



## The role of collaborative governance in integrating water safety and spatial quality in urban waterfront regenerations

*A multiple case study about the extent to which collaborative governance can contribute to the integration of water safety and spatial quality in two waterfront regeneration projects in the Netherlands: the Rijnkade (Arnhem) and the Waalkade (Nijmegen)*

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## Colofon

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## Abstract

Water management and spatial planning are inherently connected in the Netherlands. Water can be seen as a threat in spatial planning, but also as an addition to spatial quality. During the last centuries, urban waterfronts have been rediscovered and developed into places that contribute to the quality of life. Therefore, more and more urban waterfronts are regenerated. In these projects, multiple stakeholders are increasingly involved in how urban waterfronts are planned. This is the result of two trends: the shift from government to governance and the trend of urban densification. Collaborative governance can ensure successful collaboration with different actors. Collaborative governance has been defined in many different ways. In this research, the definition of Emerson et al. (2012 p. 2) is used: *the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished*

In urban waterfronts, water safety as well as spatial quality issues play a role. Realizing these goals at the same time within a project will ensure a better organization of urban waterfront regenerations and, therefore, contribute to making better public spaces. Besides, resources will be used more efficiently. Therefore, it is interesting to evaluate the role of collaborative governance. In this study, this has been done by using the integrative framework for collaborative governance of Emerson et al. (2012) in combination with the policy arrangement approach of Leroy & Ars (2006) for defining the system context. By analyzing two cases: the Rijnkade in Arnhem and the Waalkade in Nijmegen, this research answers the following main question: *'How can collaborative governance help integrate water safety and spatial quality in urban waterfront regenerations?'* and the four corresponding sub-questions.

In this research, the method of process-tracing is used to test seven theoretical propositions (hypotheses) and to gain possible explanations (causal mechanisms) for successful integration of water safety and spatial quality in urban waterfront regenerations through collaborative governance. Process tracing is a qualitative research method of 'backwards reasoning', where a specific outcome is being explained by tracing back how influential factors played a role in the creation of that outcome. Data for this research was conducted by a combination of ten semi-structured interviews and a document analysis.

From this research, it can be concluded that collaborative governance is a suitable form for integrating water safety and spatial quality in urban waterfront regenerations. The collaborative dynamics can be seen as the dimension that determines the quality of the process. Some elements that appear most important for a successful process are the elements of definition, deliberation, trust and mutual understanding. If enough effort is being made to ensure that these elements are perceived as positive, there is a good chance that the rest of the collaborative dynamics function well and create the best suitable outcomes.

**Keywords:** collaborative governance; integrating water safety & spatial quality; policy arrangement approach; urban waterfront regeneration

## Preface

Dear reader,

Hereby, I proudly present to you my master thesis about the role of collaborative governance in integrating water safety and spatial quality urban waterfront regenerations. This thesis is part of the masters' programme *Spatial planning*, with the specialisation *Cities, Water and Climate Change* at Radboud University Nijmegen.

This research took place between April and October 2020. This period of writing was mostly marked by the COVID-19 pandemic, asking for a lot of hours working from home and a different approach to collecting data – different than what I expected my last half-year as a student would be.

Nevertheless, I am happy to notice that so many people were willing to help me graduate. Therefore, I would first like to thank all my respondents for investing time in sharing their knowledge and experiences with me. They were flexible, actively involved and very willing to help.

Besides, I would like to thank my supervisor Sander Meijerink, for his guidance during this process. His positivism and critical feedback have helped me in taking the steps leading to this final report.

Finally, on a personal level, I want to thank my friends, fellow students, housemates and family who supported me during my research process by giving feedback and motivating me. But most of all, for making my years as a student a very memorable period.

Then there's nothing more to say than that I hope you enjoy reading this research!

Romee Uijterlinde

Nijmegen, November 2020

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## List of abbreviations

CGR	Collaborative Governance Regime
DFFP	Dutch flood protection programme
HWBP	Hoogwaterbeschermingsprogramma ( <i>Dutch flood protection programme</i> )
PAA	Policy Arrangement Approach



## 1. Introduction

### 1.1 Background

*Living with water*, the Dutch know all about it. The combination of a densely urbanized, lower-lying country and the presence of water, makes the Netherlands vulnerable. Without dykes and dunes, more than half of the country would regularly be flooded. Water management and spatial planning are, therefore, inherently connected in the Netherlands (Woltjer & Al, 2007).

Traditionally, water management in the Netherlands is purely seen as a matter of civil engineering, aimed at controlling nature (Rijke et al., 2012). Over the years, however, it has been acknowledged that new or improved flood defence infrastructure can have a significant impact on spatial quality, especially in urbanized deltas with built environments, such as the Netherlands (Nillesen & Kok 2015). Therefore, a transition has been taking place in flood risk management; the traditional sectoral engineering approach to flood risk management is gradually being replaced by an integrated approach that incorporates various disciplines, such as spatial planning (Rijke et al., 2012). Because of the growing appreciation of the relationship between spatial quality and water management, spatial quality is increasingly incorporated in the objectives to be achieved in the development of flood risk management strategies (Nillesen & Kok, 2015).

This connectedness between spatial planning and water safety also works the other way around. Water is not always seen as a threat in spatial planning, but rather as an addition to spatial quality. Timur (2013) even describes water as the most important planning element. Water in urban areas can have functional effects (climatic control, recreational aims and noise control effects) as well as aesthetic effects (visual, audial, tactual and psychological effects) (Timur, 2013).

#### 1.1.1 Urban waterfronts

Different types of points where water and urban areas meet can be recognized. An urban waterfront is one of them. An urban waterfront can be seen as the water's edge in cities and town, which can be a river, lake, ocean, bay, creek or canal (Sairinen & Kumpulainen, 2006; Timur, 2013). Wrenn et al. (1983 in Timur, 2013) distinguish between five categories of urban waterfronts and their location with the water:

1. An urban area located on a peninsula
2. An urban area located on a bay
3. An urban area located on banks of a river
4. An urban area located on banks of intersecting rivers
5. An urban area located on a larger body of water

Throughout history, waterfronts are the most ideal living area for human beings to be able to provide food, settling, reproduction, defence and learning (Timur, 2013). Many cities or towns are established along the water's edge because waterfronts have historically been the hub of transportation, trade and commerce (Timur, 2013). According to Timur (2013), there is a typical pattern of phases visible in waterfront development: the emergence of waterfront cities, the growth of waterfront, the deterioration of waterfronts and the rediscovery of waterfronts.

During the last centuries, urban waterfront areas have undergone large transitions and the attraction of the urban coastline has, again, been recognized (Sairinen & Kumpulainen, 2006; Timur, 2013). Nowadays, cities seem to seek a waterfront that is a place of public enjoyment which serves multiple purposes: a place to work, to live, to play in (Timur, 2013). It can thus be concluded that waterfronts can contribute to the quality of life.

In order to change waterfronts in places that contribute to the quality of life, multiple parties have been involved in urban waterfront regenerations. Two trends have led to this involvement: the shift from government to governance and the trend of urban densification.

First of all, urban governance has expanded to involve not only governments but also a range of private and semi-public actors (Sairinen & Kumpulainen, 2006). This changing relationship between governmental and non-governmental actors is the result of the shift from government to governance, which reflects that governments are no longer the sole decision-making authority (van der Heijden, 2014). As knowledge becomes increasingly specialized and distributed and as institutional infrastructures become more complex and interdependent, the demand for collaboration increases (Ansell & Gash, 2007). Voorberg et al. (2014) describe this as a process of social innovation, where relevant stakeholders can bring in their knowledge, information and resources.

Second, the trend of urban densification, where the density of the urban area is densified to advance sustainable development (Sairinen & Kumpulainen, 2006). Especially because of the recognition of the attractiveness of the urban coastline, the concentration of population at watersides, has increased (Timur, 2013). This trend has also led to an increased social impact on the usage of the waterfronts.

As a result of these two trends, citizens and various interest groups have been increasingly interested in how urban waterfronts are planned (Sairinen & Kumpulainen, 2006). Many methods, such as participatory planning, have been developed to satisfy the general legitimacy qualifications of 'cautious' land-use planning.

According to Moretti (2008), several different types of urban waterfront regenerations can be recognized. Types that occur in the Netherlands include:

1. New Urban Expansion: this type contains the waterfront areas which are built all over again in available areas; and reclaimed old industrial or port areas.
2. Reuse of Port Areas: This typology includes waterfront areas which are regenerated former port areas. With re-use of these areas, the water has regained the heart of cities.
3. Flood Defence: Some structures which are established for river flood defence can represent a new opportunity for city expansion and the establishment of new urban uses.
4. Urban beaches: an artificially created environment in urban areas. They show a distinctive and alternative mode of reusing of waterfronts. Urban beaches are relatively unfixed due to temporary and mobile.

## 1.2 Problem indication

When looking at the four types of urban waterfront regenerations in the Netherlands, especially with the type of a flood defence, water safety plays an important role. In this case, two issues can be addressed at the same time: water safety and urban development. Such an integrated approach provides added spatial value and increases the resilience in an area (Tromp et al., 2013). Another benefit of this integrated approach is that it can lead to significant cost reductions in both the short and the long term (Tromp et al., 2013). The integration of these two issues means that multiple governmental actors (e.g. water authorities and municipalities), as well as non-governmental actors, are involved. This is also in line with the previously mentioned trend of the involvement of multiple parties in waterfront regeneration projects.

However, some disadvantages come with integrating urban development and water safety. It appears that the water safety issue is often more urgent than the spatial planning issue (Tromp et al., 2013).

Because of this urgency, the water safety issue is leading and the role of spatial design is limited to fit in the flood protection measure, besides, spatial quality often remains adversely affected (Nillesen & Kok, 2015). Another barrier that comes with coordinating spatial planning and water safety is that dependencies will be created between third parties. The involvement of multiple parties can be at the expense of the pace of the project and it can lead to tensions between the individual and collective interest (Tromp et al., 2013).

To overcome these disadvantages, collaboration between different parties is needed. Collaboration between governments and local parties can result in area-specific solutions and conflicting interests can be united, which can result in greater support (Tromp et al., 2013). Besides, collaborative forms of governance might help to solve wicked problems and enhance democratic participation in public policy-making (Sørensen & Torfing, 2009). Multiple approaches have been developed to ensure successful collaboration with different actors. One of these approaches is collaborative governance. This form of governance appears particularly popular in addressing contemporary urban problems and seeks solutions that are suitable for a certain context at a certain time (van der Heijden, 2014). Collaborative governance can be understood as *'the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished'* (Emerson et al., 2012 p. 2). The advantages and disadvantages of collaborative governance are widely discussed. Involving multiple actors will help to increase the knowledge-sharing and possible use of other resources (van der Heijden, 2014). Besides, it is expected to result in a higher willingness of the actors involved to comply with these tools once in force (van der Heijden, 2014). Finally, this form of governance can be seen as more democratic (Sørensen & Torfing, 2009).

Of course, collaborative governance has challenges as well, such as ensuring an equal sharing of power and an equal level of participation amongst participants (van der Heijden, 2014; Sørensen & Torfing, 2009). The involvement of multiple actors can also create conflicts and deadlocks and make public governance less transparent (Sørensen & Torfing, 2009; Sairinen & Kumpulainen, 2006). In chapter 3, the concept of collaborative governance and its (dis)advantages will be further discussed.

The element of involving multiple actors of collaborative governance can be recognized in urban waterfront regeneration projects. Urban waterfront regeneration projects, whether they are undertaken as a water safety project or an urban development project, are often initiated and led by a governmental actor. According to van der Heijden (2014), this is one of the roles governments are expected to take up in collaborative governance. However, when looking at the definition of Emerson et al. (2012), an important element of collaborative governance is to engage people across different conceivable boundaries. This also means the inclusion of non-governmental actors. Non-governmental actors can bring in knowledge and other resources which can lead to more suitable and effective governance tools (van der Heijden, 2014). Due to the involvement of multiple stakeholders, collaborative governance can be seen as more democratic. Besides, collaboration is expected to result in increased legitimacy and accountability, because those governed may feel empowered by the collaborative governance process (van der Heijden, 2014). This involvement of citizens in both the design and production process of public services is called public co-creation and will lead to beneficial outcomes (Voorberg et al., 2014).

To understand these processes, first, a better understanding is needed of the involved actors, the legal framework, the available resources and the reasons and norms that drive these actors (Emerson et al., 2012). This will provide insight into the system context, from where drivers emerge which start collaborative dynamics. To analyze this system context, the Policy Arrangement Approach (PAA) will

be used. This approach distinguishes between these four dimensions of a policy process (Leroy & Arts, 2006). After the system context has been made clear, the focus will be on the collaboration dynamics between the actors involved. These dynamics consist of three interactive components: principled engagement, shared motivation and capacity for joint action (Emerson et al., 2012). Researching the collaborative dynamics can help in determining the process performance (the functioning of these dynamics), which provides the basis for analyzing the productivity performance (the resulting outcomes, actions and adaptation resulting from collaborative actions) (Emerson & Nabatchi, 2015b).

In this study, two waterfront regeneration projects will be used as cases: the Waalkade in Nijmegen and the Rijnkade in Arnhem. In the section below, the two cases will be introduced in more detail. Understanding how collaborative governance is used in these two projects to integrate water safety and spatial quality can give insights for future projects.

### 1.3 Introduction cases

Arnhem and Nijmegen, two cities in the province of Gelderland, both located at a major river in the Netherlands, with a comparable amount of citizens; Arnhem with 159.265 and Nijmegen with 176.731 (Centraal Bureau voor de Statistiek, 2019). Both cities are characterized as historic cities in a green environment, located on a river and moraine (Provincie Gelderland, n.d.). Arnhem and Nijmegen have a comparable quay at the edge of the city centre, with mostly houses and some catering facilities. According to the categories of Wrenn et al. (1983 in Timur, 2013), both waterfronts can be distinguished as an urban area located on banks of a river. Even the names of the quays indicate the similarities: the Rijnkade (Arnhem) and the Waalkade (Nijmegen). See figure 1 for the location of both cities and the quays.

According to the programme ‘vibrant city centres at the river’ (in Dutch: *bruisende binnensteden aan de rivier*) of the province of Gelderland, both cities can make better use of their location of the inner cities on the river (Provincie Gelderland, n.d.). One of the aims of this programme is to strengthen the connection between the river, the city centre and the green environment. The river should not be seen as a barrier, but rather as a quality. Governments of both cities are working on strengthening the connection between the river and the city centre by waterfront regeneration projects but in different ways: the Rijnkade in Arnhem has been tackled primarily due to water safety issues and the Waalkade in Nijmegen primarily due to urban development considerations. The waterfront regenerations in the two cities are described below.

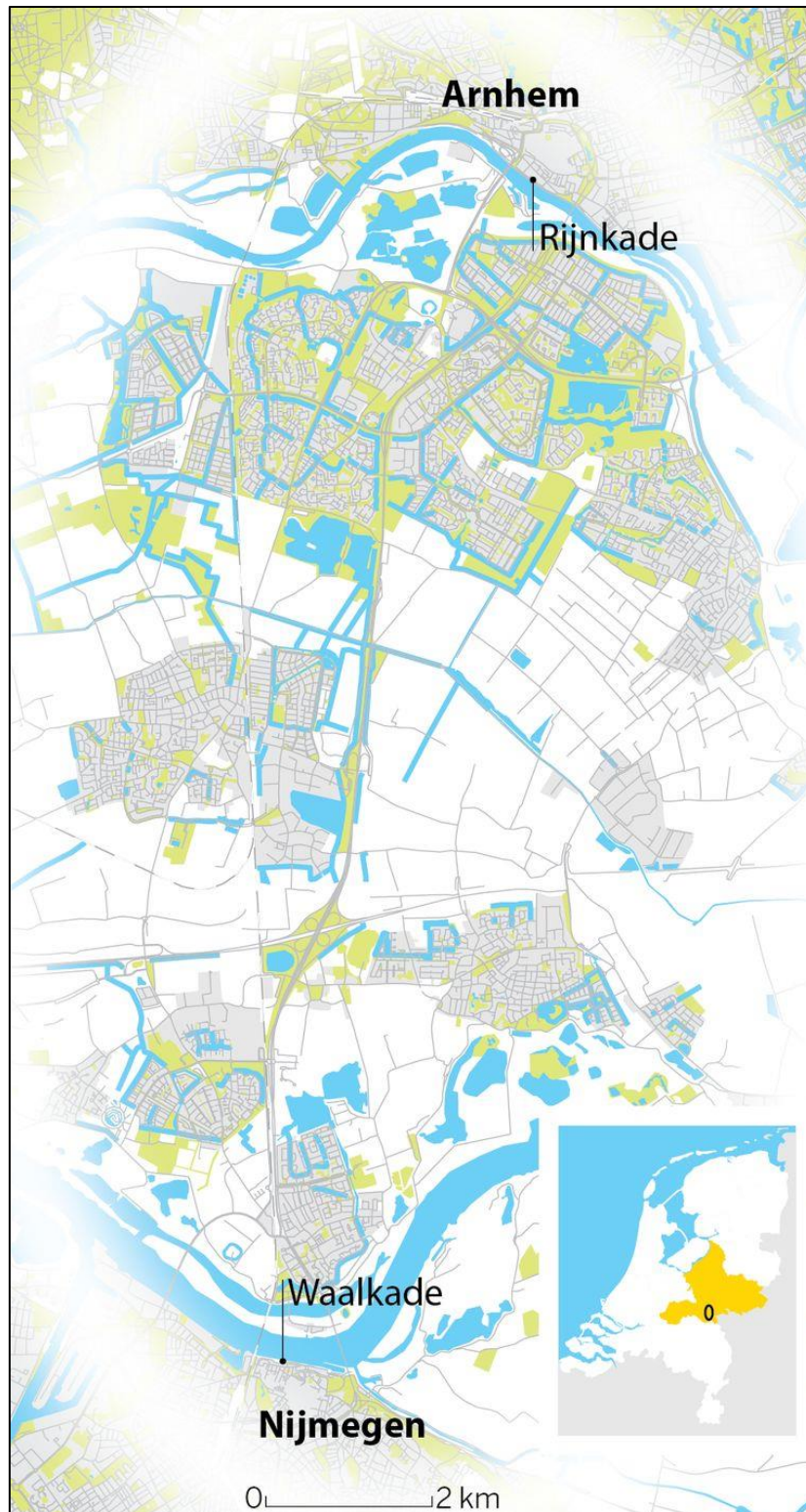


Figure 1: Location of the Rijnkade in Arnhem and the Waalkade in Nijmegen (van Dinther, 2018).

### 1.3.1 Rijnkade Arnhem

Arnhem is located on the northside of the river Rhine. The Rijnkade consists of a lower quay and a higher quay. The higher quay was built up after the second world war as a residential boulevard with several catering facilities, mainly located in the middle. At the east and west part of the quay, there



are mainly houses. At the lower quay, boats can moor and cars can be parked. Along the whole quay, there are many opportunities to switch from the lower to the higher quay. See figure 2 for an impression of the Rijnkade.



Figure 2: An impression of the Rijnkade (Waterschap Rijn en IJssel, n.d.)

As of 2017, new safety standards for dykes apply. These safety standards are established by law and executed by the Dutch Flood Protection Programme (DFPP) (in Dutch: *Hoogwaterbeschermingsprogramma, HWBP*). This programme is an alliance of Rijkswaterstaat and the water authority and aims to have all primary flood defences strengthened in by 2050 so that they meet the legal standards as laid down in the Water Act (HWBP, 2019 a). According to these new safety standards, the quay in Arnhem should be strengthened. Because the DFPP acts based on water safety, this strengthening should be realized soberly and efficiently. *Sober* is understood to mean that only the costs of measures that make the flood defence again meet the safety standard are eligible for the subsidy (HWBP, 2019 a). *Effective* means that the total costs of a primary flood defence system are minimized during the entire lifetime (HWBP, 2019 a). However, where possible, the strengthening will be combined with realizing additional social goals, such as spatial quality and sustainability (HWBP, 2019 a).

Even though there was no urgent need from the flood protection perspective, the municipality of Arnhem together with the water authority Rijn & IJssel decided to start the project earlier because the city of Arnhem is working on improving the south-side of the city centre (Bouman, 2019). For the municipality, the strengthening of the quay is a good opportunity for the municipality to improve the attractiveness of the city and to strengthen the connection between the city and the water. This is in line with Tromp et al. (2013), who state that if water safety issues and spatial development issues do not coincide in time, it should be considered whether one of them is flexible and can be shifted so that both developments coincide anyway and an integral approach is possible.

Within this process, the water authority is cooperating with the municipality of Arnhem, the province of Gelderland and Rijkswaterstaat. Besides these governmental actors, citizens living at the quay and entrepreneurs are also involved in the process.

The process started in 2017 and is still ongoing. In section 4.1 a further introduction will be given to this case.

### 1.3.2 Waalkade Nijmegen

Nijmegen is situated at the southside of Waal river, in between the Waalbrug and the Spoorbrug. This quay does not consist of a higher and lower part, as in Arnhem, but consists of one level. The Waalkade is known for the clustering of bars and restaurants and as a place for events. See figure 3 for an impression of the Waalkade before the regeneration.



Figure 3: An impression of the Waalkade (Strijbosch, 2019)

In 2015 the municipality of Nijmegen assessed the character of the catering industry located at the quay as weak and not sufficiently distinctive (Gemeente Nijmegen, 2015). The municipality decided that the quay should become more of an entity, with an attractive design and a lively character (Gemeente Nijmegen, 2015). In 2012, the eastern part of the Waalkade was already being redeveloped (Schoemaker, n.d. b).

In 2015, the municipality of Nijmegen started the process of the regeneration of the Waalkade. Within this project, the municipality collaborated with the entrepreneurs and the residents of the Waalkade. Besides, several so-called *open ateliers* were organized. In these open meetings and online, residents of Nijmegen were invited to share their opinions. From these ideas, three different scenarios were created. In the start of 2016, the city council agreed on developing one scenario, which was further elaborated in 2017. In March 2018, the final design of the Waalkade was presented to the city council after which the tendering of the project took place and the execution started. The proceedings finished in the summer of 2019. In nine months, the quay has changed to a greener, carless quay (Strijbosch, 2019). In section 5.1 a further introduction of this case will be given.

## 1.4 Research aim & research questions

This research aims to evaluate the role of collaborative governance in the integration of water safety and spatial quality in urban waterfront regenerations. In an evaluative study, the research is aimed at determining whether a certain policy or arrangement has helped to realize the specific targets (van Thiel, 2014). In this study, this will be done using the Policy Arrangement Approach of Leroy & Arts (2006) to determine the system context together with the integrative framework for collaborative

governance of Emerson et al. (2012) to analyze the collaborative dynamics and to determine productivity performance of these collaborations.

In this study, the following main question will be answered:

*How can collaborative governance help integrate water safety and spatial quality in urban waterfront regenerations?*

The main question will be answered using the following sub-questions.

1. How can the system context of the two regeneration projects in Arnhem and Nijmegen be described?
2. Which drivers did emerge from the system context?
3. What are the collaborative dynamics between the actors in Arnhem and Nijmegen?
4. How is the productivity performance of the CGR assessed?

The method of process-tracing will be used in this research. Process tracing is a method to examine what causal mechanisms within a case explain the outcome of this case (Collier, 2011). Within this method, academic literature will be translated into seven hypotheses that indicate causal mechanisms. These hypotheses are based on the conceptual framework and will be formulated in section 2.6. In section 3.2, the method of process tracing will be elaborated upon in detail.

## 1.5 Relevance

As previously mentioned, integrating water safety and spatial quality comes with multiple advantages and disadvantages. Collaborative governance could help this integration by bringing different actors together across boundaries, to ensure outcomes that wouldn't be possible by the actors alone. According to Emerson et al. (2012), the integrative framework can be applied at different scales, in diverse policy areas and at various levels of complexity.

First of all, societal relevance, which is the extent to which a study is expected to contribute to the solution of social problems (van Thiel, 2014). As has been mentioned in the introduction, urban waterfronts can contribute to the quality of life of people in the city. However, this potential is not yet optimally utilized everywhere. The Rijnkade and the Waalkade are examined in this study, but examples can be found worldwide. Conclusions of this study can be used to better organize future waterfront regenerations, and thus achieve a better public space.

Besides, if two goals can be realized at the same time, it means that resources, such as financial resources, are spent more efficiently. Therefore, it is relevant to investigate the role of collaborative governance in combining the goals of water safety and improving spatial quality.

The scientific relevance of a study varies with the extent to which it contributes to existing knowledge (van Thiel, 2014). According to the literature, many studies have applied the integrative framework of collaborative governance to several policy fields. However, this framework has not been used to describe the integration of the two policy fields of water safety and urban development or to describe urban waterfront regenerations. In this study, the integrative framework for collaborative governance and the policy arrangement approach are used to analyze two waterfront regeneration projects. Understanding how collaborative governance can be recognized in these two projects to integrate water safety and spatial quality can give insights for future projects. With describing the system context and assessing the productivity performance, suggestions can be given for improvements. Besides, it is interesting to explore how different actors experience the degree of integration and collaboration and



what barriers and enablers they have to deal with. The observed results from this research could be used to further improve the process of integration and collaboration in the future.

## 1.6 Reading structure

This chapter already provided for some insight on relevant scientific theories. Chapter 2 further elaborates upon these two main theories: collaborative governance and the PAA. After this overview, the conceptual framework is presented followed by a detailed operationalization of the elements in this framework. In chapter 3, the methodology is discussed, including the research philosophy, research strategy and research method. The validity and reliability of the research are also discussed here. In chapter 4 and 5, the results of this study are presented. In these chapters, first, a further introduction on the cases is given, followed by a process reconstruction and an analysis of the results. In the final chapter, answers on the research question are provided and conclusions are given together. Besides, this chapter elaborates on the implications, limitations and recommendations of the research in the discussion section.

## 2. Literature review and theoretical framework

In this chapter, first, an overview of the theoretical framework will be given, after that, the conceptual framework and the operationalization will be discussed. The two main theories in this thesis are the Integrative framework for collaborative governance of Emerson et al. (2012) and the Policy Arrangement Approach of Leroy & Arts (2006) & Liefferink (2006). This chapter consists of six sections; first of all, an overview will be given of the integration of water safety and spatial quality in urban waterfront regenerations. The second section will give an overview of the concept of collaborative governance. The third section focusses on the integrative framework for collaborative governance. In the fourth section, an overview will be given on how to determine the productivity performance of collaborative governance. The fifth section elaborates on the policy arrangement approach and on how this approach can be used to describe the system context. The last section will provide an overview of how these theories will be operationalized and present the conceptual framework.

