsibility to protect the inhabitants. These organization do not exist in Sweden and therefore the institutional conditions are quite similar in Frihamnen and Stadswerven, which enabled a comparison between the two waterfronts.
The elaborated selection of a case study in the Netherlands was important for the case study comparison. If another case study had been chosen, the comparison had been more difficult to make and this had effected the findings and the conclusions that were drawn. This illustrates how important it was to have an elaborated case study selection to avoid problems later on in the process and in the case study comparison.

The theory for the theoretical framework is partly based on the theory of receptivity (Jeffrey and Seaton, 2004) to study the willingness and ability of the property developers to adapt the urban waterfronts. This theory consist of four components: the awareness, the association, the acquisition and the application. Secondly the theoretical framework is based on several conditions that influences the behavior of the property developers which have been derived from several authors: Shearer et al. (2013), Ford & King (2015), Birkmann et al. (2010) and from IPCC fifth assessment report (2014a), these conditions are: the planning institutions, the economic conditions, the institutional conditions, the social conditions and the physical conditions.

The receptivity theory enabled me to relate the findings from the case studies with the willingness and ability of the property developers to adapt the urban waterfronts. However, the property developers in Gothenburg are in the planning phase and therefore the acquisition and application of the adaptation measures could only be based on assumptions and on the intended actions of the property developers’ engagement in adapting urban waterfronts to the changing climate.
property developers. In Dordrecht on the other hand the acquisition and application of the adaptation measures could be based on the actual actions of the property developers. Therefore the receptivity theory was more applicable to study the willingness and ability of the property developers in Dordrecht. However using another model to study the behavior of the property developers in Gothenburg hadn’t changed the fact that the behavior of the property developers in adapting Frihamnen would had to be based on assumptions.

The mentioned conditions influencing the behavior of the property developers were also identified from the case studies. However a certain feature influencing the behavior of the property developers, for example the housing demand, can be related to more conditions: the economic, the institutional and the social conditions. As well as one condition can consist of multiple features, for example the economic conditions consists of housing prices and insurances, leading to a more extended theoretical framework with more features than what I presented in the framework. The theoretical framework is adjusted after the findings, but a further divination of the conditions has not been made, because this would have been to extensive and not possible to carry out in this master thesis. Therefore I chose to keep the theoretical framework as presented in this research project. The framework after adjustments is illustrated in figure 67.

Figure 67: Framework
Relationship between graduation theme and research subject

Defining the research subject was the first part of the study. It started with an idea to solve the problems with the rising sea levels through binding the ice in Antarctica and transforming the Sahara desert into a green biosphere. However, after some considerations, I could agree with my mentor that it would be too ambitious for a master thesis. This lead to the idea of studying the development of coastal cities in a sustainable manner. However, this would have been too broad a subject. When I eventually had the idea of studying the transformation of waterfronts, I wanted to take some courses at Civil Engineering from the master Water Management to broaden my knowledge on managing and controlling water in waterfront developments. But this is not the idea of writing a master thesis at the Urban Area Development laboratory for the master Real Estate and Housing and therefore I had to refine the focus of the study into a more course related subject.

The process of narrowing down the study into a researchable and manageable subject was a challenge, because I have the tendency to deviate from the subject and end up doing a little bit of everything instead of one thing thoroughly. A second challenge with narrowing down the subject, was the fact that I had to let go of my first idea that I could solve the problems of sea level rise as well as coming up with global solutions for the development of sustainable waterfronts. Eventually with the support of my mentors I was able to narrow down the subject into this research project: the influences on the engagement of property developers in adapting urban waterfronts to the changing climate in Sweden and the Netherlands, which has been very interesting and manageable to study. This process of defining the research is showed in figure 68.

Finally the research subject relates to the Urban Area Graduation laboratory in several aspects:
- The focus of the research is on the transformation of two urban waterfronts.
- The development process with the involved actors are studied.
- The climate changes and the influences hereof on developments is the key subject of the research.

Furthermore the research relates to a growing global interest and awareness of the negative impacts of the changing climate and the need to adapt. Below a quote from the COP21 in Paris 2015 is presented, which identifies how important the engagement of multiple stakeholders is.

‘Successful adaptation not only depends on governments, but also on the active and sustained engagement of stakeholders including national, regional, multilateral and international organizations, the public and private sectors, civil society and other relevant stakeholder’ (United Nations Framework Convention on Climate Change, 2015).
Relationship between methods of graduation lab and chosen method

The data is collected through semi-structured interviews and a questionnaire. These methods of data collection are generally used at the urban area graduation laboratory. An important aspect of a qualitative research is the analysis of the data. Through coding, categories that share some characteristics can be grouped. A commonly used program to analyze data is Atlas.ti, however for this research the transcribed interviews were documented in Swedish, Dutch and English, making it more difficult to use Atlas.ti. Therefore I chose to analyze the data in excel, which enabled me to translate and immediately categorize the data that shared similar characteristics. The coding categories had a deductive character, which directly related the findings with the theory and the theoretical framework.

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<th>Property developers’ engagement in adapting urban waterfronts to the changing climate</th>
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<td><strong>Figure 69:</strong> An overview of the analysis from excel.</td>
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Although excel was an efficient way of coding the interviews, the amount of data in excel grew rapidly, and eventually some irrelevant data was also added. This could had been prevented, if I had been more selective in the parts I added to the categories in excel. In figure 69 an overview of the analysis in excel is shown.
International research

This study is conducted in Gothenburg and Dordrecht, giving the research project an international character. Both in Sweden and the Netherlands, English is a widely used language among professionals, however many of the interviewees indicated that they could express themselves better in their native language, and therefore a majority of the interviews were conducted in Swedish and Dutch. This was not a problem because of my Swedish and Dutch background and knowledge of the languages. However it did delay the process, because the interviews were transcribed into Swedish and Dutch, and then translated into English to enable a comparison and transparency of the case studies. A positive outcome of transcribing the interviews in Swedish, was the fact that I improved my Swedish writing skills very quickly.

From August until January I conducted the research at the City Planning Office in Gothenburg. The fact that I was working at the municipality in Gothenburg improved the accessibility of information on the case: Frihamnen, because the involved actors from the municipality were working next to me, as well as access to relevant policy documents and plans were given. While in Dordrecht it was more difficult to obtain relevant information on the case: Stadswerven and find the right actors for the interviews. Eventually 13 interviews were conducted in Sweden compared to 7 in the Netherlands. This led to an more in-depth understanding of the situation in Gothenburg and Frihamnen. However the aim of the research was a comparison between Gothenburg and Dordrecht, and therefore I decided to leave some gained knowledge on Gothenburg out to make the comparison more equal.

Conducting an international study can be a challenge, considering the different institutional contexts, regulations and planning processes. Due to my studies in the Netherlands I was more informed on the Dutch situation. To be able to understand the Swedish situation, I had to review the Swedish institutional context, planning and development aspects. Most of this information was only available in Swedish, which would have been a difficulty for a non Swedish speaking person. To understand the Swedish situation was a bit time consuming, however with my Swedish background I didn't encounter any difficulties in studying it. Despite the challenges of conducting an international study, it was more than worth it and the findings enlarged my knowledge on urban waterfront transformations and gave me the possibility to work with professionals in Sweden and the Netherlands.
Property developers’ engagement in adapting urban waterfronts to the changing climate
Property developers' engagement in adapting urban waterfronts to the changing climate

(Image: own photo, September 2015, Gothenburg)