Enhancing spatial quality through cross-sector collaboration

A case study of the Rijnkade Arnhem dike strengthening project

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Word count: 25843

August, 2023

Colofon

Radboud University

Spatial planning

Master Planning, Land and Real Estate Development

Houtlaan 4

6525 XZ, Nijmegen

Title

Enhancing spatial quality though cross-sector collaboration. A case study of the Rijnkade Arnhem dike strengthening project.

Date of issue

18-08-2023

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Preface

Dear reader,

The master thesis that lies in front of you addresses the improvement of spatial quality through collaborative governance in the Rijnkade Arnhem project. The thesis is part of the masters' program of Spatial planning and of the specialization of Planning, Land and Real Estate Development.

The thesis might be considered as the outcome of a rigorous time. This is mostly because there was a brief interruption in May, a vital month. The chance to take part in a joint course abroad with the Radboud University and two Indonesian universities presented itself during that month. Despite the memorable experience, I ended up staying in the library till August when everyone else was already on vacation. Even though it was a little more difficult than anticipated, the effort was worthwhile. After all, submitting the master's thesis symbolizes not just the start of my summer break but also the conclusion of my time as a student.

I'd like to express my appreciation to the respondents for taking the time to speak with me and for being ready to share their expertise. I received some incredibly insightful information from this that assisted my research.

Additionally, I want to thank my supervisor Emma Avoyan for always returning my emails promptly, giving me honest feedback, and helping me out during her vacation period.

Last but not least, I would want to express my appreciation to my mother and grandparents for their constant support during my studies and for the fact that they were always interested in what I was concerned with during my studies. This always motivated me to do my best.

I hope you will find my research interesting.

Noud van Aanholt

Nijmegen, August 2023

Abstract

The need for improvements became evident when it was determined that the Dutch safety regulations for water management were out-of-date. As a result, nationwide dike reinforcements became urgently necessary. The Dutch Flood Protection Program (DFPP) is the principal program in charge of fulfilling this responsibility. To ensure the success of the reinforcement mission, the numerous initiatives of the DFPP needs to be completed. Consequently, the main objective of those projects is to guarantee water safety in accordance with the current safety standards. During the completion of those projects, other objectives in addition to water safety must be taken into consideration. However, they are usually not classified as an "objective" but instead regarded to as a *meekoppelkans.* These are spatial or economic opportunities available to businesses or locals that don't directly advance the water safety objective of the dike reinforcement. They are opportunities that can be pursued parallel with the dike reinforcement project, causing a win-win scenario. For instance, in this way, spatial quality has been incorporated into the project (Waterschap Rivierenland, 2023)

Cooperation between multiple sectors is always openly sought within HWBP initiatives with the intention that the participating agencies along with other stakeholders can collaboratively identify *meekoppelkansen.* These opportunities must first be recognized before they can be implemented into a project to yield larger advantages for water management and other sectors. There is, however, a lack of information in the scientific literature that assists in understanding how cross-sector collaboration enables the improvement of a *meekoppelkans* such as spatial quality in dike reinforcements projects. Therefore, the purpose of this study is to examine how cross-sector collaboration enabled the improvement of spatial quality of the area in the dike strengthening project of Rijnkade Arnhem.

By conducting interviews with several stakeholders qualitative data was gathered, which was subsequently analysed using the thematic analysis approach. The insight that emphatically emerged after analysing the data is that there is still room for improvement in the matter of accessibility. After all, developers ought to create for everyone. Aside from providing beneficial insights, the data also enabled the conclusion that the Rijnkade Arnhem dike strengthening project was able to successfully improve the spatial quality as a result of collaborative governance. This subsequently resulted in a well-balanced and appealing dike strengthening design that conformed with the values and standards of the surrounding community and the environment.