### 2.1 Integration of water safety and spatial quality in urban waterfront regenerations

This study aims to evaluate the role of collaborative governance in the integration of water safety and spatial quality in urban waterfront regenerations. In order to answer the main question, first, a better understanding of spatial quality and water safety in urban waterfront regenerations is needed.

#### **Water safety**

Since 2017, new flood risk standards apply, which lay down in the Water Act. The aim is to meet these standards everywhere in the Netherlands by 2050. Standards are set for a lower limit, or maximum allowable flood probability, which a barrier must at least meet. This implies that the probability that an individual dies from a flood should not exceed 1:100,000 (0,001%) per year (Deltacommissaris, n.d.). Extra protection will be offered to places that have a risk of large groups of victims and/or major economic damage and/or serious damage due to failure of the vital and vulnerable infrastructure of national importance (Deltacommissaris, n.d.). The lower limit for a probability of flooding is in Nijmegen 1:10,000 (0,01%) per year and in Arnhem 1:1,000 (0,01%) per year (Slootjes & van der Most, 2016).

Because of these strict standards, water safety can be seen as an objective measure. Therefore, it would be easy to evaluate whether these requirements have been met within an urban waterfront regeneration.

#### **Spatial quality**

Compared to the objective measure of water safety, spatial quality can be seen as a rather subjective measure that is multi interpretable.

As stated before, cities aim for a waterfront that contributes to the quality of life. Waterfront development projects often arise in the larger context of urban renewal, intending to upgrade the urban area (Timur, 2013). Therefore there is the need to determine which factors influence spatial quality. The term spatial quality has been used in many different contexts. In order to create a more tangible concept, the former Dutch Ministry of housing, spatial planning and the environment defined spatial quality as a result of the use-value, future value and experience value (In Dutch: *gebruikswaarde, toekomstwaarde en belevingswaarde*) (VROM-raad, 2011). Use-value is formed by

usability and functional cohesion; future value through adaptability, sustainability and manageability; and experience through diversity, identity and beauty (van der Molen, 2011). Spatial quality, thus, implies the relation between space and the human user. It indicates the value that users in a specific area assign to space at a specific time (Janssen-Jansen, Klijn & Opdam, 2009). Spatial quality can be seen as an intersubjective term, which means that it has a subjective as well as an objective dimension. With the subjective dimension, the variable meaning is meant. The appreciation for a particular spatial design is strongly linked to personal preferences, time, culture and location (Janssen-Jansen, Klijn & Opdam, 2009). The objective dimension includes, for example, criteria for water, air and soil quality (Janssen-Jansen, Klijn & Opdam, 2009).

Determining the desired quality might be hard, because of the many interpretations. Therefore, the involved actors in an urban waterfront regeneration need to agree upfront on the interpretation of spatial quality.

## 2.2 Collaborative Governance

The concept of collaborative governance takes a central role in this research. Governance itself has been used in many different contexts. Ansell & Gash (2007) define governance as the rules and forms that guide decision-making. According to van der Heijden (2014), governance is an *'intended activity undertaken by one or more actors seeking to shape, regulate or attempt to control human behaviour in order to achieve a desired collective end'* (van der Heijden, 2014, p. 6).

Governance can thus be understood as the act of governing, a method to reach policy goals and it can be undertaken by governmental actors, businesses and civil society. Although public agencies are mostly initiating collaborative governance, non-governmental actors are increasingly involved in the governing of society (Ansell & Gash, 2007). This changing relationship is the result of the shift from government to governance, which reflects that governments are no longer the sole decision-making authority (van der Heijden, 2014). Collaboration across boundaries (e.g. governmental levels and the private and public sphere) is increasingly called on to handle the complex challenges we face (Emerson & Nabatchi, 2015a).

As knowledge becomes increasingly specialized and distributed and as institutional infrastructures become more complex and interdependent, the demand for collaboration increases (Ansell & Gash, 2007). Voorberg et al. (2014) describe this as a process of social innovation, where relevant stakeholders can bring in their knowledge, information and resources.

To ensure successful governance by different actors, multiple approaches have been developed. One of these approaches is collaborative governance. This form of governance appears particularly popular in addressing contemporary urban problems and seeks solutions that are suitable for a certain context at a certain time (van der Heijden, 2014). Collaborative governance aims to change the direction of a complex, uncertain, evolving situation, and to help move a community towards higher levels of social and environmental importance (Emerson & Nabatchi, 2015a)

Collaborative governance has been defined in many different ways. Van der Heijden (2014, p. 62) defines collaborative governance as the *working together of governments, businesses and civil society groups and individuals in governing*. Ansell & Gash (2007, p. 2) give a more detailed definition: *a governing arrangement where one or more public agencies directly engage non-state stakeholders in a collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets*. 'Stakeholders' is understood

here as the participation of citizens as individuals, the participation of organized groups, public agencies and nonstate stakeholders (Ansell & Gash, 2007).

Emerson et al. (2012) have a broader definition, they do not limit collaborative governance to only formal, state-initiated arrangement and engagement between government and non-governmental stakeholders. Emerson et al. (2012 p. 2) define collaborative governance as *'the processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished'*.

As stated before, the demand for collaboration increases as knowledge becomes increasingly specialized and distributed and institutional infrastructures have become more complex and interdependent. Collaborative governance requires the participation of non-governmental stakeholders, as can be derived from the definitions. Non-governmental actors have a better knowledge of their day-to-day behaviour (van der Heijden, 2014). Including this knowledge of non-governmental actors in the development of governance tools, is expected to result in more suitable and effective governance tools (van der Heijden, 2014). The involvement of non-governmental actors into policy processes has more advantages next to assisting the government with knowledge and other resources. Due to the involvement of multiple stakeholders, collaborative governance can be seen as more democratic (Sørensen & Torfing, 2009).

Besides, including non-governmental actors in the development and implementation process of governance tools, is expected to result in a higher willingness of these actors to comply with these tools once in force (van der Heijden, 2014).

Finally, collaboration is expected to result in increased legitimacy and accountability of governance tools, because those governed may feel empowered by the collaborative governance process (van der Heijden, 2014).

Next to these advantages, there are also some disadvantages associated with collaborative governance. Including all relevant stakeholders makes the process of governing much more difficult. Because of the large number of participants involved, collaborative processes may face collective action problems (van der Heijden, 2014). Besides, it often appears difficult to achieve a true sharing of power among the participants in collaborative processes (van der Heijden, 2014).

According to Ansell & Gash (2007), there must be a two-way communication and influence between stakeholders. They emphasize that consultative techniques, such as surveys or focus groups are not collaborative because they do not permit two-way flows of communication or multilateral deliberation (Ansell & Gash, 2007). Stakeholders, therefore, must be directly engaged in decision making. However, if all relevant stakeholders have an equal level of decision-making power and if all participants should agree with the outcome of the process, it would result in unworkable governance processes. Therefore, there is often no equal level of participation possible for all participants, which can result in undemocratic outcomes (Sørensen & Torfing, 2009). Van der Heijden (2004) argues that the level of decision-making power and level of consensus should be agreed upon before starting a collaborative governance process so that expectations of potential participants can be managed. This clarity would prevent participants from feeling that they are not taken seriously, which may result in not them trusting or accepting the outcomes of the process (van der Heijden, 2014).

Finally, the involvement of multiple actors in collaborative processes can create conflicts and deadlocks and can lead to tensions between involved actors, such as reduced autonomy, shared resources and increased dependence (Sørensen & Torfing, 2009; Tromp et al., 2013; Emerson & Nabatchi, 2015 a).

### 2.3 An Integrative Framework for Collaborative Governance

In this research, the integrative framework for Collaborative Governance as developed by Emerson et al. (2012) is used, see figure 4 for this model. Other models for collaborative governance have been considered as well, such as the model for collaborative governance of Ansell & Gash (2007). Although the two models have some similar variables, the two differ from each other. The model of Ansell & Gash (2007) describes a virtuous circle of collaboration. The framework of Emerson et al. (2012) has the concept of Collaborative Governance Regime (CGR) as the central concept and has a focus on behaviour and concrete actions and outcomes. Because of this focus on actions and outcomes, the framework of Emerson et al. (2012) can be regarded as more useful for evaluative research. Therefore, this framework is chosen for this study.

In the integrative framework for collaborative governance, multiple components of collaborative governance are integrated. The framework consists of three dimensions: the system context, the collaborative governance regime and collaboration dynamics. Drivers within the system context will ensure the three interactive components of collaboration dynamics work together, producing collaborative actions, which lead to impacts and adaptation. The functioning of these collaborative dynamics is expressed in the process performance. The extent to which a collaborative governance regime produces a result is the productivity of the CGR (Emerson & Nabatchi, 2015b). The dimensions and concepts will be explored more in detail in the remainder of this chapter.

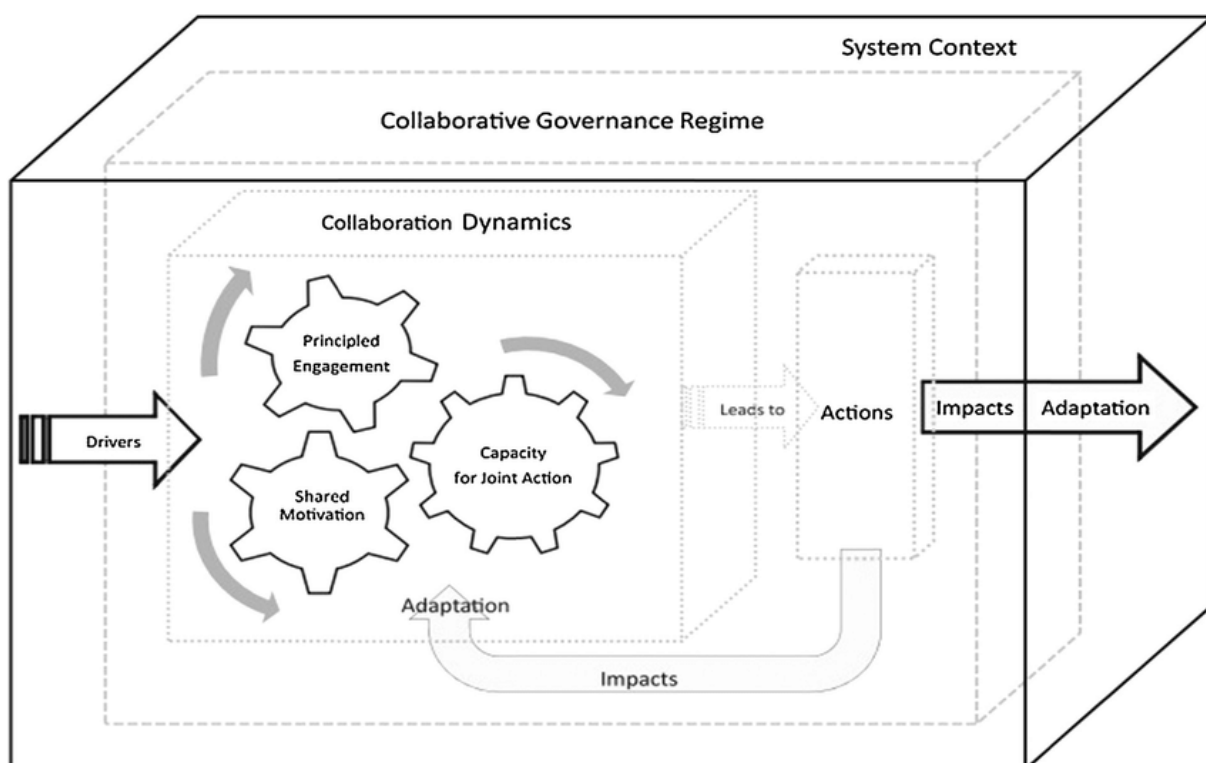


Figure 4: The Integrative Framework for Collaborative Governance (Emerson et al., 2012)

#### System context

The system context is the multilayered context of political, legal, socioeconomic, environmental and other influences, in which collaborative governance is initiated. This system context generates

opportunities and constraints and influences the dynamics and performance of the collaboration at any time during the life of the Collaborative Governance Regime (CGR) (Emerson et al., 2012). Analyzing the system context will give insight in who is involved in the CGR, what the legal framework is, what resources are available to the local actors and into what reasons and norms drive the actors. As mentioned in the introduction, the policy arrangement approach will be used to analyse the system context. In section 2.3, the policy arrangement approach will be elaborated.

From this system context, four drivers emerge which help initiate and set the direction for a CGR (Emerson et al., 2012):

1. *Leadership*: the presence of an identified leader who is in a position to initiate and help secure resources and support for a CGR. The leader should possess a commitment to collaborative problem solving, a willingness not to advocate for a particular solution and exhibit impartiality to the preferences of participants.
2. *Consequential incentives*: incentives (positive or negative) must exist to include leaders and participants to engage together
3. *Interdependency*, or: when individuals and organizations are unable to accomplish something on their own.
4. *Uncertainty* can drive actors together to collaborate in order to reduce, diffuse and share risk.

These drivers appear to be linked together. One or more drivers are necessary for a CGR to begin, the more drivers present and recognized by participants, the more likely a CGR will be initiated (Emerson et al., 2012).

### **Collaborative Governance Regime (CGR)**

The word regime is used to describe the mode or system for public decision making in which cross-boundary collaboration represents the prevailing pattern of behaviour and activity. The development of the CGR and the degree to which it is effective is influenced over time by its two components: collaborative dynamics and collaborative actions. To survive and accomplish its shared purpose, a CGR must become a system that effectively attracts and retains members (Emerson & Nabatchi, 2015 a). Besides, it should develop implicit and explicit principles, rules, norms and decision-making procedures (Emerson & Nabatchi, 2015 a).

### **Collaboration Dynamics**

There are three components of collaborative dynamics: principled engagement, shared motivation and capacity for joint action. These components are visualized as wheels in the framework because they influence, reinforce and support each other. The working of these components can lead to collaborative actions, which can lead to outcomes. The quality and extent of collaborative dynamics depend on the productive and self-reinforcing interactions among principled engagement, shared motivation and the capacity for joint action (Emerson et al., 2012). The quality is, therefore, not dependent on outputs, but rather on the process.

Principled engagement refers to the involvement of the actors and their behavioural interactions. Through principled engagement, people with different goals work across their respective institutional, sectoral or jurisdictional boundaries to solve problems, resolve conflicts or create value (Emerson et

al., 2012). Inclusion and involvement are essential to this component. Principled engagement occurs over time through the iteration of four basic process elements (Emerson et al., 2012):

1. *Discovery*: the identification of individual and shared interests, concerns and values and the analysis of relevant and significant information and its implications
2. *Definition*: the continuous efforts to build shared meaning; agreeing on the concepts and terminology participants will use to describe and discuss problems and opportunities; clarifying and adjusting tasks and expectations of one another; setting forth shared criteria with which to assess information and alternatives
3. *Deliberation*: the communication across boundaries between the participants, which requires a thoughtful examination of issues, listening to others' perspectives and coming to a public judgement on what presents the common good
4. *Determination*: the procedural decisions and substantive determinations

These working together of these elements can be seen as a social learning process. Through this process, participants develop a shared sense of purpose and a shared theory of action for achieving this purpose. This shared theory of action includes the groups' understanding of the size of the problem or challenge as well as the scope and the scale of the groups' chosen activities or interventions (Emerson et al., 2012).

Shared motivation refers to the interpersonal and relational elements of the collaborative dynamics, partly initiated by principled engagement. Just like principled engagement, shared motivation consists of four elements which support, reinforce and initiate each other (Emerson et al., 2012):

1. *Trust*: happens over time as parties work together, get to know each other and prove to each other that they are reasonable, predictable and dependable. Trust enables people to understand other peoples' interests, needs, values and constraints
2. *Mutual understanding*: the ability to understand and respect others' positions and interests.
3. *Legitimacy*: the confirmation that participants are trustworthy and credible, with compatible and interdependent interests, legitimizes and motivates ongoing collaboration.
4. *Commitment*: the dedication to the CGR and its collective purpose and goals. This enables participants to cross the organizational, sectoral and/or jurisdictional boundaries that previously separated them and commit to a shared path.

Repeated interactions through principled engagement will help foster trust, mutual understanding, internal legitimacy and shared commitment, thereby generating and sustaining shared motivation (Emerson et al., 2012).

Capacity for joint action is a collection of elements that together create the potential for taking effective action. Principled engagement and shared motivation will stimulate the development of these elements, thereby generating and sustaining capacity for joint action. The CGR must generate new capacity for joint action that did not exist before and sustain or grow that capacity for the duration of the shared purpose. Capacity for joint action is the combination of four elements (Emerson et al., 2012):

1. *Procedural and institutional arrangements*: the range of process protocols and organizational structures necessary to manage repeated interactions over time
2. *Leadership*: roles taken up by the participants in the CGR
3. *Knowledge*: the social capital of shared knowledge that has been weighed, processed and integrated with the values and judgement of participants
4. *Resources*: the available resources of participants, which can be shared through collaboration

## Collaborative outcomes

### *Collaborative actions*

The components of collaborative dynamics interact over time and propel collaborative actions. Collaborative actions are actions that could not have been attained by any of the organizations acting alone (Emerson et al., 2012). These actions are more likely to be implemented if a shared theory of action is identified explicitly among the participants and if the collaborative dynamics function to generate the needed capacity for joint action (Emerson et al., 2012).

### *Impacts*

Impacts are changes of state within the system context resulting from collaborative actions (Emerson et al., 2012). Impacts may also include the added value of a new social good or technological innovation developed by collaborative action (Emerson et al., 2012).

The impacts resulting from collaborative action are likely to be closer to the targeted outcomes with fewer unintended negative consequences when they are specified and derived from a shared theory of action during collaborative dynamics (Emerson et al., 2012).

## Adaptation

Adaptation is the ability to change the direction of a complex, uncertain, evolving situation, and it helps to move a community towards higher levels of social and environmental importance (Emerson et al., 2012). The potential for adaptation exists both within the system and context and the CGR itself. GCR's will be more sustainable over time when they adapt to the nature and level of impacts resulting from their joint actions (Emerson et al., 2012).

## 2.4 Productivity Performance

The productivity performance, as described by Emerson & Nabatchi (2015 b), are the actions, outcomes and adaptation resulting from the collaboration.

GCR's generate outputs or actions that are intended to produce outcomes that may lead to adaptation. The performance of this, which can be seen as the effectiveness of the CGR, can be measured at the end of an operating cycle. Emerson & Nabatchi (2015 b) developed a matrix that identifies nine performance dimensions of productivity. They have focused on three connected levels of collaborative performance: actions, outcomes and adaptation. Besides they identified three units of analysis at which to assess productivity: participant organization, the CGR itself and target goals (see figure 5).

<i>Unit of Analysis/ Performance Level</i>	<i>Participant Organization</i>	<i>Collaborative Governance Regime</i>	<i>Target Goals</i>
Level One: Actions/Outputs	Efficiency	Efficacy	Equity
Level Two: Outcomes	Effectiveness	External Legitimacy	Effectiveness
Level Three: Adaptation	Equilibrium	Viability	Sustainability

Figure 5: The performance dimensions of Collaborative Governance Regimes (Emerson & Nabatchi, 2015 b)



Although all nine dimensions are important, the focus of this study will be on the unit of target goals. This consists of the goals that the CGR is trying to accomplish concerning the public problem, condition, service, or resource being addressed. This focus is chosen because of the evaluative aim of this study. As stated before, in an evaluative study, the research is aimed at determining whether a certain policy or arrangement has helped to realize the specific targets. The target goals in the cases of Arnhem and Nijmegen are the integration of water safety and spatial quality.

Target goals can be evaluated on three levels: the equity of actions/outputs, the effectiveness of the outcomes and the sustainability of adaptation. First, the level of actions/outputs, which are '*the results on the ground*' (Emerson & Nabatchi, 2015 b, p. 742). CGR actions are carried out based on cooperative and voluntary agreements related to a somewhat equitable distribution of benefits, costs and risks (Emerson & Nabatchi, 2015 b). There are two indicators of equity:

1. The objective measures of the distribution of net benefits
2. Beneficiaries' perceptions about the equitable distribution of the costs and benefits associated with actions.

The second level is the level of outcomes. Outcomes are alterations in an existing or projected condition that is viewed as undesirable or in need of change (Emerson & Nabatchi, 2015 b). The effectiveness of outcomes is the extent to which the CGR's actions produce their intended effect in accomplishing its target goals (Emerson & Nabatchi, 2015 b).

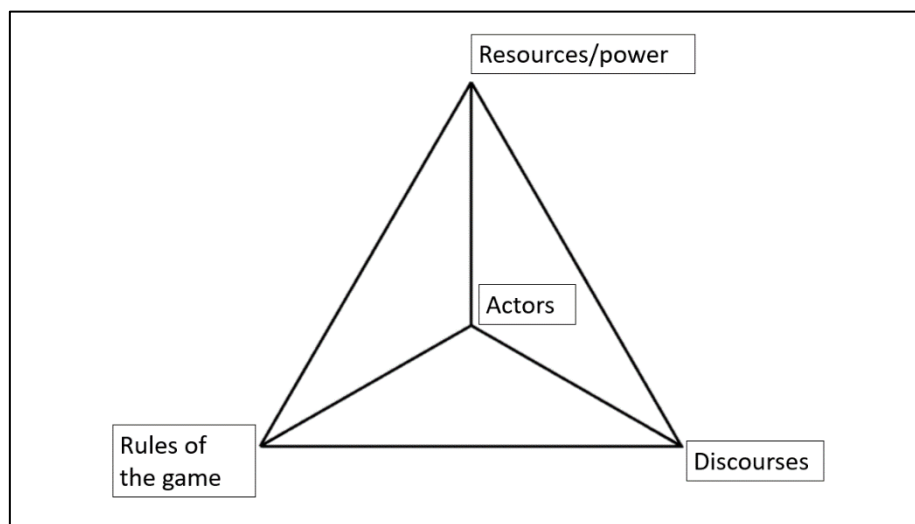
The third level of performance is adaptation. The sustainability of adaptation is the robustness & resilience of the responses to outcomes on the targeted resource or service condition, given the uncertain and changing external context, influences and events (Emerson et al., 2015 b). The ability to continue the demonstrated effects over time. The desired level of sustainability should be reflected in the strategies for change.

## 2.5 Policy Arrangement Approach

The four drivers of collaborative governance emerge from a system context. This system context is defined by Emerson et al. (2012) as the context of political, legal, socioeconomic, environmental and other influences, in which collaborative governance is initiated. These conditions can either facilitate or discourage cooperation among stakeholders (Ansell & Gash, 2007). In this study, the Policy Arrangement Approach of Leroy & Arts (2006) will be used to analyze the system context. According to Emerson et al. (2012), the system context gives insight into the actors involved, the legal framework, the available resources and into what reasons and norms drive the actors. This approach provides a structured overview of these mentioned factors with the four dimensions of a policy arrangement. According to Leroy & Arts (2006 p. 47), a policy arrangement is '*a temporary stabilization of the content and organization of a particular policy domain at a certain policy level or over several policy levels*'. The Policy Arrangement Approach distinguishes the following four dimensions of policy arrangements (Leroy & Arts, 2006):

1. The *actors* involved in the policy domain, and their coalitions
2. The division of *resources* between these actors, leading to differences in *power* and influence
3. The *rules of the game* within the arrangement, either in terms of formal procedures or as informal rules and routines of interaction
4. The *policy discourse*, entailing the norms and values, the problem definitions and approaches to the solution of the actors involved

According to Leroy & Arts (2006), all four dimensions are equal sources of change and stability. Liefferink (2006) argues that these four dimensions are interrelated. In order to visualize this interrelatedness, he used a tetrahedron, in which each of the corners represents one dimension (see figure 6). Any change in one of the dimensions may induce a change in other dimensions (Liefferink, 2006). Below, the four dimensions will be described. Besides, an overview will be given of how the drivers of collaborative governance can emerge from the four dimensions of the PAA, and how the four dimensions of the PAA can be linked to the different elements within the collaborative governance regime.



*Figure 6: The tetrahedron symbolizing the interconnectedness between the four dimensions of policy arrangement (Liefferink, 2006)*

## Actors

First of all, the actors involved in the process should be identified. Actors may also be called participants, stakeholders, partners, parties, members or collaborators, depending on the context of the CGR (Emerson et al., 2012). Actors can represent themselves or other people or organizations and their number of may range from 2 to 10,000 or more (Emerson et al., 2012). It is important to identify all the actors involved because each actor brings in a set of individual attitudes, values, interests and knowledge (Emerson et al., 2012). Together with identifying the actors, their influence in the policy process can be determined. (Liefferink, 2006). Identifying the influence of the actors is important because actors work in distinctive ways, using particular processes (Ansell & Gash, 2007).

In this study, it is important to understand the roles and perspectives of the different actors, as it will influence collaborative outcomes. Within the collaboration dynamics, actors have a central role in each of the components: they need to be engaged in the process, share motivation and have the capacity for joint action.

## Resources/power

Actors can either be empowered or limited by resources. By linking the dimension of resources/power with the dimension of actors, power relations between actors can be identified (Liefferink, 2006). These power relations between actors can imply power imbalances between actors, which are a

commonly noted problem in collaborative governance (Ansell & Gash, 2007). Power and resource imbalances will affect the incentives of groups to participate in collaborative processes (Ansell & Gash, 2007). Besides, some dependencies between actors can be created because some actors might have control over certain resources (Liefferink, 2006). Understanding the relationship between resources and actors will give insight into the impact of a certain intervention. Examples of resources and power are subsidies, taxes, information. Resources and power can also be shifted between actors (Liefferink, 2006). This dimension is involved in different dimensions of collaborative governance: in the drivers of collaborative governance, and the component of capacity for joint action.

### **Rules of the game**

According to Liefferink (2006), rules are the mutually agreed formal procedures and informal routines of interaction within institutions. Rules are important because they govern the interactions between the actors involved (Liefferink, 2006). Just like resources and power, rules can limit or empower actors. Within the collaborative dynamics, the rules of the game are especially involved in the component of capacity for joint action. The rules governing the interactions between the actors involved (Liefferink, 2006).

### **Discourses**

Discourses can be seen as the written and unwritten rules governing the behaviour of actors (Liefferink, 2006). The dimension of discourses entails the norms and values, the definitions of problems and approaches to solutions of the actors involved (Leroy & Arts, 2006). Discourses are relevant at two different levels. The first level refers to the idea about the organization of society: the relationship between the state, market and civil society (Liefferink, 2006). The second level refers to the ideas about the problem at stake: about its character, its causes and possible solutions (Liefferink, 2006). Discourses might influence the components of principled engagement, shared motivation and capacity for joint action of the collaboration dynamics.