Keywords: collaborative governance, DFPP, spatial quality, Rijnkade Arnhem, stakeholders

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1. Introduction

1.1 Problem statement

The Netherlands and flooding are topics that are regularly mentioned simultaneously. This is not at all remarkable. For instance, the Sint-Elisabeth flood of 1421 caused extensive havoc by demolishing the dikes in Holland, Zeeland, and Flanders (Eslamian, 2022). A few centuries later the Christmas flood occurred in 1717 as a consequence of human sin (Sundberg, 2015). During that period this way of thinking was not absurd, this was simply the prevailing belief at that time. The flood calamity of 1953 is another example of a flood, yet it differs from the previous mentioned floods since it is still vividly remembered by each of our most recent ancestors. This is hardly surprising considering that measurement at the time revealed the highest water level since the nineteenth century, which ultimately caused multiple floods with a disastrous aftermath (Slager, 2003). In summary, there has always been a struggle between the Dutch and the water throughout history.

Since the infamous flood disaster of 1953, the so-called Delta Project has been in operation. The Delta Works that were established as a consequence are considered to be the largest Dutch defence systems against open seas tides. Over the years, a series of Delta Programmes have been established, and the most recent one, from 2017, determined that a new water law was considered necessary. This water law had to ensure that new safety standards would be implemented (Deltaprogramma, 2017) After all, the current standards can be considered as obsolete since they originate from the 1960s. The outdated nature of the standards can be attributed to the fact that the 1960s was a period wherein the requirements for coastal flood protection were based on the statistical probability of severe storm surges. Therefore it might be agreed upon that these rules were outdated (Kabat, 2009).

Furthermore, as the standards stretch back to the 1960s it is not surprising that a substantial proportion of new data and expertise in the discipline of water management has emerged over time, not to mention the expansion in population and assets that need to be safeguarded since that period (Most et al., 2014). Armed with this knowledge, the new safety standards were developed with care. To ensure adherence to these new safety standards, several programmes were launched. The so-called High Water Protection Program is an example of one of those programmes. This is the overarching program that directs and monitors the implementation of new strategies throughout various dike projects across the nation. The main objective of this program is to guarantee that 1,500 km of dikes, 500 locks, and pumping stations are completed by 2050 (DFPP, 2023).

The DFPP program encompasses an array of goals and agreements, some of which might be correlated to innovation such as making the Dutch dike less expensive, more effectively, and better suited to its surroundings. These are often easily translated into the plan approach. However, the difficulty lies with implementing the DFPP's goals and agreements regarding to the Raw Materials Pact and Climate Agreement. In an attempt to assist the conservation of sustainability and spatial quality, the alliance has chosen this option. This will be accomplished via a programmatic approach. The main objective of this approach is to efficiently ensure that the DFPP's operational processes and procedures secure sustainability and spatial quality (DFPP, 2023). In particular, this strategy ought to support the shift to circular, sustainable, and high-quality spatial reinforcements. The aim is to structurally secure sustainability and spatial quality in all DFPP projects from 2023 onwards (Deltaprogramma, 2023).

It is fair to assume that there is substantial consensus on what is meant by the concept of "sustainability." However, the perspectives on the definition of spatial quality are divided. Generally speaking, the concept denotes the interaction of four factors: (1) views, (2) internal spatiality and spatial arrangements, (3) transition between public and private spaces, and (4) perceived, built, and human densities (Acre and Wyckmans, 2014). Nevertheless, as a result of widespread recognition, the term is defined in various ways across several fields of study. Also, each of these areas' definitions of spatial quality have changed throughout time (Khan et al., 2013). According to what was previously stated about the concept in this specific context is that it should be considered as one of the most crucial elements in dike reinforcement projects. Additionally, designers need to find a compromise between the technical aspects of the dike and the environment's quality (Nillesen & Kok, 2015).

As for the programmatic approach, it was already made public by the DFPP in 2020 in order to promote the assurance of sustainability and spatial quality. The title of the approach suggests the importance of spatial quality in the context of the DFPP projects. It also highlights the wish of the alliance to become more organized in the field of spatial quality (programmatic approach, 2020). However, to make this succeed a proper cooperation between a wide range of parties operating at a wide range of levels is necessitated. This process can in its entirety be labelled as collaborative decision making (Agger et al., 2015. However, the implementation of collaborative governance can be complex since it requires interactions between large numbers of interdependent actors (Klijn & Koppenjan, 2000). It can also be complex due to the arbitrary nature of how the collaborative partnership is established. Indeed, there may be biases in the other collaborators' way of working. This trust-building process is critical for the formation of strong collaborations (Bryson et al., 2006). Additionally, participating in collaboration produces complex tensions with existing channels and introduces new channels of accountability (Emerson et al., 2011). Hence, it is a complex phenomenon, but nevertheless necessary in this particular context considering many actors are concerned with the safeguarding of the spatial quality. Understanding how cross-sector collaboration enabled the improvement of spatial quality in this particular setting is therefore interesting and well worth exploring.

1.2 Research aim and the research question

This research seeks to understand how cross-sector collaboration enabled the improvement of spatial quality of the area in the dike reinforcement project of Rijnkade Arnhem. This project was deliberately chosen since it involves more than just maintaining water safety in the area. Aside from the long-desired connection that may be built between the Rijnkade and the city centre of Arnhem, the project will also offer the area a quality boost. Furthermore, this project will be done under the direction of an unusual collaboration between the Waterboard Rijn Ijssel and the Municipality of Arnhem, both of which guarantee very different interests. Although this particular collaboration may not appear to be especially noteworthy at first glance, it held special significance since it entailed a project aimed at strengthening a dike in the middle of the city of Arnhem. Due to this, the two bodies' cooperation is more intense and unique than when it comes to a dike reinforcement project in the outlying area. As for the spatial quality, the enhancement of it is not the main purpose of this project since the water safety is paramount, the only condition is that it has to be restored to its current state (Laar, 2021) . Additionally, the spatial quality will be included into the project in a different way, specifically as a *meekoppelkans* (Laar, 2021). This is an opportunity that can be implemented

simultaneously with the dike strengthening project and can offer an outcome that benefits multiple parties. The focus of the research will be on the "exploration phase" and the "plan execution phase" of the project, which ran from 2016 till 2018 and 2018 till 2020. These phases have been deliberately chosen. This is due to the fact that during these phases plenty of collaboration occurred in the shape of group meetings, one-on-one meetings, *Rijnkade cafés* and various other gatherings. *Rijnkade cafés* are meetings held in, as the name implies, cafés. In this way, a homely and confidential atmosphere can be created for the attendees. During this decision-making process, the top concerns of the stakeholders are highlighted and the project's outline is formed. Furthermore, it would likewise be intriguing to involve the collaborative motives during the project's realisation phase. This would have painted a complete picture since it would involve al project phases. However, the realisation phase did just recently begin. As a result, limited information about the collaboration process in that specific phase is currently available. Additionally, most decisions are generally made in the initial stages of the project anyway. This made the decision on the exploration and plan execution phase as the focal points a well-considered and logical decision.

Indeed, multiple stakeholders were already working closely together during those two phases, including, among others, business owners, locals, Rijn and Ijssel Water Board personnel and the municipality of Arnhem (Laar, 2021) Subsequently, the various stakeholders were requested to identify problems and offer suggestions from the very beginning of the exploration phase. This was accomplished in the greater context of identifying the main issues. Once it was uncovered that there was a mutual concern a number of alternatives was presented to the various stakeholders during a subsequent meeting. However, in the ending the stakeholders were not able to make a decision between the two alternatives that were left. As a result the preferred alternative was drawn up based on a combination of these, known as a 'Groene en Levendige Rijnkade'. Consequently, at February 19th 2019, the preferred alternative was signed jointly by Rijkswaterstaat Oost-Nederland, Rijn and Ijssel Water Board personnel, province of Gelderland, municipality of Arnhem and representatives of residents and entrepreneurs on the Rijnkade (Laar, 2021). The extent of each party's involvement in this project phase already allowed for early diagnosis of the interests, which focused primarily on creating a green and lively waterfront. Therefore the aim of this research is to evaluate whether collaborative governance enables the improvement of spatial quality of the area in the dike strengthening project of Rijnkade Arnhem. The research question will be analysed through the following sub-questions:

- *Which collaborative dynamics and elements supported the improvement of the spatial quality in the Rijnkade Arnhem project?*
- *What were the key challenges or barriers regarding the collaboration that arose during the exploration and plan execution phase of the dike strengthening project and how were they addressed?*
- *How was the spatial quality framed during the Rijnkade Arnhem project?*
- *To what extent was the spatial quality improved during the Rijnkade Arnhem project?*

1.3 Scientific relevance

The comprehensiveness of the concept of spatial quality can be illustrated given that it has already provoked a considerable amount of discussion across numerous disciplines. Continuity of these discussions across a wide range of fields implies that an interdisciplinary approach is frequently used when addressing the issue of spatial quality (Moulaert et al.,

2011). Additionally, that various discussions across multiple disciplines were held, highlights the considerable interest from the academic literature that the concept has obtained.

The topic of collaborative governance is one that has received sufficient attention from academics. The majority of academics seem to concur that cross-sector cooperation will result in advantageous outcomes. It is believed that since collaborative governance draws on a variety of sources for information and experience, it can result in better outcomes for public policy. Thus, a more democratic decision-making process is established (Ansell & Gash, 2008). Moreover, collaborative governance is very important for complex social issues that include numerous sectors and levels of government (Bryson et al., 2015). Therefore, it would be advantageous for the area to accomplish collaboration between many different parties in the context of dike reinforcement projects (Nieuwenhuis, 2019).

In academia, progress has been made in recognizing the importance of cross-sector collaboration for dike reinforcement projects. For instance, Avoyan & Meijerink (2020) explored how external factors shape past and present dynamics of collaboration. However, little attention has been given to how dike reinforcement projects ensure the spatial quality improvement through cross-sector collaboration. This is in contrast to its significant role in practice, where it's discussed in project early stages and reflected in practical implementation (Laar, 2021). Stakeholders value spatial quality in these projects, often aligning through shared goals, as seen in the Rijnkade Arnhem project achieving a vibrant waterfront. This highlights the close link between collaboration and spatial quality. Despite this practical connection, there is a void in the scholarly literature, thus this study fills that gap by examining the relationship between spatial quality and cross-sector collaboration in dike strengthening projects.

1.4 Societal relevance

The floods that plagued our country in July 2021 served as a stark reminder that the flood defences that are currently in position are insufficient to safeguard against future disasters. In addition, since the Netherlands' economic hub is situated below NAP, flooding is an unavoidable risk (Moel et a., 2011). To avoid major social and economic catastrophes, it is imperative to protect the nation from flooding in the future. Therefore, it is crucial to modernize our outdated flood defences in order to avert future catastrophes.

For this objective to be successful, the 2017 Delta Programme resulted in the enactment of the Water Act, which imposed new safety requirements for flood defences (Deltaprogramma, 2017). It is hardly surprising that those standards needed to be renewed. After all, the guidelines were originally issued in the 1960s. The DFPP was subsequently developed as a result of the mission, with the intent to reinforce the dikes among other flood defences. Especially in this particular context the safeguarding of the spatial quality is crucial. This is due the fact that sustainability, the viability of the region and the vicinity of the dike and general safety are examples of crucial aspects that are influenced by the spatial quality and thus can’t be overlooked (Fielt, 2022). Due to this cruciality the concept cannot be ignored in this particular context. Furthermore, the concept’s importance ensures that various parties have a stake in it, which leads in turn to involvement by those same parties. Therefore the societal relevance of this study may be viewed as the better understanding of how joint collaborative efforts may ensure both improved spatial quality and flood safety for the residents of the flood prone areas in the Netherlands. Additionally, since the 2017 Delta Programme’s mention of core tasks including climate resilience and water safety, it can be

stated that this study contributes not only to future DFPP projects, but also to the Delta Programme (Delta Programma, 2017).