With these four dimensions, the system context can be described. Within this context, a situation may arise in which the current situation is determined as suboptimal and a change is needed. As stated before, a change in one of the dimensions may induce a change in other dimensions. These changes together with the aim for the desired situation, lead to the drivers for collaborative governance, which stress the importance to collaborate to achieve goals: leadership, consequential incentives, interdependency and uncertainty. Leadership can, for example, result from the discourse of the actor, where the influence in the policy process is described as well. Leadership can also be a result of access to certain resources. The drivers of consequential incentives and interdependency can result out of resource dependencies, where certain actors have to collaborate because they share control over important resources (Liefferink, 2006). For example, knowledge resources, according to Ansell & Gash (2007), power-, and/or resource and/or knowledge-asymmetries are often starting conditions for a collaborative process. The driver of uncertainty can also emerge from the resource/power dimension, because uncertainty can be a result of, for example, too little information or knowledge. Besides, uncertainty also emerges from the discourse dimension. This dimension entails the norms and values, which might not always be clear for all participants.

## 2.6 Conceptual framework

In this section, the theories and concepts that will be used in this research are visualized into a conceptual framework. Furthermore, seven hypotheses based on this conceptual framework will be given which indicate causal mechanisms. These hypotheses are formulated according to Emerson et al. (2012). How these hypotheses will be used, will be explained in section 3.2.

In this research, the theory of collaborative governance and the policy arrangement approach are combined to answer the following main question

*How can collaborative governance help integrate water safety and spatial quality in urban waterfront regenerations?*

The policy arrangement approach is used to complement the integrative framework for collaborative governance in describing the system context. Figure 7 shows the assumed interactions between the variables that eventually lead to collaborative outcomes. This conceptual framework will be applied to two different cases in this research.

First of all, the Policy Arrangement Approach will be used to analyze the system context from which drivers emerge for collaborative governance. This system context is described by the interaction of four variables: actors, resources/power, the rules of the game and discourses. Because, as argued by Liefferink (2006), these four variables are interrelated, they are visualized using arrows pointing both sides in figure 7. From this system context, at least one of the four drivers (leadership, consequential incentives, interdependency and uncertainty) for collaborative governance emerge. This causality will be tested with hypothesis one:

1. *At least one of the four drivers must emerge from the system context to start a collaborative process.*

These drivers form a starting point of the collaborative process. Within the collaborative dynamics, the three components of principled engagement, shared motivation and capacity for joint action, work together in creating collaborative outcomes. In the framework, the arrows point out the reinforcing and supporting character of the components. This reinforcing and supporting character can be summarized in three hypotheses:

2. *Principled engagement will enhance and help sustain shared motivation*
3. *Shared motivation will enhance and help sustain principled engagement*
4. *Principled engagement and shared motivation will generate and sustain capacity for joint action*

These collaborative dynamics create collaborative outcomes: actions (actions that could not have been attained by any of the organizations alone) and impacts (changes of state within the system context; adjustments in a preexisting condition; added value of a new social good). Concerning actions, the following hypothesis can be derived:

5. *Actions resulting from collaborative dynamics cannot be realized by the participants alone*

As stated before, impacts resulting from collaborative action are likely to be closer to the targeted outcomes with fewer unintended negative consequences when they are specified and derived from a shared theory of action. This shared theory of action is formed during the collaborative dynamics, predominantly in the component of principled engagement. This causality leads to the following hypothesis:

6. *A shared theory of action will lead to impacts with fewer unintended negative consequences*

Actions and impacts together can eventually lead to adaption; the ability to change the direction of a complex, uncertain, evolving situation. Because this study will review to what extent collaborative governance can help integrate water safety and spatial quality in urban waterfront regenerations, the collaborative outcome will be the integration of water safety and spatial quality in the two cases in Arnhem and Nijmegen. This leads to the following hypothesis:

7. *The working together of the three components of collaborative dynamics (principled engagement, shared motivation and capacity for joint action) will lead to a better integration of water safety and spatial quality in urban waterfront regenerations.*

The outcomes (actions, impacts and adaptation) will be evaluated using the three dimensions of the productivity performance on the unit of analysis of the target goal: equity, effectiveness and sustainability.

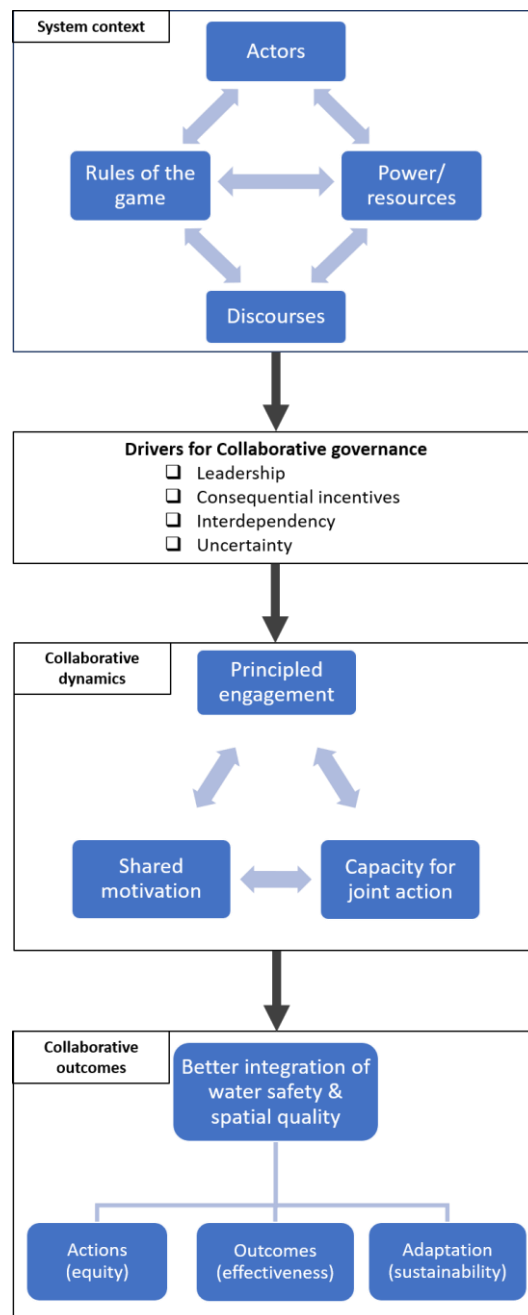


Figure 7: Conceptual framework (Author, 2020)

## 2.7 Operationalization

In the following part, the three different dimensions of this framework will be elaborated upon. For every dimension, an operationalization table will be given which shows the indicators of the different variables. The indicators specify what is meant by the variables and how will be measured in this research. These indicators are used to analyze the data of this research.

### 2.7.1 System context

First of all, the system context is described using the policy arrangement approach. This provides insights to answer the first sub-question: *what is the system context of the two regeneration projects in Arnhem and Nijmegen?* The policy arrangement approach consists of the interaction of four variables: actors, resources/power, the rules of the game and discourses. In table 1, the indicators of the different variables are shown. Below, the indicators will be explained. For both cases, these dimensions will be identified using the indicators. With an understanding of the system context using these four dimensions, the different drivers of collaborative governance can be identified.

Dimension	Variable	Indicators
System context	Actors	Actors involved
		Roles of the actors & influence in the policy process
	Resources/power	Financial resources
		Knowledge: natural science; social science; local knowledge
		Time
		Formal competences
	Rules of the game	Legislation
		Procedural norms
	Discourse	Expectations of other roles
		Definition of the problem
		Aims; interests; goals

Table 1: Operationalization of the Policy Arrangement Approach (Author, 2020)

#### Actors

First of all, the different actors involved and their influence on the policy process need to be identified. These actors can be both public and private actors and can fulfil several roles, as mentioned in section 2.5. A difference between central and more peripheral actors will be made, and actors that fulfil a similar role in the arrangement will be clustered (Lieverink, 2006).

#### Resources/power

After identifying the actors, the access to resources and the power that comes with this access can be derived. Actors can either be empowered or limited by resources. As stated before, resources include, first of all, financial resources, such as taxes and subsidies. According to Emerson et al. (2012), other types of resources are knowledge; skills and expertise and time. Knowledge refers to all the relevant knowledge for addressing a problem (Ansell & Gash, 2007). Examples of different types of knowledge include non-governmental stakeholders who have a better knowledge of their day-to-day behaviour; technical knowledge of construction codes; knowledge about applicable rules and regulations (van der Heijden, 2014). In a study to collaborative governance, Yang (2018) identifies three types of knowledge (see figure 8) which will be used as indicators of the element of knowledge.

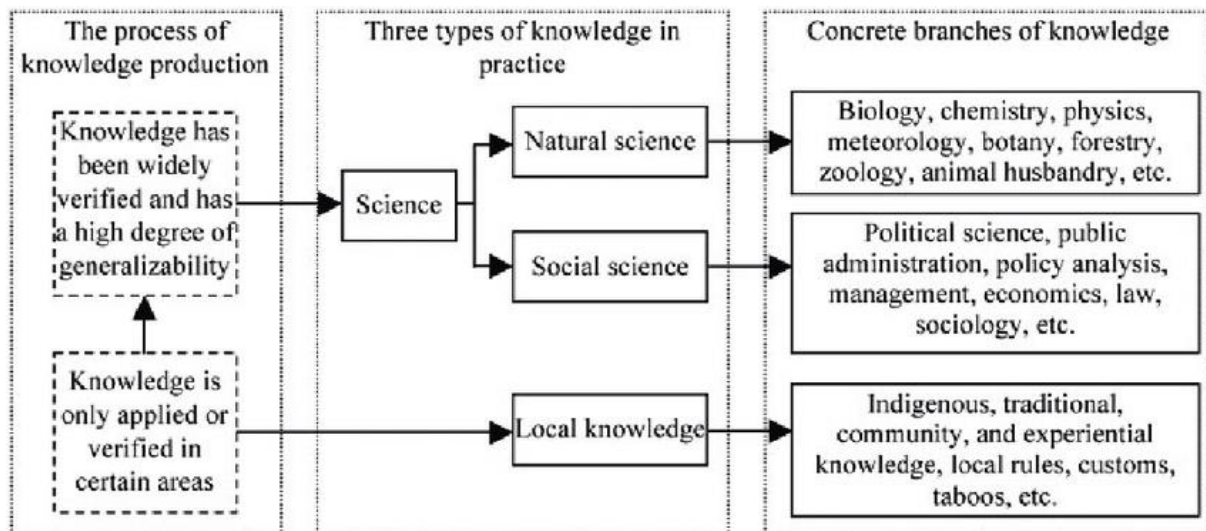


Figure 8: The classification of three types of knowledge (Yang, 2018)

With these three types of knowledge, overlap consists with the indicator of skills and expertise of Emerson et al. (2012). Therefore, skills and expertise will be included in the indicator of knowledge. The third type of resources, time, includes the available time of participants for a collaborative process (Emerson et al., 2012). Besides the powers derived from the access to resources, actors can also have power based upon formal or informal rules (Lieberink, 2006). In the operationalization table, this power will be indicated by formal competences. When the variables of the actors and the resources/power are linked, power relations between the actors can be identified (Lieberink, 2006).

### Rules of the game

Rules are the mutually agreed formal procedures and informal routines of interactions with institutions (Lieberink, 2006). These include the substantive laws, rules, regulations, mandates, executive orders, policy guidance memorandums, and other legal requirements that relate to the management of public resources and services (Emerson & Nabatchi, 2015 a). Besides, the rules include the procedural norms that affect opportunities for cross-boundary collaboration (Emerson & Nabatchi, 2015 a).

### Discourse

The variable of discourse consists of two levels. The first level entails the general ideas about the organization of society, the relationship between the state, market and civil society. This is measured by identifying the expectations of actors about the responsibilities of other roles/actors. The other level of discourse includes ideas about concrete policy problems. This is measured by identifying the problem according to the actors and the intended aims, interests and goals.

#### 2.7.2 Collaborative dynamics

After describing the system context using the four dimensions, the present drivers for collaborative governance can be derived. This forms the starting point of a CGR. The next step is to analyze the three components of the collaborative dynamics. For both cases, it will be analyzed how these components are present in the waterfront regeneration projects. This will provide an answer for the second sub-question: *what are the collaborative dynamics between the actors in Arnhem and Nijmegen?* By

analyzing the collaborative dynamics, barriers and success factors of the collaboration process can be identified. In table 2, the indicators of the different elements of the components of the collaborative dynamics. The determination of the indicators is explained below.

Dimension	Variable	Elements	Indicators
Collaborative dynamics	Principled engagement	Discovery	Shared interests
			Concerns
			Values
			Relevant and significant information and its implications
		Definition	Common purposes
			Common objectives
			Concepts and terminology
			Tasks & expectations of others
			Criteria for assessing information and alternatives
		Deliberation	Advocacy of (individual and represented) interests
			Effectiveness of strategies and interventions
		Determination	Procedural decisions
			Substantive determinations
	Shared motivation	Trust	Prehistory of collaboration
			Evaluation of prehistory of collaboration
		Mutual understanding	Understanding of other positions
			Understanding of other interests
		Legitimacy	Confirmation of trustworthiness
			Confirmation of credibility
		Commitment	Original motivation to participate
			Willingness to accept outcomes
	Capacity for joint action	Procedural & institutional arrangements	Informal norms
			Formal institutional design factors
		Leadership	Initiator
			Sponsor
			Convener
			Facilitator/mediator
			Scientific/technical expert
			Public decision maker
		Knowledge	Natural science
			Social science
			Local knowledge
		Resources	Financial resources
			Time
			Formal competences

Table 2: Operationalization of the Collaborative Dynamics (Author, 2020)



## Principled engagement

Principled engagement is the working together of four elements: discovery, definition, deliberation and determination. According to Emerson et al. (2012), the indicators of *discovery* are shared interests, concerns and values and the identification and analysis of relevant and significant information and its implications. *Definition* is the shared meaning achieved by expressing common purpose and objectives; agreeing on the concepts and terminology that will be used; clarifying tasks and expectations of one another; and setting forth shared criteria with which to assess information and alternatives (Emerson et al., 2012). These aspects are used as indicators of the element of definition. As stated before, *deliberation* is the communication across boundaries between participants. The quality of deliberation depends on the skilful advocacy of individual and represented interests, and the effectiveness of conflict resolution strategies and interventions (Emerson et al., 2012). *Determination* consists of procedural decisions and substantive determinations. Procedural decisions include, for example, setting agendas, tabling a discussion and assigning a workgroup. Substantive determinations consist of reaching agreements on action items or final recommendations (Emerson et al., 2012).

## Shared motivation

Shared motivation consists of four elements: trust, mutual understanding, internal legitimacy and commitment. First of all, *trust*, which is influenced by a prehistory of collaboration: a prehistory of conflict is likely to express itself in levels of trust (Ansell & Gash, 2007). Therefore, the prehistory of collaboration and the evaluation of this prehistory are used as an indicator of trust. Emerson et al. (2012) define *mutual understanding* as the ability to understand and respect others' positions and interests and is, therefore, indicated by these two aspects. *Legitimacy* is the confirmation that participants are trustworthy and credible, with compatible and interdependent interests. The confirmation of these two factors are used as indicators. *Commitment* is the ability to cross boundaries that previously separated them and commit to a shared path. According to Ansell & Gash (2007), it is closely related to the original motivation to participate in collaborative governance. Therefore, this is an indicator of commitment. Commitment to the process also requires an up-front willingness to accept the results of deliberation, this is, therefore, the second indicator of this element (Ansell & Gash, 2007).

## Capacity for joint action

Capacity for joint action is the combination of four elements which together create the potential for taking effective action. The four elements are procedural and institutional arrangements, leadership, knowledge and resources. *Procedural and institutional arrangements* include the range of process protocols and organizational structures necessary to manage repeated interactions over time. This entails informal norms, such as agreements to mediate ground rules, operating protocols, decision rules, and more formal institutional design factors, such as charters, by-laws, rules and regulations (Emerson et al., 2012). *Leadership* in the collaborative process is important for several reasons. is important for bringing stakeholders together and getting them to engage each other (2007). It is crucial for setting and maintaining clear ground rules, building trust, facilitating dialogue and exploring mutual gains (Ansell & Gash, 2007). Different leadership roles can be identified. As these indicate the presence of leadership, these roles are used as indicators of leadership. The leadership roles include the following roles (Emerson et al., 2015 a):

- The *initiator*, who invests in starting a collaborative process
- The *sponsor* typically pays for some of the upfront costs of a CGR
- The *convener* assists in creating the right conditions for collaboration and bringing in diverse and representative participants to the table
- The *facilitator/mediator* brings their professional expertise to bear as an impartial manager of collaboration
- The *scientific and technical experts* provide leadership in helping participants understand research findings and their implications for the issue at hand. They translate complex information and analyses for the participants and the public.
- *Public decisions makers* provide leadership as supporters and advocates of the CGR at the outset and as the final decision-makers and implementers of CGR recommendations or directions

The third element, *knowledge*, refers to all the relevant knowledge for addressing a problem (Ansell & Gash, 2007). For this element, the three types of knowledge as defined by Yang (2018) are the indicators. This element is also used to indicate the element of resources in the system context and will, therefore, not be further elaborated upon here.

The element of *resources* is also used to describe the system context. As stated before, resources include financial resources; knowledge resources; skills and expertise; and time. Power can also be seen as a resource and can be indicated by formal competences. The indicator of knowledge resources is left out in this part of the table because knowledge is a separate element of capacity for joint action.

### 2.7.3 Productivity performance

After assessing the collaboration dynamics, the productivity performance can be measured. This performance entails the actions, outcomes and adaptation resulting from collaborations, which can be measured at the end of an operating cycle. Measuring the productivity performance of the collaborative governance processes will provide an answer to the fourth sub-question: *how is the productivity performance of the CGR assessed?* In table 3, the indicators of the different variables are presented.

Dimension	Variable	Indicator
Collaborative outcomes	Equity	The objective measure of the distribution of benefits
		Beneficiaries' perception about the equitable distribution of costs and benefits
	Effectiveness	Goals & aims of the GCR
	Sustainability	The extent to which adaptive responses are sustained over time

Table 3: Operationalization of the collaborative outcomes (Author, 2020)

#### Equity

As mentioned before, there are two indicators of equity. The first one is the objective measures of the distribution of net benefits, the second indicator is the perception of the beneficiary about the equitable distribution of the costs and benefits associated with actions (Emerson & Nabatchi, 2015 b)

**Effectiveness**

Effectiveness is the extent to which the CGR's actions produce their intended effect. According to Emerson & Nabatchi (2015 *b*), this can be measured by the judgement of observers or participants. Measures for effectiveness are explicitly stated and more objectively measured goals and aims of the collaborative process, which are formed early on by the CGR (Emerson & Nabatchi, 2015 *b*).

**Sustainability**

Sustainability is the ability to continue the demonstrated effects over time. The desired level of sustainability for achieving target goals should be reflected in the strategies for change. According to Emerson & Nabatchi (2015 *b*), a primary indicator is the extent to which adaptive responses to the outcomes on the target system, condition or service are sustained over time.

### 3. Methodology

In this chapter will be discussed how the research is conducted and which methodological choices were made. This chapter consists of three sections. First, in section 3.1 the research philosophy will be discussed, together with the research strategy. In section 3.2, the research methods, data collection and data analysis will be elaborated upon. In the last section, the validity and reliability of this research will be discussed.

#### 3.1 Research philosophy & research strategy

In every research, the researcher is affected by a basic belief system: a paradigm, which is based on ontological, epistemological and methodological assumptions. (Guba & Lincoln, 1994). The ontological question focusses on reality; what is reality and what can be known about it? (Guba & Lincoln, 1994). The epistemological question focusses on the relationship between the knower and what could be known (Guba & Lincoln, 1994). The methodological question focusses on how we can go about finding out whatever he or she believes can be known (Guba & Lincoln, 1994). Based on these questions, four paradigms can be distinguished: positivism, post-positivism, critical theory and constructivism (Guba & Lincoln, 1994).

This research fits within the paradigm of constructivism. Within this paradigm, reality is assumed to be a social construction, experientially based and local and specific in nature (however, elements are often shared). Such constructivist research in general aims to understand specific situations, which is in this case the role of collaborative governance in integrating water safety and spatial quality. To gain a deeper understanding of this, the main research strategy of a case study is chosen. In a case study, one or several cases of the subject of study are examined in an everyday, real-life setting, which provide a richly detailed and extensive description of the phenomenon under study (van Thiel, 2014). In this study, this will mean that a deep understanding of the different perceptions and the interactions between the actors involved in collaborative governance is possible. Besides, the evaluative aim of this study can also be seen as an argument for a case study, according to van Thiel (2014).

Existing literature on the policy arrangement approach and collaborative governance is used to apply to two specific cases of urban waterfront regenerations. Therefore, this research can be seen as deductive, as it makes use of existing theories that are being researched in an empirical situation (van Thiel, 2014).

##### 3.1.1 Case selection

According to van Thiel (2014), after the researcher has decided to do a case study, several choices have to be made in selecting the cases. First of all, a decision must be made as to how many cases will be studied (van Thiel, 2014). In this research, the aim is to understand the role of collaborative governance in integrating water safety and spatial quality in urban waterfront regenerations. To gain this understanding, two cases of urban waterfront regenerations are studied. Therefore, this research can be seen as a multiple case study.

The second choice to be made is to how the cases will be selected. In this research, the two cases are selected on a homogeneous set of elements:

1. The cities have a comparable location, a comparable city structure and a comparable amount of citizens;

2. Both the quays are on the edge of the city centre, have a comparable length and fulfil comparable functions;
3. Both quays can be defined in the same category of urban waterfront, according to the criteria of Wrenn et al. (1983);
4. In both projects, multiple stakeholders are involved, including non-governmental actors, which is a criterion for collaborative governance.

By selecting cases on a homogeneous set of elements, purposive sampling is used. This is a form of non-probability sampling, where the selection made by the researcher lies in a theoretical ground (van Thiel, 2014). Because homogenous cases are studied, the research findings are expected to be homogeneous as well (van Thiel, 2014).

The third consideration for the researcher is the number of measurements that have to be considered. Because this research has an evaluative aim and because of the limited amount of time, just one moment of measurement will be used.

After deciding on the number of cases, the selection of the cases and the moment of measurement, the researcher has to decide which methods and research techniques to use (van Thiel, 2014). Following Guba & Lincoln (1994), the methodology of constructivist research is based on the interaction between and among the researcher and respondents. The researcher and the object of study are, therefore, assumed to be interactively linked.

### 3.2 Research methods

This research aims at evaluating the role of collaborative governance in the integration of water safety and spatial quality in urban waterfront regenerations. To better understand this role, a better understanding of the causal mechanisms is needed. To examine what causal mechanisms within a case explain the outcome of this case, the method of process tracing can be used (Collier, 2011). Process tracing is a qualitative research method of 'backwards reasoning', where a specific outcome is being explained by tracing back how influential factors played a role in the creation of that outcome (Voorberg et al., 2014). It focusses on the unfolding of events or situations over time (Collier, 2011). In process tracing, the evidence is systematically examined with the help of research questions and hypotheses posed by the investigator (Collier, 2012).

In this research, process-tracing is used to test theoretical propositions (hypotheses) and to gain possible explanations (causal mechanisms) for successful integration of water safety and spatial quality in urban waterfront regenerations through collaborative governance. There are three types of process tracing: theory-testing, theory-building and explaining-outcome process tracing (Punton & Welle, 2015). In this research, theory-testing process tracing will be used.

According to Voorberg et al. (2014), case selection in process tracing is based on the dependent variable, since process tracing is aimed at explaining a specific phenomenon. In this study, the dependent variable is the integration of water safety and spatial quality through collaborative governance. There will be examined to what extend influential factors, which are derived from the literature, are influential to this dependent variable (Voorberg et al., 2014).

According to Punton & Welle (2015), there are several steps in process tracing. The first one is to develop one or more hypothesized causal mechanism(s) (Punton & Welle, 2015). In section 2.6 seven hypotheses are given. These hypotheses are based on causal mechanisms in the conceptual framework which are derived from the literature on the PAA and collaborative governance. This will help to

determine how influential factors played a role in the integration of water safety and spatial quality. The second step in process tracing is the operationalization of the causal mechanism (Punton & Welle, 2015). This has been done in section 2.7, where the indicators for the different variables have been given. The third step is to collect evidence for the different hypotheses (Punton & Welle, 2015). Section 3.2.1 will be elaborate on how evidence will be collected. Step four in process tracing is to assess the weight of the evidence (Punton & Welle, 2015). This can be done by using four tests: straw-in-the-wind tests, hoop' tests, 'smoking gun' tests and 'doubly decisive' tests. These tests are designed along two dimensions: *necessary* for affirming causal inferences or *sufficient* for affirming causal interference, see table 4 (Voorberg et al., 2014). Below, the tests are explained and the hypotheses are classified along with the different tests.

		Sufficient for affirming causal interference?	
		No	Yes
Necessary for affirming causal reasoning?	No	<i>Straw-in-the-wind</i>	<i>Smoking-gun</i>
	Yes	<i>Hoop</i>	<i>Doubly decisive</i>

Table 4: Classification of hypotheses (Bennett, 2010 in: Voorberg et al., 2014)

### Straw-in-the-wind

Factors subjected to a straw-in-the-wind test give valuable information that may favour a given hypothesis but are not decisive by themselves, there might be other explanations for the outcome (Voorberg et al., 2014). Therefore, a straw-in-the-wind test provides neither a *necessary* nor a *sufficient* criterion for accepting or rejecting a hypothesis. If a given hypothesis passes a straw-in-the-wind test, it only slightly weakens rival hypotheses (Collier, 2011).

Hypotheses 2, 3 and 4 will be tested with a straw-in-the-wind test.

### Hoop

Factors subjected to a hoop test provide a *necessary*, but not a *sufficient* criterion for an exception the explanation (Voorberg et al., 2014). Hoop tests do not confirm a hypothesis, but they can eliminate it (Collier, 2011).

A Hoop test will be applied to hypotheses 1, 5 and 6.

### Smoking-gun

Passing a smoking gun test may validate an explanation strongly over another, but doesn't rule out other possibilities to be of importance as well (Voorberg et al., 2014). A smoking-gun test provides a *sufficient*, but not a *necessary* criterion for accepting the causal interference. If a given hypothesis passes a smoking-gun test, it substantially weakens rival hypotheses (Collier, 2011).

Hypothesis 7 will be tested with a smoking-gun test.

### Doubly Decisive

Doubly-decisive tests rule out one explanation over another (Voorberg et al., 2014). They meet both the *necessary* and *sufficient* standard for establishing causation (Collier, 2011). Tests that accomplish this are rare in social science (Collier, 2011; Voorberg et al., 2014). Also in this case, no hypotheses can be tested with this test.