2. Theoretical framework

2.1 Collaborative governance

Bevir (2007) explains collaborative governance as a mechanism for a government to conduct policy that involves involving its constituents, civil society organizations, enterprises, and other stakeholders in the early phases of the policy-making process. By involving all those different stakeholders collaborative governance fosters a flexible decision-making process that is more open to other viewpoints and stakeholder interaction. Because of this it can be considered as a strategy to generate more palatable, rich, and resilient outcomes (Bevir, 2007). According to Bevir's perspective, cooperation among the aforementioned organizations at all those different levels is fundamental in the pursuit of the ideal situation. Given the desire for such cooperation, it is clear how complicated the issue is and how interdependent everything seems to be (Bevir, 2007). Logsdon (1991) adds to this perspective that interdependence should in practice be a prerequisite for collaborative governance. Bryson approaches this from a different angle, arguing against the idea to label interdependence as a prerequisite for collaborative governance. Interdependence is solely the by-product of how complicated modern society is. Such intricacy can simply be overcome by collaboration (Bryson et al., 2006). Yet, interdependence can also lead to less favourable circumstances since high levels of dependency among the parties involved are likely to increase commitment to collaboration, but they may also increase incentives to act coercively and manipulatively. Where collaboration depends on continual cooperation rather than being a one-time event, these temptations are probably checked (Ansell & Gash., 2008).

It can be argued that there are numerous definitions of collaborative governance that can be discovered in academia. Nonetheless, it may be opined that two of those definitions have the greatest recognition. Firstly, the definition that is developed by Ansel and Gash:

"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 " (Ansell & Gash, 2007, P.544).

The emphasises of this definition lies on the conventional focus on the public manager or the formal public sector (Ansell & Gash, 2008). Emerson et al., push the envelope resulting in a broader definition of the concept. Their definitions goes as follows:

"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., 2011, P. 2).

This definition enables collaborative governance to be used as a wider analytic construct and allows distinctions among different classes and scales. Additionally, this definition also doesn't limit itself to only formal state-initiated arrangements (Emerson et al., 2011). Nevertheless, the definition of Ansell and Gash is preferred during this study since (1) the focus is on public policy or public management, (2) public agencies as well as non-public stakeholders are involved and (3) there is a collective-decision making process. All of these factors are pertinent to the dike strengthening project of Rijnkade Arnhem.

Regardless preferring the definition that was developed by Ansell and Gash, It was decided not to utilize their integrative framework for collaborative governance during this study. Their framework consists of four broad variables known as (1) starting conditions, (2) institutional design, (3) leadership and (4) collaborative process. Each of these broad variables can be categorized into more specific variables. It needs to be highlighted that the collaborative process variables are considered to be the heart of the model. Therefore, the latter three broad variables might be viewed as either essential contributions to or context for the collaborative process. That this integrative framework, as depicted in figure 1, will not be utilized during this research is caused by a few factors. That the framework is insufficient can be attributed to that the integrative framework conflates the system context and conditions with the specific drivers of collaboration. Further dissecting the framework also reveals that