### 3.2.1 Data collection

In a case study, a large body of data is gathered, usually using different methods (van Thiel, 2014). In this research, the two qualitative methods of interviews and content analysis are used to gather data. For the content analysis, documents as, for example, reports and minutes of meetings and vision documents of the cities, will be analyzed. Next to the content analysis, interviews are used to gather information. For this study, semi-structured interviews are used. These interviews have some degree of predetermined order but still, ensures flexibility in the way issues are addressed by the informant (Clifford et al., 2010). In these interviews, an interview manual or topic list is used as a guideline. The interview questions are based on the operationalization of the variables derived from the theoretical framework (see section 2.7) and on the hypotheses mentioned in section 2.6. For every interview, a separate list with questions or topics has been made. For an overview of the questions that were asked during the interview, see appendix 2 & 3. In this appendix, all questions have been brought together into one interview guide per case. Therefore, some questions or topics are duplicated. Besides, not all questions were asked to all respondents.

### Selection respondents

The selected respondents for this research are all intensively involved in the urban waterfront regeneration projects in Arnhem and Nijmegen and are, therefore, well-informed on this topic. This can also be seen as a criterion for selecting the respondents. Therefore, all respondents are purposely chosen and the selection can be seen as non-probability sampling. This type of sampling means that a selection is made by the researcher on theoretical grounds (van Thiel, 2014).

The table with respondents is included in appendix 4. If the respondents wished to remain anonymous, their name, organization and/or function was replaced by '*confidential*'. In the text, there will be referred to the interviews with R.#, with the # standing for the respondent number.

### 3.2.2 Data analysis

After conducting the interviews, all interviews are literally transcribed. These transcribed interviews are not included in the appendices but can be requested by the researcher. Afterwards, these interviews are coded and analyzed using the program Atlas.ti. The codes are based on the variables and the indicators of the operationalization of the concepts, see section 2.6. The coding scheme used to analyze the data can be found in the appendix.

### 3.2.3 Ethical considerations

In every scientific research, the researcher has to follow certain research ethics (van Thiel, 2014). Van Thiel (2014) listed five ethical rules for doing scientific research, which will be used here to discuss the ethical considerations of this research.

First of all, *informed consent*, where the researcher has to gain permission from the units of study to carry out the study and publish the results later (van Thiel, 2014). In this research, all participants have received information about the study and their participant rights, before the interview would take place. Participant rights include the right to withdraw from the research up till three weeks after the interview, the right to ask questions about the study, the right not to answer certain questions and the right to make changes in the transcript after the interview has taken place. This corresponds to the ethical rule of *privacy*. This rule implies that the units of study have the right to refuse to participate in

the study or to withhold information (van Thiel, 2014). The researcher has to respect such decisions and needs to stress that the respondent is free to refrain from replying to certain questions (van Thiel, 2014). All the information about the research and the participants' rights is written down on the privacy contract. This is a two-sided contract; on the one hand, the participants agree that they agree to participate and are aware of their participant rights. On the other hand, the researcher will reach an agreement with the units of study on how exactly the information will be used. Which is in line with the rule concerning *confidentiality* (van Thiel, 2014). Besides, the researcher declares that records and transcriptions of the interviews will be saved on a secured computer and will be removed after the research. The privacy contract is included in the appendix.

Since attention was paid to introducing the research and its aim, the participants were well informed and chances of misleading were limited. This contributes to another ethical rule: *veracity*. This means that research should never be misleading (van Thiel, 2014). Furthermore, the research aim has to be positive and should not be intended to do harm, which is described as *beneficence* by van Thiel (2014). As the main aim of this research is to gain more insight and thus contributing to the acquisition of knowledge, it can be seen as a positive intention that is not intended to harm anyone or anything.

### 3.3 Validity and reliability of the research

After having explained the research philosophy, strategy, techniques, methods, data collection and analysis, it is important to discuss the reliability and validity of the research, as these contribute to the quality of the research.

First, validity, which focuses on whether the research measures what is intended to measure. According to van Thiel (2014), there are two types of validity: internal and external validity. Internal validity refers to the effectiveness of the study and is the extent to which the researcher has measured what was intended to measure. In a case study, internal validity tends to be high due to the amount of information that is collected (van Thiel, 2014). Besides, in order to increase the internal validity, extra attention was paid to the operationalization, to ensure that the operationalization is an adequate translation of the theories.

External validity is the extent to which a study can be generalized (van Thiel, 2014). Usually, in a case study, it appears difficult to generalize findings to other situations, either because the case is unique or because results only apply to the particular context that has been examined (van Thiel, 2014). This means that the external validity of a case study is generally low. Especially with the method of process tracing, generalization can be problematic, because causal mechanisms are operationalized in specific cases (Collier, 2011). In an attempt to increase the external validity, two cases are included in this study who are both selected on a set of homogeneous criteria. In this way, general findings can be found.

The reliability of a study consists of the accuracy and consistency of the variables measured (van Thiel, 2014). Accuracy refers to the measurement instruments that are used, which in this case are the interview guidelines. The choice for semi-structured interviews may cause limited reliability because each interview might be slightly different from the one before. However, the consideration has been made that the flexibility of this type of interview is more important. Then consistency, which is about the repeatability (van Thiel, 2014). A point of consideration here is the fact that this research was executed by one researcher. Because there was limited variation in the interpretation of the results, this might limit the reliability. To counter this problem, the interviews will be transcribed literally, contributing to its accuracy. Besides, the steps taken in this research and the data sources will be documented, so that the whole process can be reviewed or checked afterwards (van Thiel, 2014).



In case study research, triangulation is often used to counter problems that may arise with concerning reliability and validity (van Thiel, 2014). In this study, triangulation is applied to data sources and research methods; information is gathered using different data sources (people and document) and using different research methods (document analysis and interviews).

As stated before, the research findings are expected to be homogeneous as well, because of homogenous cases are studied. If it appears that the same results are found in the two different cases, the effects might be generalizable to similar cases that have not been studied (van Thiel, 2014).

## 4. Results Rijnkade, Arnhem

In this chapter, the results for the Rijnkade in Arnhem will be discussed. First, a further introduction to the Rijnkade will be given, followed by a process reconstruction. In section 4.3, the results will be interpreted and analyzed using the seven hypotheses mentioned in section 2.6. When references are made to the interviews, this will be done by mentioning *R.#*, with the # standing for the respondent number.

### 4.1 Introduction

The Rijnkade is located at the south side of the city centre of Arnhem. As stated before, the quay consists of a lower quay and a higher quay. The higher quay consists of a one-way street with houses and catering facilities along with it. At the higher quay, there is are mainly houses and catering facilities. The houses can mainly be found at the east and west part of the quay, the bars, restaurants and hotels can especially be found in the middle of the quay. Most of these are united in an entrepreneurs association. On the higher quay, also parking lots and benches can be found. At the lower quay, boats can moor and cars can be parked. Arnhem is a departure port for Rhine cruises (Waterschap Rijn en IJssel, 2018 a). Along the whole quay, there are many opportunities to switch from the lower to the higher quay.

From 2005 to 2010, the water board has extensively researched and tested the Rijnkade (Hommes, 2017). The Rijnkade no longer met the safety norm, the quay was rejected of a length of 1.2 kilometres (HWBP, 2019 b). This is the part located at the southside of the city centre, in between the Nelson Mandelabrug and the John Frostbrug (HWBP, 2019 b). See figure 9, 10 and 12 for the location of the Rijnkade and the rejected part.

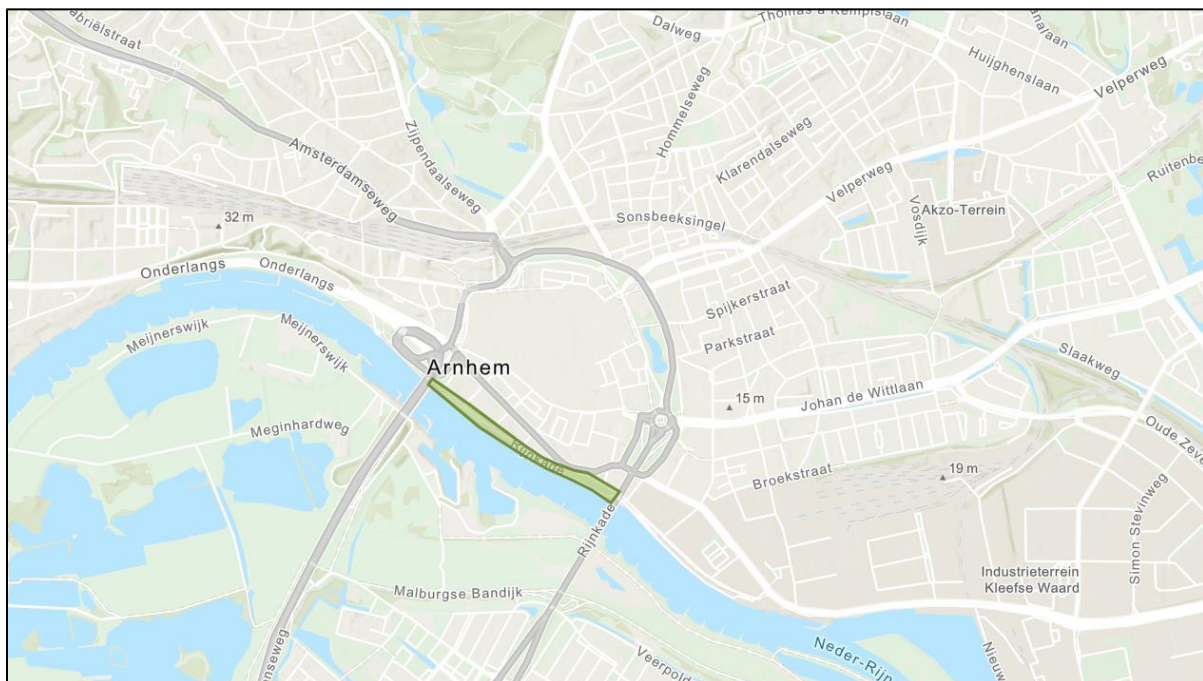


Figure 9: Location of the Rijnkade (in Green) in Arnhem (Author, 2020)

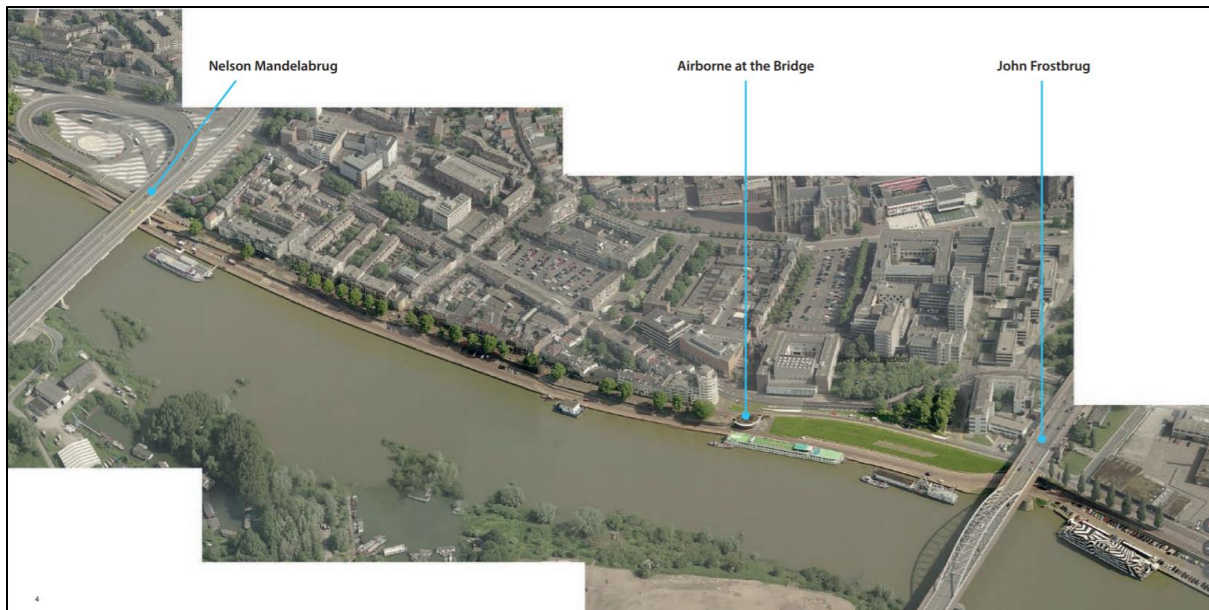


Figure 10: Rijnkade Arnhem (Waterschap Rijn en IJssel, 2018 a)

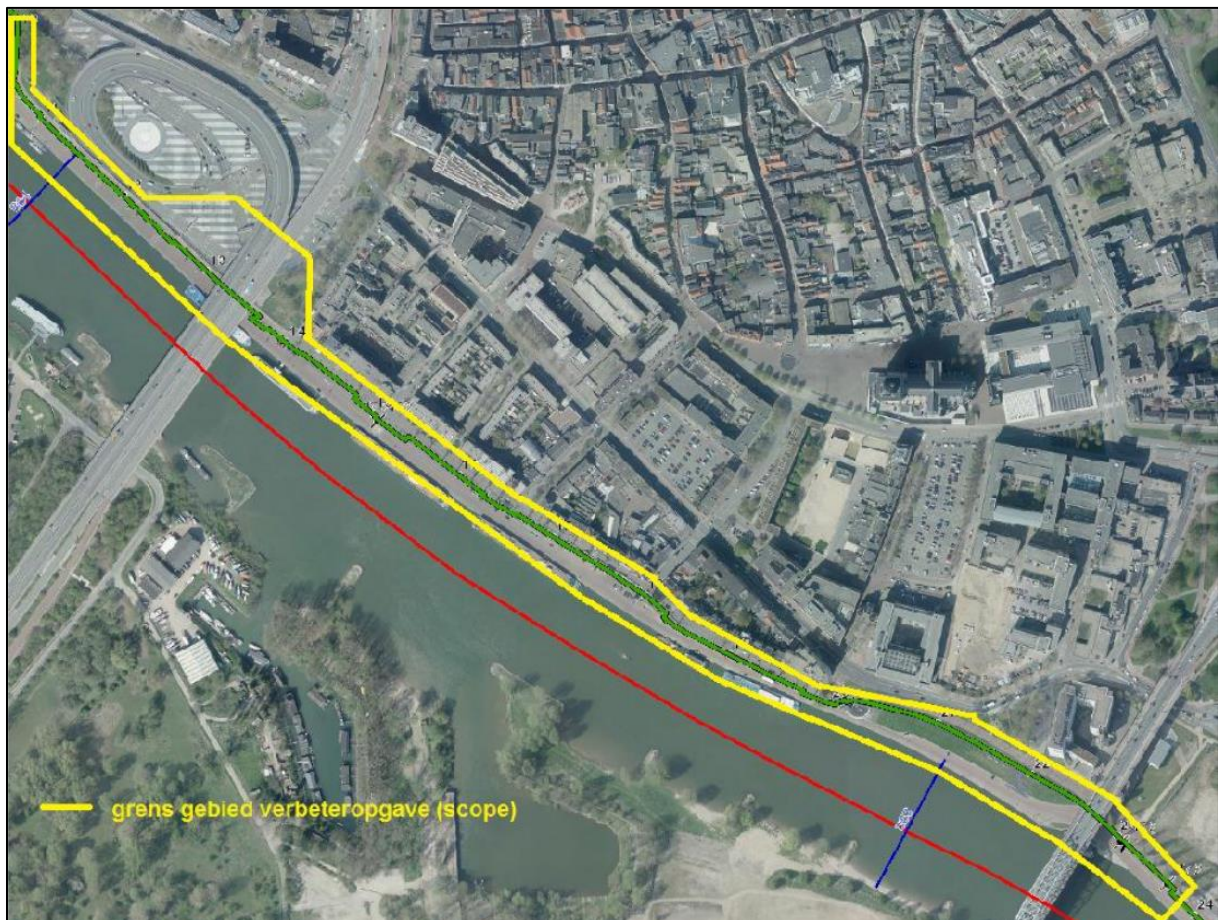


Figure 11: Part of the Rijnkade that needs to be improved (in yellow) (Hommes, 2017)

The quay is rejected on the following points (Hommes, 2017):

- Instability of the high retaining wall
- The presence of trees on the higher quay



- Two sewer pipe sections in the lower quay
- The coating

Compared to the other projects in the Dutch Flood protection programme, the strengthening of the quay in Arnhem is number 135 of the in total 175 projects (HWBP, 2019 b). According to the programme, these strengthening projects should be executed by the local water authority, in this case, the water authority Rijn en IJssel. This water authority is a decentralized governmental organization responsible for water safety, water quality and water quantity. In this specific case, the water authority needs to ensure a safe flood defence for the city of Arnhem.

There are two tasks for the water authority in such a strengthening project: the task to strengthen the flood defence (*versterkingsopgave*) and the task to let the flood defence integrate into the environment task (*inpassingsopgave*). This last task concerns location-specific measures or facilities that are necessary to prevent, limit or compensate the adverse effects of a project (Van Rijswijk, 2014). Good integration is always an element of a DFPP-project because it is required by law (Hommes, 2017). The costs for this integration are, therefore, part of the subsidized costs from the DFPP (HWBP, 2014; Van Rijswijk, 2014). The strengthening and the integration task should be realized soberly and efficiently, as stated by the Dutch Flood Protection Programme.

Sometimes, it is desirable to include other additional objectives of partners in the region that are not water safety (HWBP, 2014; Van Rijswijk, 2014). These other objectives are called linking opportunities. Linking opportunities are not subsidized and have to be fully paid by the claimant of such an opportunity.

Despite this relatively low urgency of the quay in Arnhem from the water safety perspective, the municipality of Arnhem together with the water authority Rijn & IJssel decided to start the project earlier. The reason for this advance is that the city of Arnhem is working on improving the south-side of the city centre (Bouman, 2019). Therefore, the opportunity of the municipality to improve the Rijnkade should be seen as a linking opportunity. Because the municipality is responsible for the public space, they also have several requirements of how it should be arranged. These requirements include preconditions for traffic, greenery, urban planning, roads and sewerage.

In 2010, the municipality presented a vision on the Rijnkade, which is still current. In this vision, it is mentioned that the quay is in a bad condition (Smits, 2010). Other spatial bottlenecks mentioned are a weak spatial cohesion and functional relationship between the quay and the city, the physical and visual barrier between the high and low quay and the low residential quality, due to the lack of special and attractive public space (Smits, 2010). Measures mentioned in this vision to create a better place are, amongst all, the transformation to a residential area where the emphasis is on pedestrians and cyclists, instead of motorized traffic, less parking places on both the low and the high quay and making it more attractive for boats to moor at the quays (Smits, 2010). The relation between the lower and higher quay will be strengthened by introducing more uniformity in the materialization of the quays, and in the design of the entrances and exits and the stairways (Smits, 2010). Besides, the quality of stay and the attractiveness of both the higher and the lower quay will be improved by creating places where people can enjoy the view over water and greenery and by making elements that disturb the image, inconspicuous (Smits, 2010).

In 2014, the municipality of Arnhem presented a new plan to improve the southern part of the city centre, including the Rijnkade, because the southern part of the city centre was lacking in attractiveness and quality (Gemeente Arnhem, 2014). One of the ambitions mentioned in this plan was to bring the Sint Jansbeek above ground, because Arnhem originated on the Sint Jansbeek and not on the Rhine (Gemeente Arnhem, 2014). When the municipality came up with this plan, they contacted

the water authority because the Sint Jansbeek had to go through the primary flood defence of the water authority to flow into the Rhine (R.2). At that point, the water authority mentioned that the flood defence would be rejected in the coming years (R.2). Therefore, they decided to temporarily pump the stream over the quay. Besides, they then expressed their ambition to see whether they could jointly tackle the dyke reinforcement project of the water authority in the future at the same time as the wish of the redesign of the higher quay of the municipality (R.2). This can be seen as the starting point of the collaboration between the municipality of Arnhem and the water authority Rijn en IJssel on the Rijnkade. In a characterization of the area, the return of the Sint Jansbeek has greatly improved the connection between the lower and the higher quay (Cirkel, 2018).

## 4.2 Process reconstruction

Within every DFPP process, four different phases can be distinguished: the plan preparation phase, exploratory phase, the plan elaboration phase and the realization phase. These phases are used in this study because, after every phase, an explicit decision is made. This structure makes it possible to apply the method of process-tracing. In this section, the project will be described using the different phases.

### 1. Plan preparation phase

First of all, the plan preparation phase (*planvoorbereidingsfase*). This phase is not an official DFPP-phase.

In this phase, conditioning research is being done and there is being assessed what it takes to make the Rijnkade meet the safety requirements again. Besides, the water authority and the municipality started to identify and define all possible wishes, the integration tasks and the linking opportunities (Hommes, 2017).

The first step in this process is an analysis of the safety tasks and the mapping of the current situation, which has been done by desk studies and site measurements (Hommes, 2017). Based on these results, a working session was held in March 2016 with the municipality in which information was exchanged and it was examined whether things were missed or were incorrectly displayed (Hommes, 2017). During this session, a division of the total process into partial processes appeared to be important to keep a clear picture of customized solutions (Hommes, 2017).

Second, the water authority and the municipality jointly investigated where there might be linking opportunities and where integration tasks could appear (Hommes, 2017). At this moment, the main stakeholders were also approached about this (Hommes, 2017). The results of this are discussed in April 2016, in a working session in which the most important disciplines within the water board and the municipality of Arnhem participated (Hommes, 2017).

The third step was the analysis of possible building blocks and promising alternatives (Hommes, 2017). Based on this analysis, a consultancy identified where the technical risks lie and how to deal with them and an architect made sketches to support the discussion in the work session (Hommes, 2017)

The results of these first three working sessions are discussed with the most important stakeholder, amongst all Rijkswaterstaat, the water management department of the water authority, the traffic department of the municipality, the urban planning department and the Q-team of the municipality, a quality team that monitors the quality of the residential and living environment (Hommes, 2017)

During this phase, the water authority started to find relevant stakeholders and made them aware that they will soon start to work on this project (R.1). The engagement manager of the water authority described this phase as follows: *'in the exploration phase you want to bake a cake, in the pre-exploration phase you have to make sure that you already have the ingredients together.'*

## **2. Exploratory phase (April 2017 – December 2018)**

After collecting the 'ingredients', in April 2017, the exploratory phase (*verkenningsfase*) started by the water authority (Kooijman, 2017). In this phase, the possible alternatives are being investigated, together with other relevant stakeholders (HWBP, n.d.). This results in a preferred alternative (*voorkerusalternatief*), which has to be adopted by the board of the water authority (HWBP, n.d.).

In a meeting with the general board of the water authority in September 2017, an investment proposal has been done to the board. The advice was to increase the investment credit for the exploratory phase, which was, amongst all, necessary for a longer lead time for a careful process with the municipality (Waterschap Rijn en IJssel, 2017 a). In this meeting, board members mentioned that this project could be a good opportunity to increase the brand awareness of the water authority (Waterschap Rijn en IJssel, 2017 b). Besides, they complemented the collaboration with the municipality, as it appears relatively new to develop in consultation with the municipality (Waterschap Rijn en IJssel, 2017 b). The proposal to increase the investment credit was adopted by the general board (Waterschap Rijn en IJssel, 2018 b).

At the same meeting the investment proposal has been done, the board was asked to take note of the declaration of intent (*intentieverklaring*) between the water authority and the municipality of Arnhem. In this declaration, they stated that they jointly support the ambition to realize the objectives of the Rijnkade: the water safety task and the municipal vision (Kooijman, 2017). They aim to jointly investigate possible linking opportunities which can be combined with the leading goal: the water safety task (Kooijman, 2017). The collaboration is aimed at exchanging, strengthening and integrating knowledge, experiences and working methods (Kooijman, 2017). Besides, the declaration states that the parties strive to communicate jointly and clearly with the area around the Rijnkade and that the water authority will be the spokesperson for the Rijnkade Arnhem project (Kooijman, 2017). In this declaration also the outlines of the project and the linking opportunities are described. The following linking opportunities and integration tasks are identified:

- Bringing the Sint Jansbeek above ground and construct stairs at the quay (integration task and linking opportunity).
- Redesign of the higher quay (integration task and linking opportunity). The municipality wants to strengthen the relationship between the lower and the higher quay, which will increase the connection between the city and the river and it will increase the added value of the whole Rijnkade (Hommes, 2017). Because of the possibility to save costs and limit nuisance, it is decided that this municipal project will be linked to the realization of the flood defence (Hommes, 2017).
- Redesign of the traffic junction Roermondsplein/the realization of green branches (integration task and linking opportunity)
- Replacement of the sheet pile wall (linking opportunity)

The boundaries between the integration tasks and the linking opportunities will be investigated later in the exploratory phase (Hommes, 2017). After taking note of this declaration, both the water authority and the municipality signed the declaration of intent.

During the exploratory phase, intensive collaboration with stakeholders started. In order to execute the integration task as well as possible, the water authority invited other parties to share their opinion. From April to October 2017, exploratory talks were held with entrepreneurs and residents of the Rijnkade (Waterschap Rijn en IJssel, 2018 a). Questions were asked about the current experience of living or doing business on the Rijnkade and about the issues that are important to them and which interests are involved. (Waterschap Rijn en IJssel, 2018 a). Subsequently, questions were asked about ambitions and how they can be seen in concrete terms. The issues related to safety, both to social safety as to traffic safety. There were no issues concerning water safety (Waterschap Rijn en IJssel, 2018 a). Based on these conversations, the spatial vision for the Rijnkade, as drawn up by the municipality of Arnhem, and the program *vibrant city centres at the River* of the province of Gelderland, four design themes were developed (Waterschap Rijn en IJssel, 2018 a; Cirkel, 2018). Based on this vision, the important features for the Rijnkade are the connection of the green strip/canals to the Rhine, the outflow from the Sint Jansbeek and the flattening out of the small offsets in the quay and replacing it with a firm hook in two places (Cirkel, 2018). In figure 12, the spatial concept for the Rijnkade is visualized.

With the designs, the connection between the city and the river should be strengthened in a way that the liveliness of the area can be enhanced by creating new residential spaces (Cirkel, 2018). Due to the location of the Rijnkade, on the one hand, located in an urban area with hardly any possibilities to shift towards the city, and on the other hand directly along the river, with river restrictions for shifting towards the river, the range within which the spatial alternatives can be formed, is limited (Cirkel, 2018). For that reason, the four alternatives are broadly similar.



Figure 12: The spatial concept for the Rijnkade (Cirkel, 2018)

The four design themes are as follows:

1. Rijnfront (*Rhine front*). This design meets the principles for sober and efficient. The design is simplified and has a modest appearance.
2. Groene Rijnkade (*green Rhine quay*). The quay will become part of a more attractive and healthy living environment. The new design offers opportunities for more greenery on the high quay, climate-proof measures by retaining more water in the soil and reducing heat stress on the quay. In this alternative, the quay will be moved towards the water, which will ensure extra space on the higher quay.
3. Water (*water*). This design is about strengthening the connection between the water, the lower quay and the higher quay.
4. Levendige Rijnkade (*lively Rhine quay*). This design aims to increase the vibrancy of the quay. With restaurants and the possibilities for festivals on the quay, the liveliness and appeal of the quay will be increased.

The four designs were presented in November 2017 at the first walk-in meeting (*Rijnkadecafé*). Interested parties were asked which topics still need to be added to the designs, if the interests and issues previously discussed were sufficiently processed in the designs and how they appreciated the four designs. The input of this session is incorporated into customer requirements and is formally registered (Waterschap Rijn en IJssel, 2018 a). This first meeting can be seen as value-creating.

After this meeting, the designs were further developed. A few design solutions were optional: options for the area near the embankment of the Nelson Mandela bridge, the outflow from the Sint Jansbeek and the connection of the quay at the Airborne at the Bridge museum (Cirkel, 2018).

In February 2018, the second walk-in meeting was organized. In this meeting, visitors were asked to advise the water authorities on their choice of the presented options and why (Waterschap Rijn en IJssel, 2018 a).

Besides, in February, the alternatives were assessed based on five criteria which have been drawn up. These criteria together form the social cost-benefit analysis and are as follows (Hommes, 2017):

- Space occupation (*ruimtebeslag*): if little physical space is taken up, a positive score will be given
- Costs: based on the principles of sober and efficient, a relatively cheap variant will score positively. The costs are calculated over the entire lifespan.
- Environment: if an alternative has little or no consequences for the environment, both during the construction and in a spatial sense, a positive score will be given.
- Spatial quality: the extent to which the alternative complies to the vision of the Rijnkade, is in line with the municipality's linking opportunities and the needs of the area.
- Technical feasibility: for this criteria are the reliability of the measure, possibilities for expansion (height) in the future, degree of nuisance to the environment, risks of damage and effects on the environment considered

The alternatives will be assessed on a scale which ranges from ++ (positive), + (slightly positive), 0 (neutral), - (slightly negative), - - (negative). The assessment of the four alternatives is shown in table 5.



Themes	Assessment criteria	Alternatives			
		1	2	3	4
		<i>Rijnfront</i>	<i>Groene Rijnkade</i>	<i>Water</i>	<i>Levendige Rijnkade</i>
<b>1. Space occupation</b>	1.1 Socio-economic quality	+	++	+	++
	1.2 Buildings	0	0	0	0
	1.3 Traffic	+	++	++	++
	1.4 River management (water)	0	0	0	0
	1.5 Archeology	--	--	--	--
	1.6 Nature/Flora and Fauna Act	0	+	0	0
<b>3. Stakeholders</b>	3.1 Nuisance during construction	--	-	--	-
<b>4. Spatial quality</b>	4.1 Spatial quality	+	++	+	++
	4.2 Linking opportunities	+	++	+	++
<b>5. Technical feasibility</b>	5.1 Technical feasibility	0	+	0	+
	5.2 Robustness/expandability	+	++	++	++
	5.3 Manageability	+	+	+	+
	5.3 Sustainability	0	0	0	0
<b>2. Costs</b>	Investments costs ( <i>cash value</i> )	€12.76 mln	€12.55 mln	€12.83 mln	€12.55 mln
	Life costs ( <i>cash value</i> )	€1.26 mln	€1.24 mln	€1.27 mln	€1.27 mln
	Project costs ( <i>cash value</i> )	€14.0 mln	€13,8 mln	€14.1 mln	€13.8 mln
	Investment costs ( <i>incl. VAT</i> )	€15.4 mln	€15.2 mln	€15.5 mln	€15.2 mln

Table 5: Overview of assessment of the alternatives (Cirkel, 2018)

This assessment shows that the designs of the green and the lively quay score equal to or higher than the other two designs on all aspects.

The next step in this phase is the design of the preferred alternative. The assessment of the four alternatives based on the criteria results in a combination of a lively and green quay (Waterschap Rijn en IJssel, 2018 *b*). The essence of this design was to strengthen the connection between the city and the river in such a way that the vibrancy of the area is strengthened by the creation of new living spaces (Waterschap Rijn en IJssel, 2018 *a*). The monumental value of the quay (robust and a continuous city front) has been retained. The current interruption on the quay due to exits will disappear in favour of a better river flow and spatial quality on the high quay. The quay the stairs and ramps form a link between the river and the city centre (Waterschap Rijn en IJssel, 2018 *a*). In various places, stairs have been made for pedestrians, which are meant as a platform towards the river and as a place to stay (Waterschap Rijn en IJssel, 2018 *a*). In this preferred alternative, the flood defence near the catering industry will shift towards the river, several entrances and exits will be modified and a green slope will be placed near the Nelson Mandela bridge (Waterschap Rijn en IJssel, 2018 *b*). Impressions of the design are shown in figure 13.



Figure 13: An impression of the 'green and lively Rijnkade' (Waterschap Rijn en IJssel, 2018 a)

In the third Rijnkadecafé, in April 2018, the preferred alternative was presented. In this meeting, it appeared that the image for a new design for this area varies enormously between residents (Waterschap Rijn en IJssel, 2018 a). This is partly due to a difference in insight into the future identity of the Rijnkade and thinking from the perspective of public interest or personal interest (Waterschap Rijn en IJssel, 2018 a). According to the respondents, the differences in perspectives were only small. The chairman of the residents' platform, for example, mentioned the trees on the higher quay. The catering industry wanted all the trees to be removed, while the residents' platform advocates greenery in the streets. Eventually is decided not to remove the trees because they are historic trees. This shows that a mutual agreement has not always been reached, however, the method has been greatly appreciated by the participants (Waterschap Rijn en IJssel, 2018 a). In this meeting was agreed upon the preferred alternative 'green and lively Rijnkade' (*groene en levendige Rijnkade*) which could be presented to the steering committee.

In a meeting with the general board of the water authority in December 2018, the preferred alternative was being discussed. According to the administrative committee on flood risk management and water system (*bestuurlijke commissie waterveiligheid en watersysteem*), this alternative ensured that the flood defence will again meet the water safety requirements and that the flood defence will be integrated into the area as favourably as possible (Waterschap Rijn en IJssel, 2018 b). Besides, they also stated that, because of the explicit contribution of the people living and working around the Rijnkade, there was broad support for this alternative (Waterschap Rijn en IJssel, 2018 b). The committee also mentioned that the preferred alternative meets the criteria of sober and effective, as set by the DFPP (Waterschap Rijn en IJssel, 2018 b). Also, this alternative offers linking opportunities to boost the city of Arnhem and the quay. In the meeting, the members of the board expressed their compliments on the collaboration with the municipality and the communication with the residents (Waterschap Rijn en IJssel, 2018 d). On December 18<sup>th</sup>, the preferred alternative 'green and lively Rijnkade' has been adopted (Waterschap Rijn en IJssel, 2018 c).

### 3. Plan elaboration phase (December 2018/May 2019 – 2020)

After adopting this alternative, the second phase started: the plan elaboration phase (*planuitwerkingsfase*). At the moment of writing, this project is in this phase. In the plan elaboration phase, the preferred alternative is developed more technically into a reference design, this will be done in six workshops together with the municipality, the water authority and other non-governmental stakeholders (Waterschap Rijn en IJssel, 2019 *b*). Besides, the water authority is currently elaborating preconditions for the implementation, to limit nuisance as much as possible. This is done in consultation with the residents and entrepreneurs during the Rijnkadeberaden and the Rijnkadecafés. In this phase, also the costs of the project will be further determined and the tendering and contracting of the project are planned (Waterschap Rijn en IJssel, 2019 *a*).

Due to the current and some technical setbacks, there is some delay in the execution of the project. Therefore, it is not certain when this phase can be concluded and realization can be started.

### 4. Realization phase (2021)

In 2021 the fourth phase will start: the realization phase (*realisatiefase*). In this phase, the outsourcing and execution of the project take place so that the Rijnkade again meets all the safety requirements.

#### 4.3 Process analysis

In this section, the results are interpreted and analyzed using the seven hypotheses mentioned in section 2.6.

##### 4.3.1 System context

###### Actors

Summarized, the main executive parties are the water authority Rijn en IJssel and the municipality of Arnhem. The water authority Rijn en IJssel is responsible for water safety and the municipality for the public space. Besides, Rijkswaterstaat is influencing the process by setting the water safety standards of the Dutch flood protection programme, and by subsidizing the water authority for the project. The province of Gelderland is subsidizing the municipality because this project contributes to strengthening the connection between the river, the city centre and the green environment, one of the aims of their programme 'vibrant city centres at the river'. Besides, the province often comes into the picture in integrated urban developments, in which several parties are involved, to bring parties together (R.4). In addition, the province has a statutory task to supervise water authorities (R.4)

The residents, entrepreneurs and other stakeholders around the quay have been approached in several ways during this process. Open walk-in meetings (*Rijnkadecafés*) were organized where people could share their visions and ideas (Deltacommissaris, 2018). Also, individual talks were held with stakeholders and excursions through the area are organized. Besides, a so-called *Rijnkadeberaad* was set up. In this sounding board, representatives of interests in the area actively contributed ideas and knowledge of the area. These people include, amongst all, representatives of the catering business association and the river cruise industry, residents group Arnhemshart, residents platform Arnhem 6811, the platform for chronically ill and disabled (APCG), some owners associations and the foundation of historic ships. According to the engagement manager, this board is 'a good reflection of the residents, companies etc. They are no individuals, but they are all in on behalf of an interest group.'

Their influence is substantial and contains bringing in ideas for the design of the upper quay during meetings with this board.

### **Resources/power**

Several types of resources can play a role in this process. First of all, financial resources. The water safety task in this project requires the biggest budget. The total estimated costs for both the strengthening task and the integration task are €15 million. The water authority receives a subsidy from the flood protection programme, paid by Rijkswaterstaat. This subsidy entails 90% of the estimated costs, the other 10% must be paid by the water authority itself. Besides, the water authority is risk-bearing, which means that if the costs are higher, the water authority must also pay these costs. The municipality has budgeted €3.5 million, for the redesign of the Rijnkade. Of this budget, €2 million is municipal contribution and €1.5 is a subsidy from the programme *vibrant city centres at the river* of the province of Gelderland.

Second, resources of knowledge, skills and expertise. According to Yang (2018), there are three sources of knowledge: natural science knowledge, social science knowledge and local knowledge. Under natural science, the technical aspects of the design can be understood. In the interviews is mentioned that both the municipality and the water authority hired an engineering firm to further develop the drawing work and all the technical aspects (R.1 & R.2). Besides, in the design workshops, other experts are invited, such as a landscape architect to think about the technical aspects and the design.

Social science, which includes political science, knowledge of public administration, management, law, etc. is brought in by the municipality and the water authority. The municipality has a larger share in this because they are more used to dealing with projects in an urban environment than the water authority (R.2). Therefore, the municipality can assist the water authority in sharing their experience and network.

Local knowledge includes experiential knowledge and local rules, etc. This is mostly brought in by the residents, entrepreneurs and other stakeholders around the quay. According to the chairman of the residents' platform, they are aware of the fact that they cannot bring in technical knowledge, but only knowledge based on their experience. The municipality is also a contributor to local knowledge. They have people in the neighbourhood who meet the neighbourhood teams ever two weeks, so they know what is going on (R.2).

Next to power as a result of access to resources, actors can also have power based upon formal or informal rules, which is indicated by formal competences. In this process, formal competencies can be found in the rules concerning the duty of care of the quay. Even though the DFPP is a national programme, the programme establishes that the local water authority is the executor of the project.

For this project, it is relevant to mention who is responsible for the management and maintenance of the quay. At this moment, the quay is the responsibility of the water authority but formally owned by the municipality (Cirkel, 2018; R.2). This means that daily maintenance is a task of the municipality and water safety a task of the water authority.

Based on the observations, time as a type of resource is not a relevant element in this process.

## Rules of the game

There are several 'rules of the game' of importance in this process. First of all, different agreements between the water authority and the municipality have been made. First, a declaration of intent was signed by both parties, in which they declare to work together to investigate possible linking opportunities. Later in the process, a cooperation agreement (*samenwerkingsovereenkomst*) was signed by the water authority and the municipality. This agreement sets out who is responsible for what and what the rules of the game are to each other (R.2). In this agreement is also laid down that the municipality has to agree with the reference design (R.2).

Besides the agreements, there are some formal procedures which have to be followed. From the DFPP, a certain project organization structure is imposed. This implies requirements for the composition of the project team: project manager, risk manager, engagement manager, project management manager, technical manager (Bernardini & Knoeff, 2017). Besides, the phasing for this project is set by the Dutch flood protection programme, as the project follows the phases of this programme. After every phase, a specific decision is being made, for example, when the preferred alternative is chosen after the exploratory phase or the reference design after the plan elaboration phase. These phases have been further explained in section 4.2. Formal procedures yet to come in this process are the formal submission of the project plan, where people can submit their views and the tendering of the project.

Other rules that have been laid down by the DFPP are about the financing of the project. The rules regarding the subsidy are described above. Besides, there are some rules about linking opportunities: *'It must first fit within the lead time of the regular DFPP project. And there must be 100% funding from the initiator of that linkage opportunity'* (R.1).

In 2021, the Environmental and Planning Act will take effect in the Netherlands (Government of the Netherlands, n.d.). This act aims at simplifying the laws on the environment and planning. Public participation is an important element of this act and, therefore, several rules on participation are included in the act (Aan de slag met de Omgevingswet, n.d.). Even though the Environmental and Planning Act is not in effect yet, the water authority did somewhat act in the spirit of the act. But they could profit from the fact that the law was not in force yet, because this would save a lot of work. The engagement manager of the water authority emphasizes that the Environment and Planning Act was not the reason for the high degree of participation: *'No, we are convinced that you can really make a good project in this way'*.

## Discourse

This last dimension involves which ideas or perceptions the actors have regarding the problem and the process and what beliefs and general ideas are present in the system context.

For the water authority, the problem is that the quay does not meet the new flood risk standards and it does need to meet the standards before 2050. For the municipality, the main problem is that the southern part of the city centre, including the quay, is lacking in attractiveness and quality. In 2014, the municipality presented a plan to improve the southern part of the city centre. One of the ambitions mentioned in this plan was to resurface the Sint Jansbeek. This fits within the vision of the province, according to their programme *vibrant city centres at the river*. Besides, it corresponds to the vision of the chairman of the residents' platform, he sees the Rijnkade as *'an ugly place in the city centre'*. His view about a possible solution is simple: *'if anything can be renovated, we see it as a profit'*. Even

though the problem definition is not the same for the municipality and the water authority, this does not mean that the project is doomed to fail: *'I think it is important for the success of the project that you have the same interests and concerns. And I think the water authority does have it'* (R.2).

### Drivers for CGR

When looking at the four drivers for a CGR (leadership, consequential incentives, interdependency and uncertainty), all four of them can be found in the system context of this project.

First of all leadership; in this project, the water authority can be seen as the leader. Even though the municipality also has a great interest in this project, because of the invested money and because this project fits in line with the existing plan of upgrading the southern part of the city centre, the water safety task is leading. Also in the declaration of intent is stated that the water safety task was the main objective, which both parties agreed to. Besides, for the project manager of the municipality, it appeared to be obvious that the water authority would be the leader in this project, as the water authority is investing the most amount of money in this project and because the risks are the greatest for them (R. 2). The engagement manager of the water authority also mentioned that it makes it easier for those involved to know who the point of contact is when one leader is appointed: *'[the area around the quay] does not see the difference between the part of the quay that belongs to the reinforcement and which part of the project to the municipality. This does not make sense to the outside world. So we said it is one project'* (R.1). Besides, the water authority has several obligations to the DFPP to finish in time. Another benefit of appointing the water authority as the leader was that they did not have a prehistory of collaboration with the representatives of the Rijnkade, where the municipality might experience disadvantages of prejudices based on a prehistory of collaboration: *'normally you will be reminded of your previous mistakes. We are not bothered by that now'* (R.1). Besides, it would be a good opportunity for the water authority to profile itself in the field of citizen participation in an urban area (R.2).

Consequential incentives are present in the way that the municipality of Arnhem needs the water authority to let the Sint Jansbeek flow through the flood defence into the Rhine. Interdependency exists between many parties: the water authority is partly dependent on the Dutch flood protection programme for the subsidy. Besides, the institution is dependent on the municipality, the residents and other stakeholders to execute the integration task as well as possible. The interdependency between the municipality and the water authority lies in the fact that the municipality is dependent on the water authority because the authority leads this project and have their own demands for the design of public space (R.2). Besides, a certain dependency exists between the municipality and the province of Gelderland, regarding the subsidy for the southern part of the city centre.

Uncertainty as a driver means that participants collaborate to reduce, diffuse and share risk. In this project, uncertainty exists because there is a disbalance in knowledge: the participants do not have all three types of knowledges, as has been written down above. Together, the participants can learn what is desirable and technically feasible.

The first hypothesis (*at least one of the four drivers must emerge from the system context to start a collaborative process*) will, therefore, be accepted for this case.

#### 4.3.2 Collaborative dynamics

These drivers form a starting point of the collaborative process: they stress the importance of working together. The collaborative process consists of the three components of principled engagement, shared motivation and capacity for joint action. In the following section, the collaborative dynamics between the different actors of Arnhem will be described.

##### Principled engagement

Principled engagement relates to the involvement, inclusion and representation of the actors. It entails four elements: discovery, definition, deliberation and determination.

Discovery entails the identification of individual and shared interests, concerns and values. All respondents agree on the necessity of the project and indicate that water safety is important. It can, therefore, be stated that they understand the aim of the project. Besides, they agree on the vision of the municipality to improve the spatial quality of the quay. The respondents also agree on having the same interests and concerns: *'I think it is important for the success of the project that you have the same interests and concerns. And I think the water board does have it.'* (R.2). But, of course, there are small varieties in the interests and concerns. As mentioned before, the trees were a point of discussion between the residents' platform and the catering industry. Other concerns are about the execution of the project and to limit the nuisance for the residents and the catering industry.

The element of definition is about building shared meaning by finding common purposes and objectives. The common purpose of the water authority and the municipality is clear: ensure that the flood defence meets the new safety standards, while at the same time increasing the spatial quality. Definition also entails the agreements with the concepts and terminology. An example in this project is the phasing: the municipality would distinguish other phases, but because of the requirements of the flood protection programme, the four phases as set by them, are used: *'for this project, they might be called differently'* (R.2). Another difference in practice is the tendering with a contractor. Where the municipality would go into further detail about how the design should look like, the water authority will write down a list of requirements and leave the design more to the contractor. *'And that sometimes conflicts. And well, we will figure that out. But that is a quest; to what detail is the water authority going to put the contractor to work'* (R.2).

Deliberation includes the communication between the participants. The observations showed that this aspect is perceived quite positively. First of all, the advocacy of interests, the Rijnkadeberaad is seen as a good representation of the stakeholders around the quay. The respondents indicate that at the beginning the Rijnkadeberaad was lacking in representing all interests. Therefore, during the process, stakeholders are added to the sounding board, being residents group Arnhemshart, residents platform Arnhem 6811 and the platform for chronically ill and disabled. The engagement manager of the water authority mentions that the members thought the name 'sounding board group' was too limited, and therefore opted for the name 'Rijnkadeberaad': *'then you also see that there is a certain pride'* (R.1). Regarding the communication between the actors, the respondents were positive. The water authority tries to communicate as openly as possible, and where improvements can be made, they will be made: *'they continuously send us what is happening. [...] In the beginning, it was a bit difficult. And then we told them to just update us. And that was done. So moments like that are also listened to'* (R.3). Stakeholders were actively approached for their opinion and efforts were made to allow people to share their ideas freely: *'I want them to come up with an idea before I do that. Otherwise, they are of course affected'* (R.1). These effort worked: *'so we feel heard and seen and included in the project. [...] The points that have been brought in by us are included and have ended up in the planning process'*



(R.3). However, the opinions are divided on the level of detail in which the participants are allowed to participate. The members of the Rijnkadeberaad were invited to join the design studios, together with officials from the municipality and the water authority, an engineering firm and other specialists, to let them truly be part of the designing process. This was not a good addition in all situations: *'I remember we were allowed to talk one evening and that was about what kind of stones were used. And then I thought: Jeetjemina, may we also have a say in that?'* (R.3). Besides, the project leader of the municipality indicates that *'balancing the technical implications for a solution becomes more difficult if you leave it to the residents'*. Despite the invitation to all design studios, most members of the Rijnkadeberaad have only responded to the workshops on the theme of the above-ground design.

Determination concerns the decisions made within the collaboration. From the water authority, no obligations were imposed on the members of the Rijnkadeberaad and other stakeholders around the quay.

### **Shared theory of action**

Through the working together of the four elements of principled engagement, participants develop a shared theory of action, which includes the groups' understanding of the size of the problem or challenge as well as the scope and the scale of the groups' chosen activities or interventions.

In this project, a shared theory of action was present in the way that all participants understood that water safety was the leading aim of the project. Despite this leading aim, the participants had their own goals and the water authority emphasized that they wanted as much bottom-up input as possible (R.6). This input has, first of all, led to minor changes in the design, such as the type and placement of the trees. But has also led to agreements that have been made (and are being made) about the implementation, which can ensure that there are fewer unintended negative consequences for the residents and entrepreneurs around the quay. Therefore, hypothesis six, *a shared theory of action will lead to impacts with fewer unintended negative consequences*, will be accepted for this case.

### **Shared motivation**

Shared motivation refers to the interpersonal and relational elements of the collaborative dynamics and consists of four elements: trust, mutual understanding, legitimacy and commitment.

Trust is about the trustfulness and reliability of the other actors. This is influenced by the prehistory of collaboration. The municipality and the water authority have a long history of working together, also in these kinds of project. The project leader of the municipality explains that the roles differ per project: *'further on in Arnhem we have also built the primary flood defence for the water board.'*

Not only between these two parties, but also among the players themselves, a good history of working together and knowing who to go to plays a major role: *'I happen to know the project manager of the water board for a long time, and then you see that it helps. [...] If you don't click, that makes it difficult. That's just how it is. [...] Then things are a bit more difficult than when you already know each other and that you know what you can expect from each other, even if you are two different organizations.'* (R.2).

The municipality has short lines of communication in Arnhem with residents platforms and groups, entrepreneurs and entrepreneur associations, and the platform for the chronically ill and disabled, especially since the whole southern part of the city centre is being renovated (R.2). The chairman of



the residents' platform confirms this: *'because we have been cooperating positively for five years, we are included'*. The timing of the project could ensure that water board could profit from these short lines: *'we also told the water board that it would be useful if they set things up now because then they can make use of the network and expertise'* (R.2). The water authority was seen as a 'new player' for the residents and entrepreneurs, this was rather an advantage than a disadvantage: *'we also noticed that there is occasionally some scepticism towards the municipality in the area. And we had no problems with that. So in that respect, we could really start with a clean slate in the area, and that was nice too, we noticed'* (R.1).

This has resulted in a trust between the participants: *'my predecessor noticed that there was a lot of confidence'* (R.1). Trust can also be a result of mutual understanding, the second element of shared motivation, which is the ability to understand and respect others' positions and interests. In this process, the water authority tries to create mutual understanding by communicating openly and clearly: *'sometimes you have two wishes that conflict with each other. Then it is very nice to put that on the table with the representatives of those wishers. by doing this together at a given moment, they understand the bottlenecks of each other's points of view. That way you can see that a nice integral consideration is also taking place'* (R.1).

Legitimacy relates to the confirmation of credibility and trustworthiness of other participants. The governmental participants, the municipality and the water authority, did not have to prove their credibility to the other participants. But it is more of an issue for the non-governmental participants, the residents and the entrepreneurs. These participants are often unknown for the water authority and sometimes also for the municipality because there is no or little prehistory of collaboration. Before starting the collaboration, no agreements have been made with the representatives about informing or communicating with the people they represent. According to one respondent, this makes sense: *'I find it logical to inform my supporters, they shouldn't have encouraged'* (R.6). Because no agreements have been made, it is not always clear if someone speaks for a group or out of self-interest: *'you must always be very careful that the biggest screamer does not push through something and pretends that everyone agrees, while in practice it can be very different. But then you also see that at a certain point someone who you feel is saying something on behalf of a large group, that in the end, it is not the case'* (R.1).

Commitment is the dedication of the participants to the CGR and its purposes and goals. The participants do see the need and purpose of collaboration. An aspect of commitment is the willingness to accept outcomes. For the residents, entrepreneurs and other stakeholders, this willingness is present: *'we are talking to each other in an equal way. And that means that at some point it will also be accepted if the answer is no. Everyone understands that we have discussed it honestly with each other and that it has been considered well'* (R.1). This willingness is also a result of the open way of communication from the water authority: *'you often give them a bit of background information about what we are struggling with. That they know a little bit about what's going on'* (R.1). However, it sometimes appears difficult to give certain freedom with all the restrictions: *'The trick is always to indicate carefully under which preconditions people are allowed to participate. [...] I think that is the field of tension in the design studios'* (R.2). Participants also understood that not all wishes can be included in the design: *'You can have a lot of plans or wishes, but if they are not feasible, which also depends on the finances, it will not work'* (R.3). This willingness to accept outcomes can also be seen as a result of mutual understanding.

## Capacity for joint action

Capacity for joint action creates the potential for taking effective action, which is done through four aspects: procedural & institutional arrangements, leadership, knowledge and resources. Within this dimension, there is some overlap with the system context, relating to the rules of the game and power/resources.

Procedural and institutional arrangements include the range of process protocols and organizational structures necessary to manage repeated interactions over time. This element has overlap with the element of *rules of the game* within the system context and is therefore described in the system context section.