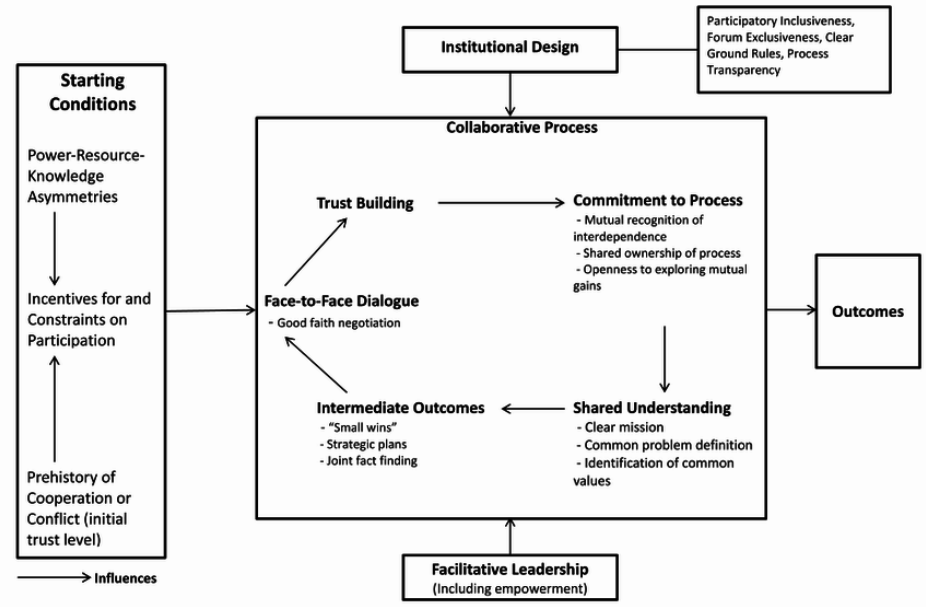

Figure 1. The integrative framework of Ansell & Gash 2008.

the framework introduced by Ansell and Gash excludes key variables such as legitimacy and mutual understanding. Instead they employ shared understanding whereby participants agree on a shared set of goals or values (Ansell & Gash, 2008). However, mutual understanding specifically applies to the capacity to recognize and comprehend the interests and positions of others, notwithstanding possible disagreement (Emerson, 2011). Due to this the model is also less beneficial for this study. Additionally, the visual representation of the framework introduced by Ansell and Gash is not perceived as being simplistic. This is in contradiction with the reality that the framework is less comprehensive than the framework created by Emerson et al., (Bryson et al., 2015, p. 648). Therefore the decision was made to use the Framework created by Emerson et al., In the next paragraphs each aspect of that framework is broken down so that it becomes evident why it is more suitable in the particular context of this study.

2.1.1 The integrative framework for collaborative governance

Over time, a variety of models for collaborative governance have been developed and formalized in order to perfectly match the requirements of the participants, community, and issue (Chaplyn et al., 2020). Emerson et al. (2011) developed the most recent model regarding collaborative governance, the so called integrative framework for collaborative governance. Compared to earlier created alternatives, the model is far more thorough, (e.g., Bingham & O'Leary 2008; Bryson et al., 2006; Cooper et al., 2006) this is due to the fact that this definition of collaborative governance actually encompasses a larger variety of new kinds of collaborative governance outside of the traditional focus on the public manager or the official public sector. The inclusion of multi-partner governance and intergovernmental collaboration frameworks is one of its key distinctions from earlier proposed definitions (Emerson et al., 2011). The model is shown in figure 2. The overall system context is shown in figure 2, which also depicts the *collaborative governance regime* (CGR) and any related dynamics and actions. Within the collaborative dynamics a set of drivers helps to initiate and set the direction for a CGR. The three dynamics of collaboration are located in the smallest box of CGR's overall system. The way these three interact affects whether or not a collaboration will be beneficial. The three collaborative dynamics interact to provide particular actions required to carry out the pertinent objective of the model. This finally decides how the collaboration will be impacted (Emerson et al., 2011).