Leadership can be present in different roles, mentioned in section 2.7.2. In this project, several leadership roles can be found. First of all, the role of the initiator, this role can be assigned to the water authority. The role of the sponsor can be appointed to all four governmental participants. The main sponsor is Rijkswaterstaat, because they invest the largest amount of money into this project. Other sponsors are the water authority, the municipality and the province. The role of the convener can also be assigned to multiple parties. First of all to the province, who often comes into the picture in integrated urban developments, in which several non-governmental actors are involved: *'we are the driving force to bring parties together, to do it together'* (R.4). Besides, on the one hand, the municipality can also be seen as a convener because they assist the water authority in bringing parties together: *'we also told the water board that [...] they can make use of the network and the expertise. What we do: we facilitate the water board a little through the process'* (R.2). But on the other hand, the water authority can also be seen as a convener because they actually brought the participants together. The fourth leadership role is the role of the facilitator/mediator who acts as impartial managers of collaboration. This role can be appointed to the province: *'very often it is the case that as a province you can connect precisely those different interests'* (R.4). The role of the scientific/technical expert can primarily be assigned to the water authority, although they do hire other technical experts to advise them, just like the municipality does. The last leadership role, the public decision-maker, can be appointed to the water authority because they are the final decision-makers.

The presence of the two elements of knowledge and resources have already been discussed in the system context and will not be repeated here.

Summarized, almost all variables and elements are, up to a certain degree, present in the collaborative dynamics of the project in Arnhem. The hypothesis belonging to these dynamics (2, 3 and 4) are tested using a straw-in-the-wind test, as mentioned in section 3.2. If a hypothesis passed this test, it only slightly weakens rival hypothesis. If statements have to be made about accepting or rejecting the hypotheses belonging to the dynamics, the causal mechanisms of the collaborative dynamics should be strongly visible. When looking at hypothesis 2, *principled engagement will enhance and help sustain shared motivation*, some elements confirm a causal relation. For example, by finding shared interests or by defining common purposes and objectives, understanding of other positions and interests emerges. However, the evidence found cannot be considered strong enough to accept the hypothesis. Therefore, this hypothesis will be, for this case, neither accepted nor rejected. The same applies to hypothesis 3, *shared motivation will enhance and help sustain principled engagement*. The observations showed that a prehistory of collaboration and the confirmation of credibility/trustworthiness can influence the tasks and expectation of other roles. The same goes for hypothesis 4, *principled engagement and shared motivation will generate and sustain capacity for joint action*. For example, after common objectives are defined and there is a certain willingness to accept

outcomes, the potential for taking effective action is created. Both hypothesis 3 and 4 will also be neither accepted nor rejected.

#### 4.3.3 Productivity performance

The effectiveness of the CGR is measured with the productivity performance. Assessing the productivity performance helps to make statements about the extent to which collaborative governances has helped integrating water safety and spatial quality in Arnhem. This has been done by three elements of the productivity performance: equity, effectiveness and sustainability. Because the project has not been realized at the moment of writing, the productivity performance of the result so far will be tested: the preferred alternative.

#### Equity

Equity refers to the somewhat equitable distribution of benefits, costs and risks. Both the municipality and the water authority have made their own budget for achieving their goals. Therefore, you could say that there is a fair distribution of costs between these two. The residents, entrepreneurs and other stakeholders, do not invest in this project but they do profit from it. Investing in this project is also not required because the municipality is responsible for the public space. According to the chairman of the residents' platform, they are aware of their position: *'and this is such a big project and encompassing about millions, we don't feel equal in that respect.'*

#### Effectiveness

The effectiveness is the extent to which the CGR's actions produce their intended effect. This is measured by the goals and aims of the process. As stated before, the water authority aimed to meet the new safety standards in 2050. Because the design still has to be developed more technically, this cannot completely be evaluated. However, because the leading aim of the project is water safety, as laid down in the declaration of intent, it will be sure that the water safety standards will be met with the new design. The municipality has set several ambitions in 2014 to improve the quay. These ambitions can be seen as goals. One of these ambitions was to resurface the Sint Jansbeek, which has been done now by a temporary solution, but a definitive solution will be included in the design of the new quay. Besides, in the cooperation agreement is also laid down that the municipality has to agree with the reference design. This implies that the aims of the municipality will be achieved in the reference design. The chairman of the residents' platform indicates that they did not set goals in advance about when the project would be successful, they are already happy to be heard and think that every adjustment would be an improvement.

Although in the documents of the water authority is stated that was broad support for the design, the majority of the respondents indicated that they expected that this design would have been more or less the outcome, even if not all parties were involved in the process. For the municipality, the reason for this is that they already had certain design requirements, as they were renovating the whole southern city centre: *'and for the Rijnkade it was the case that it would be constructed in accordance with what we have constructed in the entire southern city centre. Those types of clinkers, type of walls, type of trees. So there was not much to choose from there either. So with that, I could say that it would have looked basically the same as we have now'* (R.2). Although the design would be more or less the same, the adjustments lie in the details (R.5). Besides, the open way of communication of the water authority has ensured that there is support for the design. Hypothesis 5, *actions resulting from*

*collaborative dynamics cannot be realized by the participants alone*, will therefore be accepted for this case.

## Sustainability

Sustainability is the ability to continue the demonstrated effects over time. The observations showed that there will not be any specific evaluation moments where will be assessed if the effects are sustained over time, after the project has been executed: *‘eventually the terraces will open again and the new interior is there, and that’s it’* (R.1). Concerning water safety: the flood defence will be tested periodically if it still applies to the water safety standards. Of course, there are also elements in the design which can be adjusted: *‘But then you really talk about the details. And that will be more for the municipality. Because they manage that area, it is just public space. [...] And if they think it’s not working, then our project is finished and it will be up to them’* (R.1). Except for these details, there will not be much work for the municipality, after the project has been executed, because the spatial quality will be protected well in the coming period: *‘you can assume that, on average, pavements will last 20 to 30 years, and then you will have to repave it again, or another plan will come along’* (R.2).

The last hypothesis, *the working together of the three components of collaborative dynamics will lead to a better integration of water safety and spatial quality in urban waterfront regenerations*, is tested with a smoking gun test. The observations showed that within this project, efforts have been made to combine the strengthening of the quay with urban development. The involvement of both governmental and non-governmental actors has resulted in changes in the design that increase urban quality. Of course, no comparison can be made with a situation in which the three components of collaborative dynamics are not present. However, through the contributions of the participants, it can be assumed that the collaborative dynamics have ensured that there is a good integration of both goals. Therefore, the last hypothesis will be accepted for this case.

In the section above, provisional statements of the hypothesis are given, based on the data retrieved for this case. These statements are summarized in table 7, with ‘+’ standing for accepted, ‘-’ standing for rejected and ‘0’ standing for neither accepted nor rejected.

1	At least one of the four drivers must emerge from the system context to start a collaborative process.	+
2	Principled engagement will enhance and help sustain shared motivation	0
3	Shared motivation will enhance and help sustain principled engagement	0
4	Principled engagement and shared motivation will generate and sustain capacity for joint action	0
5	Actions resulting from collaborative dynamics cannot be realized by the participants alone	+
6	A shared theory of action will lead to impacts with fewer unintended negative consequences	+
7	The working together of the three components of collaborative dynamics will lead to a better integration of water safety and spatial quality in urban waterfront regenerations.	+

Table 6: Overview of hypotheses

## 5. Results Waalkade, Nijmegen

In this chapter, the result of the Waalkade in Nijmegen will be discussed. First, a further introduction of the Waalkade will be given. In section 5.2, the process of the project will be reconstructed. Followed by a process analysis in section 5.3

### 5.1 Introduction

The Waalkade is located at the north side of the city of Nijmegen, with the Spoorbrug at the westside and the Waalbrug at the eastside, see figure 14 for the location.

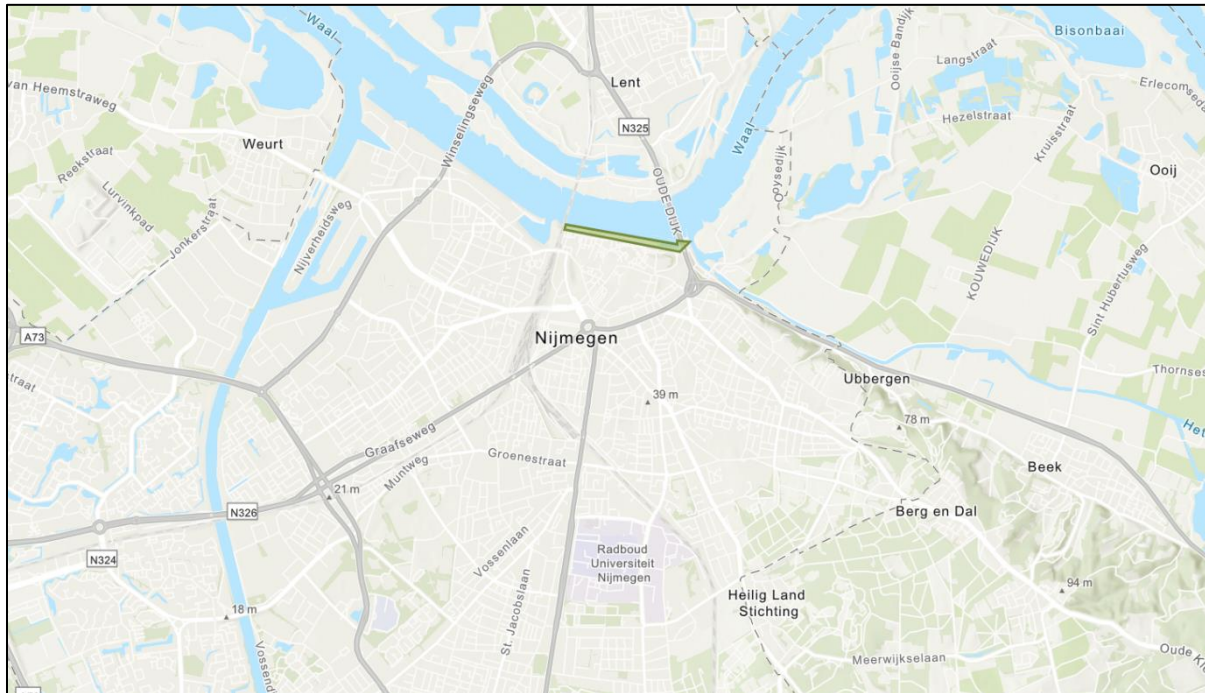


Figure 14: Location of the Waalkade (in green) in Nijmegen (Author, 2020)

This quay consists, in contrast to the Rijnkade, of one level with a throughway on it. Along the whole quay, boats can moor. At the west side of the quay, mainly houses are located. The street has a wide sidewalk on one side of the road and parking places on the other side and a cycle path on both sides. The houses and the street are still separated by a retaining wall. At this part of the quay also a labyrinth is situated. In the middle of the road, there is a roundabout. Since the regeneration, only busses are allowed from the roundabout until the Waalbrug. At the eastern part of the quay, several bars and restaurants are located, with a terrace on the other side of the road, on the water. Before the regeneration, cars could also drive on the Waalkade, and a large parking lot was situated at the east side of the quay, in front of the Holland Casino. Under the Waalbridge a small harbour is located, the Lindenberghaven.



Figure 15: An impression of the eastside of the Waalkade (VVV, n.d.)

The city of Nijmegen wants to benefit more from its location on the Waal. This has resulted in several developments along the Waal in the last years by the name ‘Nijmegen embraces the Waal’ (*Nijmegen omarmt de Waal*) (Gemeente Nijmegen, 2018). On the north bank of the river, a side-channel has been constructed, creating an island that offers space for recreation. Besides, the Waalfront, on the west side of the city centre, is being transformed into a residential area. These developments result in different places along the Waal that attract visitors (Schoemaker, n.d. a).

In 2012, a motion was adopted to allow money to go to the Waalkade (R.6). This aim did not come from the municipality alone, also residents and entrepreneurs had the desire to renovate the east side of the Waalkade (Gemeente Nijmegen, 2018). From this motion, the project eastern Waalkade (*oostelijke waalkade*) emerged. In the first phase, which was completed in 2015, an elevator was installed, stairs were placed and the historic harbour Lindenerghaven was renovated (Gemeente Nijmegen, 2017 a). See figure 16 for an overview of the execution of the activities in the first phase. The developments around the eastern quay after this first phase, are referred to as the second phase or ‘eastern Waalkade square’ (*Oostelijke Waalkade plein*).

In the reconstruction of the Lindenerghaven, some setbacks in the implementation appeared (Gemeente Nijmegen, 2018). The remaining work to optimize the jetty at low water levels will be taken up in 2018, together with the second phase (Gemeente Nijmegen, 2018).



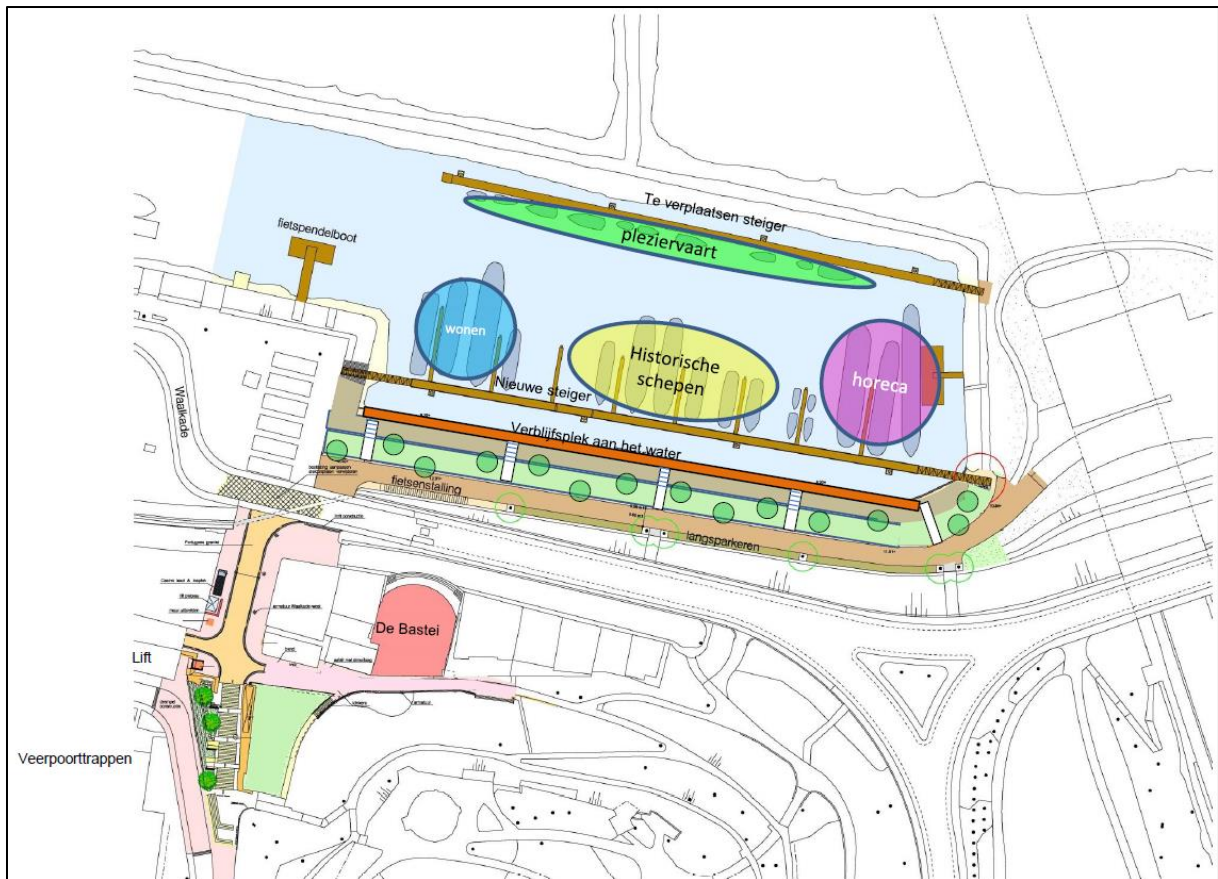


Figure 16: Overview of the execution of the activities (Gemeente Nijmegen, 2016)

Despite these improvements, the Waalkade remained lacking in attractiveness. In order to benefit more from its location on the Waal, the city of Nijmegen could better utilize the economic and social potential of the Waalkade and make it more attractive for tourism, recreation and inland shipping (Gemeente Nijmegen, 2018). In 2015, the municipality wrote a vision on the transformation and vacancy in the city centre, called 'city centre of the future' (*binnenstad van de toekomst*). In this vision is mentioned that the connection between the quay and the city centre is perceived as suboptimal (Gemeente Nijmegen, 2015). The Waalkade is one of the weaker areas in the city centre of Nijmegen because the catering industry has a weak character and is not distinctive enough (Gemeente Nijmegen, 2015). The quay has a spacious, but not a very user-friendly design (Gemeente Nijmegen, 2015). The quay has been dealing with declining visitor numbers (Schoemaker, n.d. a). This declining number, together with the other developments along the Waal, can be seen as a threat to the Waalkade.

Aims mentioned in the vision for the Waalkade include improving the attractiveness of the quay into a place to stay, to attract more visitors from cruise ships into the city and to develop the Grotestraat as a connection between the quay and the city centre (Gemeente Nijmegen, 2015). Besides, the municipality stresses the growing importance of the access route from the Waalfront (Gemeente Nijmegen, 2015).

## 5.2 Process reconstruction

In July 2014 a motion was adopted by the local council to draw up a vision for the future of the Waalkade, aimed at improving the accessibility and attractiveness (Gemeente Nijmegen, 2016). After

this motion, the participation process, called Leven(de) Waalkade, has been set up, so that everyone could share his vision of the Waalkade (Gemeente Nijmegen, 2016).

In April 2015, the municipality started to collaborate with the entrepreneurs at the Waalkade, who are united in the *Vereniging Waalkade Ondernemers*, and *Het Huis voor de Binnenstad*: an organization that aims to promote the inner city of Nijmegen (Schoemaker, n.d. a; Huis voor de Binnenstad, n.d.). Besides, two process supervisors were appointed, who make sure that the process runs smoothly. These process supervisors were independent, which is important because then they have no interest in a particular outcome (R.9). Exploratory talks were held with these stakeholders where questions were asked about the experience and perception of the quay and ideas were shared about how the process should be implemented. This has led to the opening of a walk-in centre, an online webpage and the start of a social media campaign.

Before ideas about a future quay were collected, first, several criteria and preconditions were set. These criteria and preconditions were also communicated to everyone who wanted to share their opinion. The seven criteria are as follows (Gemeente Nijmegen, 2016):

1. Increase the attractiveness of the Waalkade
2. Stimulate business, recreation and tourism
3. Connect with the city centre and other parts of the city
4. Accessibility
5. Keep the public space flexible
6. The project is financially feasible, pays for itself and elicits investment and expenditure
7. It contributes to liveability and (social) safety.

Besides these criteria, also four preconditions were set (Gemeente Nijmegen, 2016):

1. Mobility (for bus, cars, bicycle, pedestrians and coaches, supplies)
2. Parking
3. Events for 8,000 people
4. Possible limitations of Rijkswaterstaat

In total, over 850 opinions were collected (Gemeente Nijmegen, 2016). These ideas were summarized in 15 headings: Public attractions, events, catering, sports & games, education, green, sustainability, art, history, lighting, design, contact with water, connection, traffic & parking and separate opinions (Gemeente Nijmegen, 2016). From these 15 headings, five overarching themes were chosen: connections, functions, experience, temporality and green and sustainability. In June 2015, several walk-in meetings, so-called '*open ateliers*' were organized at various locations about the five overarching themes. Online and in these meetings, residents of Nijmegen were invited to share their opinions. There appeared to be a lot of interest in greenery and events to make the quay more lively (Schoemaker, n.d. a). After having collected all ideas, the project team of the municipality created three different scenarios (Gemeente Nijmegen, 2016):

1. *Natuurlijke verblijfplaats aan de Waal (natural residence on the Waal)*: the emphasis in this scenario is on encountering, greenery and sustainability. A part of the quay will be lowered to allow more contact with the water. There is limited space for small-scale events and through traffic. The quay is a place to meet and enjoy the view of the boats, there will be lounge areas on the water.





Figure 17: An impression of scenario 1 (Gemeente Nijmegen, 2016)

2. *Waalkade gezond in beweging (Waalkade in healthy motion)*: the emphasis here is on health and exercise. There is room for several sports: beach volleyball court, swimming pool and a skating rink will be placed. The quay is part of a cycling and walking network of the city. There is only limited space for cars and busses. Besides, the idea is to focus on organic and sustainable entrepreneurship. The function of green in this scenario is to make the atmosphere of the quay more intimate.

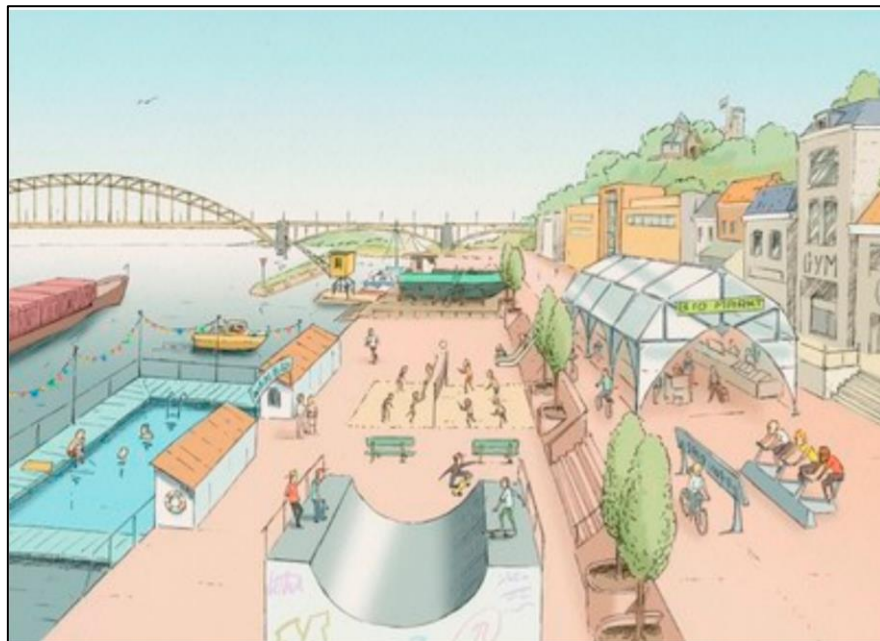


Figure 18: An impression of scenario 2 (Gemeente Nijmegen, 2016)

3. *Bruisende Waalkade (Sparkling Waalkade)*: this scenario is devoted to events. The quay is set up as a flat, flexibly designed square, which makes it suitable for large events. There is a large diversity of shops, galleries and restaurants. There is no through traffic for cars or busses.



Figure 19: An impression of scenario 3 (Gemeente Nijmegen, 2016)

In November 2015, these three scenarios were presented. Afterwards, all three scenarios were assessed on the criteria and preconditions. The result of this assessment is shown in table 8, with ‘++’ meaning positive, ‘+’ slightly positive, ‘-’ slightly negative, ‘- -’ negative and ‘pm’ standing for not yet conclusive.

	Scenario 1	Scenario 2	Scenario 3
1. Attractiveness	++	+	0
2. Business activity, tourism, recreation	+	+	0
3. Connection	+	+	+
4. Accessibility	-	-	-
5. Flexibility	-	-	-
6. Financially feasible	Pm	Pm	Pm
7. Building block	+	+	+
8. Liveability	++	+	-
A. Mobility	-	-	-
B. Parking	-	-	0
C. Events	-	-	+
D. Restrictions Rijkswaterstaat	Pm	Pm	Pm

Table 8: Assessment of the three scenarios (Gemeente Nijmegen, 2016)

As can be seen in this assessment, the scenarios differ not much from each other, but they do give distinctive outcomes per criterion.

Besides this assessment, people were asked to rate the scenarios. Over 1750 reactions were received (Gemeente Nijmegen, 2016). Scenario 1 was assessed with an 8.1/10, scenario 2 with a 6.4/10 and scenario 3 with a 4.5/10 (Gemeente Nijmegen, 2016). In this survey, people were also asked to list the advantages and disadvantages per scenario. The lack of green was mentioned as a disadvantage of scenario 2 and 3. Besides, the results of the survey show that some criteria and preconditions formulated in advance, such as accessibility, mobility and parking, do not have wide support. From the survey can thus be concluded that scenario 1 has a strong preference among the respondents (Gemeente Nijmegen, 2016).

In the start of 2016, the city council agreed on developing scenario 1 for the Waalkade (Boutellier, De Meere & Gisling, 2017). This scenario meets a significant part of the criteria and preconditions and can count on broad support among respondents (Gemeente Nijmegen, 2016). Besides, the council asked for an investigation into how accessibility can be guaranteed and events can continue (Gemeente Nijmegen, 2018). The investigation showed that greenery and events can be combined, if some conditions are met (Gemeente Nijmegen, 2018).

The issue of the mobility aspects has been included in the elaboration of the council motion 'the city centre accessible to everyone' (*de binnenstad voor iedereen bereikbaar*) (Gemeente Nijmegen, 2018). The outcome of this study was decisive for how the chosen scenario for the quay could be spatially designed (Gemeente Nijmegen, 2018). Therefore, the decision-making on the motion 'the city centre accessible to everyone' determined the pace to decide on the final design for the eastern quay (Gemeente Nijmegen, 2018). This delayed the progress of the project.

Awaiting the results of this motion, the municipality started with placemaking on the quay (Gemeente Nijmegen, 2018). This placemaking involves temporary initiatives as a zen garden, an art route, a bootcamp place and music swings (Gemeente Nijmegen, 2018).

Scenario 1 involves a lowering of the quay. Because this is a physical change to the quay, water permits are required from Rijkswaterstaat and the water authority Rivierenland. Already in an early stage, consultations were held with Rijkswaterstaat (Gemeente Nijmegen, 2016). In these consultations appeared that Rijkswaterstaat was willing to contribute constructively to the development of the scenario and that Rijkswaterstaat has no objections in principle of lowering the quay (Gemeente Nijmegen, 2016).

In 2017, a final design was made. Next to the two administrative preconditions about mobility and events, other implementation issues were also addressed in this phase of the project. It appeared here that more funding was required, in addition to the municipal resources. The province of Gelderland decided to contribute to the realization of the second phase, also from the programme 'vibrant city centres at the river' (Gemeente Nijmegen, 2018).

In August 2017, the first meeting with the sounding board was being held. In this sounding board, different stakeholders were included: the chairman of the entrepreneurs association, several representatives of residents and employees of the municipality (Gemeente Nijmegen, 2017 b). In this meeting is mentioned that the municipality was still in consultation with Rijkswaterstaat about the final design, and an update was given on the negotiations with the province about the subsidy (Gemeente Nijmegen, 2017 b). Afterwards, the attendees could ask questions or point out points of interest for the quay. Issues that were mentioned were about what would happen with the trees, that good agreements should be made with the entrepreneurs about the supply and if the cruise ships could moor more to the west side of the quay, to maintain the view on the water (Gemeente Nijmegen, 2017 b).

In March 2018, the final design of the Waalkade was presented to the city council, see figure 20. Some important parts of the design (Gemeente Nijmegen, 2018):

- The existing asphalt on the square and in front of the catering industry will be replaced by grass, plants and trees. The quay will be lowered and sloping further down.
- Through traffic is only possible for non-motorized traffic and the bus.
- The grass does not hinder the organization of large events.

- Because of the greening of the quay, the temporary permitted parking in front of the square near the Holland Casino will be cancelled. New parking spaces are available on the quay, outside the planning area.
- The most eastern part of the quay will be partly lowered, creating a lower plateau where small-scale events and outdoor activities are possible.



*Figure 20: Final design Waalkade (Gemeente Nijmegen, 2018)*

According to the municipality, there is support from the involved stakeholders for almost all items in the final design. Some individual partners have difficulties with the chosen implementation on a limited number of points (Gemeente Nijmegen, 2018). For example, for the catering industry, making parking possible at the level of the Waalkade on the east side under the Waal bridge is an important requirement. The municipality, on the other hand, believes that the already existing parking spots at the westside of the quay, together with the nearby parking garage Kelfkensbos is a good alternative for parking under the bridge (Gemeente Nijmegen, 2018).

After presenting the final design to the city council in March 2018, the council approved the final design for the Waalkade (Gemeente Nijmegen, 2018).

In the autumn of 2018, the tendering of the project took place and the execution started (Gemeente Nijmegen, 2019). See figure 21 for the Waalkade after the renovation. In front of the Holland Casino, a part of the quay is lowered, and stairs have been added (Gemeente Nijmegen, n.d.). This section will be flooded at high tide. The renewed quay was officially opened in September 2020.





Figure 21: Waalkade after the renovation (Strijbosch, 2019)

### 5.3 Process analysis

In this section, the results are interpreted and analyzed using the seven hypotheses mentioned in section 2.6.

#### 5.3.1 System context

##### Actors

In this project, the main executing actor is the municipality of Nijmegen. Actors influencing the process are Rijkswaterstaat, the water authority Rivierenland, the province of Gelderland and the entrepreneurs, residents and other relevant stakeholders around the quay.

Rijkswaterstaat and the water authority are involved in this process because certain physical measures, such as lowering the quay, require a water permit following the Water Act (Gemeente Nijmegen, 2016). Besides, parts of the quay are legal property of these two actors. Another governmental actor influencing this process is the province of Gelderland, who is subsidizing the municipality from the programme 'vibrant city centres at the river'.

Next to these governmental partners, other involved parties include the entrepreneurs, residents and other relevant stakeholders around the quay. From the start of the project, the municipality was in contact with entrepreneurs around the Waalkade. First, through the entrepreneur association in which the entrepreneurs are united, called *Vereniging Waalkade Ondernemers*. Next to this entrepreneur association, *Het Huis voor de Binnenstad* was involved, which is a foundation that aims to promote the inner city of Nijmegen and functions independent of the municipality (R.8). Also, *Architectuurcentrum Nijmegen* was approached to collaborate in this process. Architectuurcentrum Nijmegen is an organization that is often involved to bring in relevant knowledge about developments in urban planning, spatial development and architecture.

Residents were involved in several ways during this process. First of all, the residents living around the quay were represented in the sounding board. Not only residents living around the quay were involved

in this process, but all residents of Nijmegen were invited to think about the future design. In this project also 'the resident of Nijmegen' or 'the visitor of the quay' was an important stakeholder, which is usually not the case in urban development projects: *'if you start a project in a neighbourhood, for example, then it is really clear that the residents of that neighbourhood are the most important stakeholders. And that was not the case now. That was also the visitor who comes there.'* (R.6). In order to reach this group of people, several approaches have been used: using social media, a walk-in centre, walk-in meetings and online questionnaires. The respondents indicate that enough effort has been done to reach all relevant stakeholders: *'Yes, I think they really did their best to invite everyone, and then it is up to people themselves whether they come or not, whether they feel involved'* (R.7). The different approaches to reach all relevant stakeholders has led to more reactions than expected: *'I think we did reach a lot of people. Of course, you never know if you have reached everyone. But I found it surprising how many people ultimately responded'* (R.6). Reasons mentioned for this unexpected number reactions were that it is a well-known and popular place in Nijmegen, besides: *'people felt that that place was pinching, that it could actually be much better. Because it gives an eerie feeling: terraces of the cafes are in the shade for most of the day, you cannot sit comfortably by the water'* (R.9).

### **Power/resources**

Several types of resources can be found in this process. First of all, financial resources. The municipal contribution to this project is €2.6 million (Gemeente Nijmegen, 2018). Besides, the municipality receives a subsidy from the province of Gelderland. The province is subsidizing this project because it contributes to strengthening the connection between the river, the city centre and the green environment, one of the aims of their programme *vibrant city centres at the river*. This subsidy amounts to €1.2 million (Gemeente Nijmegen, 2018). Some negotiations preceded the granting of the subsidy: *'it was difficult for the province to find a way to fund it. Because those subsidies keep changing, those programs.[...] Anyway, that was quite a bit of a puzzle. [...] But in the end, it turned out okay'* (R.6). This subsidy goes directly to the greening of the quay. A total of €3.6 million is therefore available for this project.

Next to the municipal contribution and the subsidy of the province, in the council proposal on the vision of the Waalkade, a proposal has been made for a crowdfunding campaign (Gemeente Nijmegen, 2015). This would ensure that the involvement of the entrepreneurs around the quay and other interested parties would be also strengthened (Gemeente Nijmegen, 2015). However, this crowdfunding did not take place. Instead of this crowdfunding, a street manager has been appointed who, together with the entrepreneurs on the quay, has ensured a more uniform appearance of the catering industry on the quay (R.6).

As stated before, there are three types of knowledge: natural science, social science and local knowledge. First of all, natural science, which includes here the technical aspects of the design can be understood. Rijkswaterstaat plays a role here, this organisation did the calculations for the municipality regarding the lowering of a part of the quay. From the beginning of the project, Rijkswaterstaat was involved, to advise the municipality on the design of the quay: *'then you will also receive suggestions at an early stage, so that you will not encounter problems with the permit application, for example concerning the choice of building materials'* (R.6). The municipality is also a contribution of natural science. After the final design has been chosen and it was being developed more technically, there was a change in the composition of the team in order to bring in more technical knowledge: *'that's fine, because then at least you have new energy, and other experts at the table'* (R.6). Social science, which contains political science, knowledge of public administration, management, law, etc. is brought in by

the municipality. Local knowledge includes experiential knowledge and local rules, etc. As in Arnhem, this type of knowledge is mostly brought in by the residents, entrepreneurs and other stakeholders around the quay.

Time as a type of resource is here, different than in Arnhem, relevant to mention. As stated before, the entrepreneurs around the quay had no financial contribution to the project. Instead, their investment lies in the time and effort put in this project: *'it was in their involvement, in their hours and in the activities that were organized there; they either helped there or provided facilities, and things like that'* (R.7). Especially with the temporary placemaking activities: *'they helped manage that: watched it, cleaned it, and did extra things around it'* (R.7).

The last type of resources are formal competences, which involves the power derived from access based upon formal or informal rules. In this process, formal competencies can be found in the dependency of the municipality on Rijkswaterstaat for the water permit. Before the municipality started the intensive collaboration process, the municipality submitted an application for a permit to carry out activities in the water system of both Rijkswaterstaat and the water authority Rivierenland (R.6). According to the Water Act, the application is processed and a decision is taken by the administrative body of the highest authority, in this case Rijkswaterstaat.

### **Rules of the game**

The rules of the game consist of the legislation and procedural norms which are agreed on by the participants. First of all, it is important to look at the different agreements that have been made between the participants in the project. Between the province and the municipality, agreements have been made concerning the subsidy and where it will go to. Another important collaboration is between the municipality and Rijkswaterstaat. In this collaboration, however, no cooperation agreement has been signed. Even though they did enter the process together, Rijkswaterstaat did not subsidize this project. Also with the entrepreneurs, the municipality did make agreements about the collaboration and, for example, on achieving a uniform appearance on the quay. However, no cooperation agreement is signed between the municipality and the entrepreneurs (R.6).

Something also important to mention in this section, is who owns the quay. The Waalkade is not municipal property. The section under the Waalbrug and some other parts of the quay are owned by Rijkswaterstaat (R.6). However, not Rijkswaterstaat, but the water authority Rivierenland has the legal duty of care for the quay. Therefore, this organization has to ensure that the quay meet the safety requirements and to ensure the necessary preventive management and maintenance (Bronsvelt, 2015).

Next to the ownership of Rijkswaterstaat, large sections of the quay are the property of the Central Government Real Estate Agency (*Rijksvastgoedbedrijf*) (Gemeente Nijmegen, 2016). This means that a municipal initiative requires the consent and collaboration of this agency (Gemeente Nijmegen, 2016). In the consultations with the Central Government Real Estate Agency, the municipality also asked for a financial contribution, which they didn't get. However, they did get consent to start the project (R.6).

Concerning the procedural norms, the project in Nijmegen does not have to follow such a strict organization structure as the project in Arnhem. The procedure in this project is structured as follows; first, after the project team has decided on the final design, the mayor and alderman had to approve the design as well. Followed by a so-called *kamerronde*, where the council members could question the aldermen about the plan. Afterwards, the city council formed a decision on the plan. After this

decision has been made, the public tender of the project started, in this phase, a contractor has been found to execute the project, and the execution could be started (Gemeente Nijmegen 2018).

## **Discourse**

The dimension of the discourse involves which ideas or perceptions the actors have regarding the problem, the aims, interests and goals of the different participants have and the process and what beliefs and general ideas are present in the system context.

First of all, the problem definition of the different partners. In this project, the municipality and the non-governmental actors had more or less the same view on the quay before the regeneration. Although the potential of the area was acknowledged, the area was lacking attractiveness: *'an oasis of asphalt, no ambience (R.7); 'it was a very cluttered area, and a bit of a victim of the number of functions. [...] A great number of aspects came together there. And that led to a cluttered area. It was old too (R.8)*. This shared problem definition caused a shared sense of urgency: *'it was really a shared sense of urgency, there was nobody who thought: why? It's fine anyway' (R.8)*. Increasing the attractiveness of the quay fits also in line with the vision of the province, according to their programme *vibrant city centres at the river*.

Besides this shared problem definition, the aims, interests and goals differ between the participants. This difference is best visible in the discussion about parking and the driving of the bus. Although most participants agreed on removing the parking lots, the entrepreneurs wanted to keep the same amount of available parking lots. They feared losing customers as their customers were used to park near their destination. However, after realizing that the quay would be more attractive if the parking spaces were gone, which will eventually lead to more visitors, the entrepreneurs agreed.

In contrast to what is mentioned above, Rijkswaterstaat and the water authority do not have any interest in the attractiveness of the quay or the parking and driving of the bus. Instead, their interest lies in if the water safety standards are met. Because of the duty of care of the primary flood defence, the water authority Rivierenland conducts an assessment round once every 12 years (Bronsveld, 2015). The last assessment round has been conducted in 2014 and this inspection showed that the quay still met the safety standards (Bronsveld, 2015). Therefore, no additional strengthening tasks had to be executed, but the current safety level had to be guaranteed. In order to guarantee this level, some adjustments had to be made in the design, including adjustments in the slope.

## **Drivers for CGR**

When looking at the four drivers for a CGR (leadership, consequential incentives, interdependency and uncertainty), all of them can be found in the system context of this project.

First of all, leadership, which refers to the presence of an identified leader who is in a position to initiate a CGR. In this project, the municipality can be seen as the leader. The project has started with a motion adopted by the local council of Nijmegen. After this motion, the municipality started to bring different stakeholders together. For all other participants, it was obvious that the municipality took the lead in this project.

The second driver of consequential incentives involves incentives that exist to include participants to engage together. In this project, the municipality needed the collaboration and support of Rijkswaterstaat, in order to get the water permit. Next to these consequential incentives, also



interdependency exists between different participants. First of all, because of the same reason mentioned above, there is a dependency between the municipality and Rijkswaterstaat. Besides, some parts of the quay are legal property of Rijkswaterstaat, collaboration between the municipality and Rijkswaterstaat is, therefore, inevitable. Another interdependency exists between the municipality and the entrepreneurs; the municipality needs the input from the entrepreneurs, residents and other stakeholders to increase the attractiveness and to include as many wishes as possible in the design: *'for the project Levende Waalkade, we really wanted the citizens to contribute to this'* (R.7).

Uncertainty as a driver means that participants collaborate to reduce, diffuse and share risk. In this project, uncertainty exists because there is a disbalance in knowledge: the participants do not have all three types of knowledges, as has been written down above. Rijkswaterstaat and the municipality needed to work together to learn what was technically feasible with the lowering of the quay.

For what is stated above, the first hypothesis (*at least one of the four drivers must emerge from the system context to start a collaborative process*) will be accepted for this case.

### 5.3.2 Collaborative dynamics

#### Principled engagement

Principled engagement relates to the involvement, inclusion and representation of the actors. It entails four elements: discovery, definition, deliberation and determination.

Discovery involves the identification of individual and shared interests, concerns and values. As stated before, all participants share the vision that the spatial quality of the quay should be improved. However, some concerns existed among the participants. Beforehand, these concerns were mainly about through traffic, parking lots and the driving of the bus, because there were some differences in visions about solving these issues. Sometimes it turned out to be difficult for the participants to weigh up the interests: *'it was not the case that the resident or the entrepreneur was the most important stakeholder. That was also the visitor who comes there. So that occasionally created a field of tension, to explain that it is an urban development and not a neighbourhood where you want to change something'* (R.6).

The element of definition is about building shared meaning by finding common purposes and objectives. Finding common purposes and objectives in this project was not that hard, because all participants shared more or less the same problem definition and agreed that something had to change in order to improve the spatial quality of the quay.

Deliberation includes the communication between the participants and consists of the advocacy of interests and the effectiveness of strategies and interventions. The observations showed that there is room for improvement here. First of all, the advocacy of interests. Overall, relevant stakeholders have had the opportunity to have a say in the design of the quay. According to the respondents, all relevant stakeholders have been reached and enough effort has been put into this: *'the wishes of everyone, regardless of age, origin. If you wanted to say something about the Waalkade or had any wishes about it, you could submit them'* (R.7). Although the respondents are positive about these open participation moments, the respondents agree that the representation of the different interest groups in the sounding board group was not always optimal. First of all, this it is not always clear if a representative is speaking for himself or for a group: *'then you have to take a look: that sound group, are they talking to each other [their supporters]'* (R.6). In spite of this unclarity, no agreements have been made on this. Besides, because it was a lengthy process, which was also delayed because they had to wait for the

motion regarding the traffic on the quay, some changes within the board of the entrepreneurs association have occurred. These changes have led to inconsistencies within the association: *'a decision of such an association is very difficult to keep stable. And we saw that sliding. And yes, then you also get that, in such an association, people no longer agree with each other'* (R.6). This has resulted in the municipality being confronted with varying opinions and support, both concerning the implementation of the terraces and the issue of parking cars (Gemeente Nijmegen, 2018). On the other hand, according to one respondent, these changes within the board are part of the deal: *'it is normal, it is part of such a process. And you just have to relate to that'* (R.8).

Another note on the representation in the sounding board concerns the presence of Rijkswaterstaat. A representative from Rijkswaterstaat was not present on a structural basis but was occasionally present. This ensured that there was an indirect line of communication between the sounding board group and Rijkswaterstaat, which meant that it sometimes took longer before there was clarity on a particular subject. Besides, because of this indirect line, some reasoning about why something was or was not possible did not get through to the sounding board group: *'that is important in such a process to also gain support for arguments why something is or is not possible. And I would have found it valuable if that sound was much more direct to the table, instead of coming through the municipality'* (R.8). However, not all respondents agreed on this, because adding more participants makes the process take longer: *'so maybe for the speed, it can be an advantage that you say: with a smaller group we can at least move forward faster and take steps'* (R.9).

The second element of deliberation is the effectiveness of strategies and interventions. Before collecting any ideas on the future design of the quay, several criteria were set. Despite these conditions, participants were asked to think outside of the box, especially with the open ateliers, where everyone was invited to share their ideas, because: *'you can even get fantastic ideas from children that you as adults no longer think about'* (R.7).

The last element of principled engagement is determination, which consists of procedural decisions and substantive determinations. From the municipality, no obligations were imposed on the members of the sounding board and the other stakeholders around the quay.

### **Shared theory of action**

Through the working together of the four elements of principled engagement, participants develop a shared theory of action, which includes the groups' understanding of the size of the problem or challenge as well as the scope and the scale of the groups' chosen activities or interventions.

In this project, a shared theory of action was present in the way that all participants agreed on the problem definition. Although, balancing interests turned out to be difficult at times, as explained above. Yet the participants understood that collaboration was necessary: *'you are jointly responsible for that [making a place where people are willing to give something extra to come]'* (R.7). The timing of the project has also caused a certain momentum; because of the other developments around the Waal in Nijmegen, there was a shared sense of urgency amongst the participants to also improve the eastern part of the quay (R.8).

The input of the different participants has helped the municipality first to set different scenarios and later to choose the right scenario. Besides, their input has led to minor changes in the design, such as the placement of the trees and the terraces. In addition, during the implementation, a contact person of the municipality was also available to discuss matters that were still encountered during the

implementation. Because of these factors, it can be assumed that there are fewer unintended negative consequences for the residents and entrepreneurs. Therefore, hypothesis six, *a shared theory of action will lead to impacts with fewer unintended negative consequences*, will be accepted for this case.

### Shared motivation

Shared motivation refers to the interpersonal and relational elements of the collaborative dynamics and consists of four elements: trust, mutual understanding, legitimacy and commitment.

Trust is about the trustfulness and reliability of the other actors. This is influenced by the prehistory of collaboration and the evaluation of this. Because the municipality started in 2012 with the first phase of the improvement of the quay, the municipality could make use of their existing network of residents and entrepreneurs for the second phase. Besides, the participants also knew each other. Because of this already existing network, short lines of communication existed between the participants during this project. However, before the renovation of the quay, this was not always the case. For example, the relationship between the municipality and the entrepreneurs was not that good before the project. These two parties faced each other, reasons mentioned for this are different in interests and insights, prejudices, not knowing each other and not entering the dialogue together (R.7). This has caused a certain distrust, which was still present during the collaborative process: *'the relationship has been seriously at stake several times, that there was no more trust from the entrepreneurs towards the municipality [...] this was mainly because, according to the entrepreneurs, agreements were not kept [by the municipality]'* (R.7). This applies to the decisions made on parking and the driving of the busses; eventually, the participants in the sounding board agreed on that no through traffic, so also no busses, were allowed on the quay. However, the city council decided that busses had to continue driving on the quay: *'so that has turned out politically differently, and that is also a political consideration of all kinds of other arguments. [...] But on this process, it actually had a bad effect. [...] In the end that feels frustrating for participants of course. Who may have made a concession, and then are also overruled. So that is difficult'* (R.8). Some time passed before the city council has made its decision, in the meantime, it was the task of the project team to keep the participants involved by informing them: *'it is very important to keep talking and also try to inform people before you know that such a political decision is going to be made, under embargo, that it is coming'* (R.6). However, the respondents indicated that informing the participants could have been done in a more careful way: *'we also noticed once in a while that some information was not provided quite conveniently or on time, or not everything was shared. [...] And entrepreneurs immediately became very suspicious of this, they already have a bit of a suspicion of the government.'* (R.8).

This distrust and way of informing had also influenced the second element of shared motivation: mutual understanding, which is the ability to understand and respect others' positions and interests. Because some participants felt that relevant information was not always distributed on time, it was hard for them to understand the position of the municipality. The reason for this 'not satisfactory' way of distribution was that the members of the project team of the municipality had to await decisions made by the city council. This has also put the project team in a difficult position: *'at one point the council decided to remove the busses from the Burchtstraat and then more busses went on the Waalkade. I had to explain that. Sometimes you have that something is decided on another table that you cannot influence. That really bothered us a lot'* (R.6). The other participants did not always understand this: *'that always has the opposite effect on that involvement. [...] They cannot empathize so well with that something takes time, say. So you will lose support'* (R.8). This has had also influence on the commitment of the participants, as will be explained below.

Another factor that played a role in determining the mutual understanding, was that the municipality did not follow the same route with all participants. One respondent indicated that it would be useful for the participants to put the entrepreneurs together with the residents at the table in an earlier stage: *'maybe it is also good to keep them partly apart. But sometimes you also have to mix things up. Because they do live and work together there'* (R.7). Besides, the observations showed that it would be more convenient for the non-governmental participants to have a direct line of communication with Rijkswaterstaat. For example, by making Rijkswaterstaat more visible in the decision-making process, this would create a better understanding of why certain issues or adjustments were or were not possible.

Legitimacy relates to the confirmation of credibility and trustworthiness of other participants. Because of the 'false start' between the municipality and the entrepreneurs (their inconvenient relationship before the process), the municipality really had to prove its credibility and trustworthiness to the other participants. Which has not always worked out well, as has been explained above.

The last element of commitment is the dedication of the participants to the CGR and its purposes and goals. This element consists of two indicators: the original motivation to participate and the willingness to accept outcomes. The motivation to participate lies in the fact that all participants wanted to improve the attractiveness of the quay, and had, therefore, a shared goal. Their willingness to accept outcomes differ among the participants. On the one hand, a participation process sets certain expectation amongst participants that they have a say in the process (Gemeente Nijmegen, 2018). On the other hand, they know that they are not going to make the final decision: *'that has to do with money or other choices and permission and with the relationship with the province and Rijkswaterstaat. In the end, it is not we who are making the decision, but the municipality'* (R.7).

### **Capacity for joint action**

Capacity for joint action creates the potential for taking effective action, which is done through four aspects: procedural & institutional arrangements, leadership, knowledge and resources. Within this dimension, there is some overlap with the system context, relating to the rules of the game and power/resources.

Procedural and institutional arrangements include the range of process protocols and organizational structures necessary to manage repeated interactions over time. This element has overlap with the element of *rules of the game* within the system context and is therefore described in the system context section.

Leadership can be present in six different roles, as mentioned in section 2.7.2. In this project, several leadership roles can be found. First of all, the role of the initiator, who starts a collaborative process, this role can be assigned to the municipality. The second leadership role of the sponsor can be appointed to the municipality and the province, as they both invest money in this project. Then the role of convener, who assists in creating the right conditions for collaboration and bringing in participants to the table. This role can also be assigned to the municipality, as they make use of their existing network of stakeholders around the quay (entrepreneurs and residents) and other governmental parties (Rijkswaterstaat, the province and other parties mentioned in section 5.3.1). The fourth leadership role is the role of the facilitator/mediator who acts as an impartial manager of collaboration. This role can be appointed to the two independent process managers hired in by the municipality to assist in organizing the open ateliers and collecting the ideas. These process managers help to *'ensure that the process runs smoothly, that everyone remains involved, that all stakeholders*

*also come into their own in that process'* (R.9). The role of the scientific and technical expert can be primarily assigned to Rijkswaterstaat, who did the calculations for the quay. The last leadership role is the role of the public decision-maker, in this project, the municipality takes in this role.

The presence of the two elements of knowledge and resources have already been discussed in the system context and will not be repeated here.

Summarized, all variables and elements are, up to a certain degree, visible in the collaborative dynamics of the project in Nijmegen. The hypothesis belonging to these dynamics (2, 3 and 4) are tested using a straw-in-the-wind test. This means that if a hypothesis passes this test, it only slightly weakens rival hypothesis. If statements have to be made about accepting or rejecting the hypotheses belonging to the dynamics, the causal mechanisms of the collaborative dynamics should be strongly visible. When looking at hypothesis 2, *principled engagement will enhance and help sustain shared motivation*, some elements confirm a causal relation. For example, by finding shared interests or by defining common purposes and objectives, understanding of other positions and interests emerges. However, the evidence found cannot be considered strong enough to accept the hypothesis. Therefore, this hypothesis will be, for this case, neither accepted nor rejected. The same applies to hypothesis 3, *shared motivation will enhance and help sustain principled engagement*. The observations showed that a prehistory of collaboration and the confirmation of credibility/trustworthiness can influence the tasks and expectation of other roles. The same goes for hypothesis 4, *principled engagement and shared motivation will generate and sustain capacity for joint action*. For example, after common objectives are defined and there is a certain willingness to accept outcomes, the potential for taking effective action is created. Both hypothesis 3 and 4 will also be neither accepted nor rejected for this case.

### 5.3.3 Productivity performance

The effectiveness of the CGR is measured with the productivity performance. Assessing the productivity performance helps to make statements about the extent to which collaborative governances has helped integrating water safety and spatial quality in Nijmegen. This has been done by three elements of the productivity performance: equity, effectiveness and sustainability.

#### Equity

Equity refers to the somewhat equitable distribution of benefits, costs and risks. Both the municipality and the province have invested in this project. The residents, entrepreneurs and other stakeholders around the quay did not have any financial contribution into this project. Although they did not invest money, their investment lies within the time and effort. According to the respondents, this distribution can be seen as fair: *'Yes, apparently, otherwise the project would never have been approved'* (R.7).

#### Effectiveness

The effectiveness is the extent to which the CGR's actions produce their intended effect. This is measured by the goals and aims of the process. As stated before, the municipality aimed to improve the attractiveness of the quay, and all participants agreed on this main goal. Although it is difficult to measure objectively, the participants agree that this has been done successfully.

Another indicator determining the effectiveness of the CGR is whether the actions could be or could not be achieved by the participants alone. The opinions of the respondents differ on this: *'I think this is also close to the wishes of many people who have been involved from the municipality. [...] It is not the case that the public necessarily had to force something that the municipality did not listen to at all'* (R.8). Although the design would be more or less the same, the adjustments lie in the details. For example, the terraces would have looked different (R.6). Although the final design would be generally the same, the respondents agree that this process of co-creation has led to a higher acceptance of the participants: *'I think it would have been very difficult to persuade entrepreneurs to switch from asphalt to green without the process. Bringing them along will help them understand'* (R.6); *'I think you can say that it contributed to a much better acceptance rate than that it contributed to a fundamentally different plan'* (R.8). Hypothesis 5, *actions resulting from collaborative dynamics cannot be realized by the participants alone*, will therefore be accepted for this case.

## Sustainability

Sustainability is the ability to continue the demonstrated effects over time. One of the preconditions set was that the public space should be kept flexible. One of the things that could change in the future, is that the bus would no longer ride on the quay. This discussion about busses could start again after a new city council has been elected. This has been taken into account in the design of the quay: *'suppose that the bus would not ride on the quay anymore, then the promenade can be widened quite easily. Then some adjustments are possible'* (R.6). Next to these adjustments, also other changes in the design are possible: *'or the stairs, which could possibly be adjusted a bit. Because yes, in the end, you only have a certain budget'* (R.6). Therefore, this design can be seen as sustainable.

Finally, the last hypothesis, *the working together of the three components of collaborative dynamics will lead to a better integration of water safety and spatial quality in urban waterfront regenerations* has to be accepted or rejected. The observations showed that within this project, participants worked together to integrate water safety and spatial quality. Something that has to be taken into account is that, in comparison with the project in Arnhem, water safety played a significantly smaller role in Nijmegen. Also because of the indirect line of communication between the sounding board and Rijkswaterstaat, water safety did not play a major role for these participants. Therefore, one could say that two different collaborative processes/dynamics have been followed by the municipality: one with the non-governmental stakeholders and separate one with Rijkswaterstaat. In this research, a lot of data has been collected for this first process, while less data on the process between the municipality and Rijkswaterstaat has been found. About the first process, it can be clearly stated that because of three components, the participation of the stakeholders has led to a better integration of the two issues. But in the end, the contribution of all participants has ensured that there is now a quay where both issues are integrated. Therefore, it can be assumed that the collaborative dynamics have played a role in the integration of both goals. Therefore, the last hypothesis will be accepted for this case.

In the section above, provisional statements of the hypothesis are given, based on the data retrieved for this case. These statements are summarized in table 8, with '+' standing for accepted, '-' standing for rejected and '0' standing for neither accepted nor rejected.

1	At least one of the four drivers must emerge from the system context to start a collaborative process.	+
2	Principled engagement will enhance and help sustain shared motivation	0
3	Shared motivation will enhance and help sustain principled engagement	0
4	Principled engagement and shared motivation will generate and sustain capacity for joint action	0
5	Actions resulting from collaborative dynamics cannot be realized by the participants alone	+
6	A shared theory of action will lead to impacts with fewer unintended negative consequences	+
7	The working together of the three components of collaborative dynamics will lead to a better integration of water safety and spatial quality in urban waterfront regenerations.	+

*Table 8: Overview of hypothesis*



## 6. Conclusions and reflection

### 6.1 Conclusions

This research was carried out by conducting a multiple case study that helped to answer the main question: *'How can collaborative governance help integrate water safety and spatial quality in urban waterfront regenerations?'* and its corresponding sub-questions. This research aimed to evaluate the role of collaborative governance in the integration of water safety and spatial quality in urban waterfront regenerations by analyzing two cases: the Rijnkade in Arnhem and the Waalkade in Nijmegen. Combining these two goals will ensure a better organization of waterfront regenerations and, therefore, contribute to making better public spaces. Besides, resources will be used more efficiently. The role of collaborative governance in combining these goals has been explored using the method of process-tracing. Seven hypotheses have been formulated upfront. With the collected evidence, these hypotheses could be accepted or rejected for the two cases. Data for this research was conducted by a combination of interviews and a document analysis.

In this section, first, the answers to the sub-questions will be given. Besides, the hypotheses will be discussed with the sub-questions they correspond to. Afterwards, a final conclusion of this research will be given.

#### *6.1.1 How can the system context of the two regeneration project in Arnhem and Nijmegen be described?*

The system context of the Integrative Framework for Collaborative Governance is described using the Policy Arrangement Approach. For the project in Arnhem and Nijmegen, the system context can be described similarly.

First of all, the dimension of the actors involved and their influence in the process. An important element of collaborative government is the involvement of both governmental and non-governmental actors. In both projects, the same governmental actors are involved: the local municipality, the regional water authority, the province and Rijkswaterstaat. Even though the participants are the same, the degree of influence in the process differs, depending on the leading aim of the project. Next to the mentioned public participants, in both projects also similar non-governmental participants are involved: residents, entrepreneurs and their corresponding associations.

Also, the distribution of power/resources of the actors involved is comparable. There are several types of resources that play a role, first of all, financial resources. The participants who invest in the waterfront regenerations are in both cases the governmental actors. Besides, the degree of investments appears to be connected with the leading goal. In Arnhem, the water safety goal is leading and the biggest investment comes from the Dutch Flood Protection Programme. In Nijmegen, the municipality is the biggest investor, because the spatial quality issue is leading. In both projects, the non-governmental actors do not have any financial contribution. Instead, the resource of time can be seen as an investment of these actors.

Thirdly, the distribution of knowledge around the actors is generally the same. Natural science is brought in by the water authority, the municipality, Rijkswaterstaat or engineering firms hired in by these actors. Social science includes knowledge on political science and public administration, the municipality is the biggest contributor to this type of knowledge. These two types of knowledge have been widely verified and have a high degree of generalizability. On the other hand, local knowledge is only applied or verified in certain areas and involves knowledge on local rules, traditions and the community. This type of knowledge is mostly brought in by the non-governmental actors because this

group has a better knowledge of their day-to-day behaviour. Including this knowledge can, according to van der Heijden (2014), lead to more suitable and effective governance tools.

Some differences can be found in the dimension of the rules of the game, which are the mutually agreed formal procedures and informal routines of interaction with institutions. These differences have to do with the leading aim of the project. This corresponds to Ansell & Gash (2007), who state that actors use different processes. While the project in Arnhem follows the strict project organization structure, as is necessary to receive the subsidy from the DFPP, the project in Nijmegen follows a less strict structure. However, the legislation around the responsibilities of the actors is the same in both projects.

The discourse entails the set of norms and values, the problem definition and approaches to the solution of the actors involved. Following the cases, globally two different discourses can be found: the water safety discourse and the spatial quality discourse.

Rijkswaterstaat and the water authority share the same discourse, their problem definition concerns meeting the safety standards. This water safety discourse is rather concrete, compared to the spatial quality discourse, because it has strict standards, it is easy to say when a quay does or does not meet these standards. On the other hand, the spatial quality discourse is rather abstract because spatial quality is more complex to measure as it is strongly linked to, amongst all, personal preferences. As has been stated in the literature, the involved actors need to agree upfront on the interpretation of spatial quality. Finding this definition has been done by bringing the relevant stakeholders around the quay together to find common ground for wishes around the quay.

With these four dimensions, the system context can be described. Within this context, a situation may arise in which the current situation is determined as suboptimal and a change is needed. In this research, two different reasons for change can be determined. In Arnhem, the most important reason for the change is the new water safety standards, which can be seen as a change in the rules of the game. The most important reason for a change in Nijmegen is the aim of a more attractive quay, which can be seen as a change within the discourse dimension. As stated before, a change in one of the dimensions may induce a change in other dimensions. These changes together with the aim for the desired situation, lead to the drivers for collaborative governance, which will be discussed in the next section.

#### *6.1.2 Which drivers did emerge from the system context?*

According to the integrative framework of Emerson et al. (2012), four drivers can emerge from the system context that stress the importance of working together between actors. The causality that at least one of the four drivers must be present to start a collaborative process has led to the first hypothesis. This hypothesis was tested using a hoop test, meaning that the evidence provides a necessary, but not a sufficient explanation for this causality.

The four possible drivers are leadership, consequential incentives, interdependency and uncertainty. In both cases, multiple drivers are present.

First of all, leadership, which is the presence of an identified leader who is in a position to initiate and help secure resources and support for a CGR. In both cases, a governmental actor can be seen as the leader/initiator in the process: in Arnhem the water authority and in Nijmegen the municipality. As has been stated by van der Heijden (2014), a government is also expected to take up this role in

collaborative governance. In both projects, this leader is recognized by all participants. According to Emerson et al. (2012), the leader should possess a commitment to collaborative problem solving, a willingness not to advocate for a particular solution and exhibit impartiality to the preferences of participants. The commitment to problem-solving can be recognized by the leaders of both projects. One of the reasons for starting a collaborative process and to include multiple stakeholders, was to collect many opinions and wishes for the quay, to make the quay a more attractive place. Before, or during this process, problems needed to be solved to continue the cooperation. It can, however, not be stated that the leaders exhibit impartiality to the preferences of participants, as the leaders have their own organizational preferences and aims as well.

The second driver is the presence of consequential incentives to include leaders and participants to engage together. In Arnhem, this driver can be seen in the aspect that the municipality needed the cooperation of the water authority to let the Sint Jansbeek flow through the water defence. In Nijmegen, the municipality needed cooperation and support of Rijkswaterstaat to get the water permit.

The third driver is interdependency and involves incentives to collaborate when individuals and organizations are unable to accomplish something on their own. This driver can be found in the dependencies of the lower level governmental organization on the higher governmental organization for receiving subsidies. To receive these subsidies, there are rules the lower level governmental organization needs to apply to, which have been drawn up in advance. Interdependency between actors also existed in both projects because several actors legally owned parts of the quay. Consultation between the different actors is, therefore, needed before adjustments can be made.

The last driver is uncertainty, this driver drives actors together to collaborate to reduce, diffuse and share risk. Uncertainty often exists because of a disbalance in knowledge. As has been elaborated upon in the description of the system context, the actors all have a different type of knowledge. This knowledge needs to be shared in order to fulfil all the aims of the processes.

	<b>Hypothesis</b>	<b>Case 1</b>	<b>Case 2</b>
1	At least one of the four drivers must emerge from the system context to start a collaborative process.	+	+

The four drivers of collaborative governance can be found in both cases. Therefore, the first hypothesis can be definitively accepted. However, because this hypothesis was tested using a hoop-test, the evidence does not give a sufficient explanation for this causality.

### *6.1.3 What are the collaborative dynamics between the actors in Arnhem and Nijmegen?*

The present drivers form a starting point of a CGR. Following the integrative framework for collaborative governance, the next step is to examine the elements of the collaborative dynamics. For both cases it has been analyzed how the elements are present in the projects, using the indicators mentioned in chapter 2.7

The collaborative dynamics consists of three components that reinforce, influence and support each other. Below, the three components will be described, followed by the analysis of the hypotheses.

## Principled engagement

The element of principled engagement refers to the involvement, inclusion and representation of the actors and their behavioural interactions. Principled engagement occurs over time through the iteration of four basic process elements: discovery, definition, deliberation and determination.

Discovery entails the identification of individual and shared interest, concerns and values. In both projects, the respondents could identify shared interests within the aims of the projects. These shared interests resulted in common purposes, which is an element of definition. Definition is about building shared meaning by finding common purposes and objectives, agreeing on the concepts and terminology and clarifying tasks and expectations of other actors. Besides, in Arnhem the actors had to agree on the phasing of the project, this did not lead to any disagreements.

Deliberation is about communication between participants. In both cases, non-governmental actors are approached in a similar way; in a sounding board with representatives and with open walk-in meetings. In both projects, the sounding board is seen as a good representation of all relevant stakeholders, and enough effort has been put in reaching all relevant stakeholders. As has been stated by van der Heijden (2014), including all relevant stakeholders makes the process of governing more difficult. This can be seen in the two projects as well: in Arnhem, the respondents did not always agree on the level of detail in which the non-governmental stakeholders could participate. But on the other hand, if stakeholders are excluded from the collaboration, their voices are missed by the other participants. In the case of Nijmegen, this caused that it took longer before there was clarity on a particular subject. Besides, reasoning about why something was or was not possible was not received by all participants.

The last element of determination concerns the decisions made within the collaboration. In both projects, no obligations were imposed on the non-governmental actors.

## Shared theory of action

Through working together of the elements of principled engagement, a shared theory of action is being developed. This shared theory is the groups' understanding of the size of the problem or challenge together with the scope and the scale of the groups' chosen activities or interventions. Emerson et al. (2012) stated that actions resulting from collaborative dynamics are more likely to be implemented if a shared theory of action is identified among the participants. This causality has led to the sixth hypothesis. This hypothesis was tested using a hoop test.

In both projects, a shared theory of action was present in the way that all participants agreed on the leading aim of the project, with the aim of either improving spatial quality or water safety. Despite agreeing on the leading aim, participants had their own goals, which differed up to a certain extent. The input of the different participants has helped the leaders of the project to set different scenarios and later to choose the right scenario. Besides, this input has led to minor changes in the designs but has also led to agreements that have been made about the implementation, to limit nuisance.

	Hypothesis	Case 1	Case 2
6	A shared theory of action will lead to impacts with fewer unintended negative consequences	+	+

The collected evidence, thus, showed that because of a shared theory of action, the impacts resulting from collaborative governance had fewer negative consequences. However, because this hypothesis was tested using a hoop-test, the evidence does not give a sufficient explanation for this causality.

### **Shared motivation**

Shared motivation refers to the interpersonal and relational elements of the collaborative dynamics and consists of four elements: trust, mutual understanding, legitimacy and commitment.

The element of trust is about the trustfulness and reliability of the actors. A well-reviewed collaboration history plays an important role within this element. The observations showed that a good prehistory of working together ensured trust among the participants, while a poorly reviewed prehistory of collaboration caused a certain distrust among participants.

The second element is mutual understanding, which is the ability to understand and respect others' positions and interests. This element is partly determined by the element of trust. Besides, the observations showed mutual understanding can be created by an open and clear way of communication. Also, it could be helpful to make some participants more visible in the process. These factors could contribute to a higher understanding of others' positions and why certain issues or adjustments were or were not possible. In an ideal situation, this would be the case. However, it has to be noted that such a governmental organization has other priorities.

The third element of legitimacy relates to the conformation of trustworthiness and credibility of the actors. Although the starting point concerning the credibility and trustworthiness differed among the participants, no agreements have been made which could improve actors' credibility and/or trustworthiness. For example about informing or communicating with the people they represent. Therefore, it sometimes remained unclear whether someone was speaking on behalf of a group or out of self-interest.

The last element, commitment, is the dedication of the participants to the CGR and its purposes and goals, which is indicated by the willingness to accept outcomes. The observations showed that this appeared to be a result of mutual understanding.

### **Capacity for joint action**

Capacity for joint action creates the potential for taking effective action. This capacity is the result of four elements: procedural & institutional arrangements, leadership, knowledge and resources. Within this dimension, there is some overlap with the system context, relating to the rules of the game and power/resources.

Procedural and institutional arrangements include the range of process protocols and organizational structures necessary to manage repeated interactions over time. This element is similar to the element of the rules of the game within the system context. However, something relevant to mention here is that in both cases between some participants collaboration agreements have been signed. This appeared to be more of a formal procedure which did not lead to differences in the commitment of the participants.

The element of leadership involves the different leadership roles taken up by the participants in the CGR. Six different leadership roles have been identified by Emerson et al. (2015 *a*). The different leadership roles will not be repeated here. But what can be noted from both cases, is that almost all leadership roles are taken up by governmental participants.

The third and fourth element of knowledge and resources correspond to the element of resources within the system context.

After having described the components of the collaborative dynamics, statements can be made about the second, third and fourth hypothesis. These three hypotheses are tested using a straw-in-the-wind test, meaning that collected evidence may favour the hypothesis but is not decisive by themselves.

	<b>Hypothesis</b>	<b>Case 1</b>	<b>Case 2</b>
2	Principled engagement will enhance and help sustain shared motivation	0	0
3	Shared motivation will enhance and help sustain principled engagement	0	0
4	Principled engagement and shared motivation will generate and sustain capacity for joint action	0	0

As has been stated before, the collected data does not show strong evidence to prove the hypotheses but neither is it strong enough to disprove the hypothesis. Therefore, the three hypotheses were for both cases neither accepted nor rejected. However, the observations of the two cases showed that some elements within the variables confirm the causal relationship between the variables. Examples have been given in the analysis of the results of the cases. This is a natural process, meaning that if the elements are present in a positive way, the participants do not have to make an effort to let the variables reinforce each other. It is through this natural reinforcing process that the hypotheses are eventually accepted. Even though no strong evidence has been found, this does not mean that not all elements of the variables need to be present for a good collaborative process. All elements and variables have proven to be of a high value.

After having discussed the collaborative dynamics and the corresponding hypotheses, the seventh hypothesis can be reviewed. This hypothesis is tested using a smoking-gun test, meaning that collected evidence may validate an explanation strongly over another, but doesn't rule out other possibilities to be of importance as well.

	<b>Hypothesis</b>	<b>Case 1</b>	<b>Case 2</b>
7	The working together of the three components of collaborative dynamics will lead to a better integration of water safety and spatial quality in urban waterfront regenerations.	+	+

In both projects, efforts have been made to integrate water safety and spatial quality issues. The involvement of both governmental and non-governmental actors has resulted in changes in the design that increased the spatial quality on the one hand and has ensured water safety on the other hand.

Through the contributions of the participants, it can be assumed that the collaborative dynamics have ensured that there is a good integration of both goals. Therefore, the last hypothesis will be accepted. Because of the smoking-gun test, this provides a sufficient, but not a necessary criterion for the causal interference.

#### 6.1.4 *How is the productivity performance of the CGR assessed?*

The three components of the collaborative dynamics interact over time and propel collaborative actions. These actions could not have been attained by any of the organizations acting alone. This causality has led to the fifth hypothesis, which has been subjected to a hoop test. Evidence for this hypothesis was collected by asking the respondents if they think the leader of the project would have achieved the same result if there would be less or even no cooperation between the actors. The answers to this question varied amongst the respondents.

In both cases, the respondent of the leading organization indicated that they expected that the design would look different if there was no or less cooperation. Among the other respondents, opinions on this differ. Even though the design would be more or less the same, the adjustments appear to lie in the details. Besides, this process of collaboration would have led to a higher acceptance among the participants. Because of the open way of communication, participants develop an understanding of when a wish cannot be granted. Therefore, open communication ensures broad support for the design.

	Hypothesis	Case 1	Case 2
5	Actions resulting from collaborative dynamics cannot be realized by the participants alone	+	+

For what is stated above, the fifth hypothesis can be definitively accepted. The collected evidence, thus, showed that the working together of the collaborative dynamics is necessary to propel actions that could not have been realized by the participants alone. However, because this hypothesis was tested using a hoop-test, the evidence does not give a sufficient explanation for this causality.

Next to this hypothesis, the effectiveness of the CGR is also measured with the productivity performance. This productivity performance assesses the performance of the outputs or actions that are intended to produce outcomes that may lead to adaptation. For this study, the focus lied on the unit of target goals (in this case: the integration of water safety and spatial quality in the design of an urban waterfront regeneration), which can be evaluated on three levels.

First of all, the level of actions/outputs, which are the results on the ground. Equity, in this case, refers to the somewhat equitable distribution of benefits, costs and risks. This is measured by an objective measure of the distribution of costs and benefits and by the participants' perception about the equitable distribution of costs and benefits. In both projects, only the governmental actors have invested in the projects. These governmental actors all had their own budget for achieving their own goals within the project, and agreements about this have been made in advance. Therefore, it can be stated that the distribution of the costs of these participants is fair. The involved non-governmental actors did not have any financial contribution but did put time and effort in the process, about which no strict agreements have been made in advance. Although this is difficult to measure objectively, the respondents agreed that it is a fair distribution.



The second level which is assessed is the level of outcomes. Outcomes are alterations in an existing or projected condition that is viewed as undesirable or in need of change. The effectiveness of outcomes is indicated by the extent to which the CGR's actions produced their intended effect in accomplishing its target goal. For the governmental participants, it is easier to say whether they have met their goals because their ambitions are laid down in, for example, vision documents. Besides, because these governmental actors also have financial input, they also make sure that their ambitions are met. Observations showed that non-governmental participants did not always have set clear goals upfront.

The third level of performance is adaptation. To assess this level, the sustainability of adaptation is measured, which is the robustness & resilience of the outcomes, measured by the ability to continue the demonstrated effects over time. The outcome in this case can be seen as two-sided. On the one hand, the quays should continue to meet the water safety standards. Both quays will be tested periodically by the water authorities regarding water safety, as these organizations have the duty of care of the primary flood defences. On the other hand, the quays should continue to demonstrate the effects of the increased spatial quality of the quay. In both cases, no evaluation moments have been agreed in advance. However, the design of the quay in Nijmegen takes into account that changes can be made later.

#### *6.1.5 How can collaborative governance help integrate water safety and spatial quality in urban waterfront regenerations*

After having discussed the four sub-questions, an answer can be given to the main question. Collaborative governance is the involvement of governmental and (non-)governmental actors in a collective decision-making process. Because of the involvement of multiple actors, this type of governance can help integrate two issues: water safety and spatial quality. Although collaborative governance requires more work for the leaders of the project, because they have to deal with multiple actors, observations in this research showed that it was perceived as valuable by the participants to operate with this type of governance.

First of all, it ensures an efficient use of resources, such as time, knowledge and money. Besides, including multiple stakeholders can lead to a result that is better suitable to a specific place, as different types of knowledge of multiple actors are combined. Finally, it has led to designs with a greater level of support.

The collaborative dynamics can be seen as the most important dimension of collaborative governance. Because this dimension creates actions which can lead to outcomes, this dimension determines the quality of the process. Some elements within this dimension appeared to determine a large part of the collaboration. The elements that are most important in keeping the process running smoothly are the elements of definition, deliberation, trust and mutual understanding. If enough effort is made to ensure that these elements are perceived as positive, there is a good chance that the rest of the collaborative dynamics function well and create the best suitable outcomes.

## **6.2 Discussion**

This last section offers a critical reflection on the implications, limitations and recommendations of the research.

### *6.2.1 Implications*

Overall, this research has contributed to the knowledge of collaborative governance applied to the integration of water safety and spatial quality in urban waterfront regenerations. Before this study, no research has been done to the role of collaborative governance in the integration of water safety and urban development in urban waterfront regenerations. From the literature, the expectation was built that collaborative governance could contribute to the integration of water safety and spatial quality. The integration of these goals would ensure that resources, such as financial resources, are spent more efficiently. The results are in line with this expectation, as the observations of the two cases confirmed this role. In general, all respondents experienced the collaborative process as good. Besides, they emphasized that they felt the collaboration added value to the project.

With the insights and the recommendations of this research, collaborative governance can be used in future waterfront regeneration projects to create better public spaces, as urban waterfronts contribute to the quality of life. Something that has to be taken into account here, is that this research has been carried out in a Dutch context, where integrating water safety and urban development are common. Besides, the two chosen cases have a comparable system context.

### *6.2.2 Limitations*

No research comes without limitations. Therefore, they must be considered. In this section, first, four methodological limitations will be discussed, followed by a theoretical limitation of this research.

First of all, doing a case study can be seen as a limitation of this research because findings are often hard to generalize in a case study. To counteract this problem, two comparable cases have been studied. Due to the time available for this research, studying more cases was not feasible.

Another limitation is this research is that almost all collected data had to be translated from Dutch to English. The translation of the interviews and documents may have caused a loss of certain nuances in people's answers; the researcher has tried to prevent this to the best of her abilities.

Regarding the interviews and the respondents, two things can be noted. First, the situation around the COVID-19 pandemic posed some challenges for the data collection, as the initial idea of conducting face-to-face interviews had to be turned into interviews online or over the phone. This made the interviews somewhat more distant, but overall, it appeared to work out reasonably well.

Second, for the case study of Nijmegen, the researcher did not interview any respondents who could say anything from a water safety perspective. This was because the process started some time ago and the people involved were no longer available for an interview. In order to complete the water safety perspective, an attempt has been made to obtain a good impression of the process through the interviewed respondents and the collected documents. This may have caused certain issues to be left out of consideration.

A limitation regarding the theory is that causal mechanisms appeared to be hard to prove for the researcher. Because the integrative framework for collaborative governance is very extensive, the indicators of the elements have a lot of overlap. Therefore, it is hard to say which elements of collaborative governance really did reinforce or help sustain the other elements. A shortage of suitable data may also have contributed to this.

### 6.2.3 Recommendations

There are several ways in which it would be interesting to expand or detail the scope of this research. In this section, recommendations are made for both practice and future research.

#### **Recommendations for practice**

In the conclusion of this research is stated that some elements appear to be of higher importance in keeping the collaborative process running smoothly. These are the elements of definition, deliberation, trust and mutual understanding. If these elements are perceived as positive within the collaborative dynamics, the outcomes will be more convenient for the participants.

In order to let participants perceive the element of deliberation as positive, a recommendation concerns the communication between the different participants involved: in an ideal situation, there should be a good representation and inclusion of key voices in the collaboration process. The representation of stakeholders does not stop at the beginning of a process. This research showed that even during a collaborative process, participants can be added to increase the representation of the interests at stake.

The element of definition could be improved within a collaborative process by making clear agreements in advance. These agreements should concern the common goals and expectations of each other and the process. This could counteract the effects of little mutual trust at the start of the process.

Besides, this research showed that is valuable to have a direct line of communication between the participants. If important matters, such as water safety, have to be discussed or dealt with, it is good to have a representative at the table. This prevents a two-step communication and leads to a higher understanding of other positions. This increases the mutual understanding between participants. Besides, this could also ensure that people have a higher willingness to accept the outcomes. However, it has to be taken into account that this is not always possible because all participants have their own priorities regarding their limited time.

Finally, it is important to keep the participants in a collaborative process updated. The observations of this research showed that even if there is not much to report, it appears that the participants find it valuable to be informed. This could increase the mutual understanding among participant and it could also ensure that participants are not faced with surprises during the process.

#### **Recommendations for research**

Collaborative governance remains a complex concept because many factors play a role. Partly due to the limited amount of time available for this research, not all possibilities of collaborative governance have been explored. In this research, the focus mainly lied on the system context and the collaborative dynamics. Besides, the productivity performance of Emerson & Nabatchi (2015 *b*) was used only to assess the productivity of the three performance levels of the target goals. This matrix, however, consists of nine dimensions. In further research, the productivity performance on the other units of analysis could be further investigated.

Reflecting on the limitations, in future research it would be helpful to include all relevant stakeholders and their perspectives in order to get a more complete picture of all interests at stake. Besides, in this research, the collaborative dynamics are described using only one interview per organization. However, it would be interesting to expand the study to the collaborative dynamics and to also include

more respondents per organization. This is because often several people, with different aims and interests, are involved within one organization.

Another recommendation for research concerns the research method. In this research, qualitative data has been collected by conducting interviews. The respondents are chosen because they are well-informed on the topic and intensively involved in the project. These respondents often represent a larger group. It could be useful, in further research, to approach more participants in the collaborative process. This could be done by conducting a survey. In this way, more data would be collected, primarily from the residents, visitors and entrepreneurs of the quay. This would also increase the generalizability of the study.

As has been stated before, this research has been executed in a Dutch context, where it is common to integrate water safety and urban development. An expansion of this study would be to investigate the role of collaborative governance in integrating spatial quality and water safety in urban waterfront regenerations within a context where this is not common. For example in Germany or the United Kingdom, where also urban areas along a river can be found and where there is less experience in addressing these two issues at the same time.

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