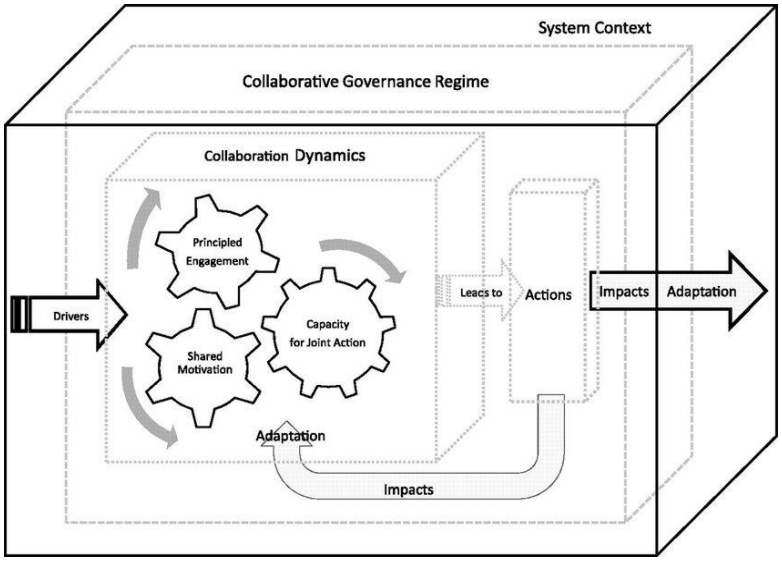

Figure 2. The integrative framework of Emerson et al., 2011

The purpose of the external system context is to establish limitations and opportunities as well as to have an impact on the conditions in which a CGR occurs. In addition to influencing the overall CGR, the system context is also impacted by the regime itself as a result of its collaborative actions. The system context isn't depicted in this framework as a collection of initial conditions but rather as a surrounding three-dimensional space since external factors might affect the effectiveness and dynamics of collaboration at any point in time (Emerson et al., 2011). Examples of external factors that can impact the effectiveness of the integrative framework are the political climate, social and cultural factors, economic conditions, environmental factors and legal and regulatory frameworks (Emerson et al., 2011).

In the larger context of this study economic conditions and legal and regulatory frameworks are particularly significant in terms of their influence on collaborative governance. The first factor that can have an impact on the success of collaborative initiatives is the economy, including changes in funding, resources, and incentives (Emerson, et al., 2011). For instance, funding is crucial for dike reinforcement projects because having insufficient financial resources can lead to difficulties amongst stakeholders, especially about their willingness to work together. The legal system is the second element that has a considerable impact on collaborative governance. It contains contractual agreements, which are legal documents that can specify the obligations and parts of the parties involved in dike reinforcement projects. Consider the distribution of risks and rewards as well as the work's scope. An established legal framework gives guidance on how these agreements should be upheld, which may influence parties' willingness to work together.

Drivers

In contrast with other frameworks (e.g. Ansell and Gash 2008; Bentrup 2001), the framework of (Emerson et al., 2011) makes a separation between the contextual variables and the essential drivers These drivers include leadership, consequential incentives, interdependence, and uncertainty. The first driver of leadership refers to the existence of a designated leader who is also in a position to launch and aid in securing resources and support for a CGR. The second driver, better known as consequential incentives, refer to either internal or external drivers for collaborative action. Complementary to this, positive or negative incentives must exist in order to motivate participants and leaders to collaborate. Next, the driver of interdependence simply refers to when organisations and individuals aren't able to achieve anything on their own (Emerson et al., 2011). Interdependence is in the scientific literature multiple times recognized as an precondition for collaborative action (e.g. Logsdon 1991). The final driver uncertainty refers to a situation that can't be resolved internally. This can drive groups to collaborate so that the risk can be shared (Emerson et al., 2011).

The development of cooperation between different stakeholders in the framework of this study has been prompted by the accumulation of a number of uncertainties. The guidelines regarding water management stretch back to the 1960, this was a period with limited data and expertise in the discipline of water in comparison with today. This led to uncertainties regarding the rules' continued sufficiency and, consequently, the safety of the Delta Works. This would eventually result in the comprehensive DFPP project, under which the numerous stakeholders collaborate at many different levels to prevent floods. Although only one driver is being used as an example, all drivers theoretically have the potential to foster collaborative governance. This demonstrates the difficulty of the task of fortifying the dikes and the requirement for a variety of specializations to address the issue (DFPP, 2023).

Collaboration dynamics

The dynamics of collaboration will ensure that a CGR is established after the directors have initiated the cooperation. According to (Emerson, et al., 2011) the three stages in collaborative governance are cyclical rather than linear. additionally, in the framework the focus lies on three interacting components: principled engagement, shared motivation, and capacity for joint action (Emerson, et al., 2011).

The element of principled engagement comes first. This happens gradually, and several stakeholders may be involved at various points. People with different perspectives can

collaborate across borders to solve issues or add value through this component. Prior to defining the components of the principal engagement, it is necessary to examine the stakeholders since it is crucial for the partnership to understand who the stakeholders are and what they stand for (Emerson, et al., 2011). Furthermore, there is a universal consensus that it is essential to invite the "proper" individuals to the table (Ansell & Gash 2008). In other words, subsequent agreements or collective courses of action can be enabled or disabled depending on the participants' relative and combined power. Due to the four fundamental process components of discovery, definition, deliberation, and determination, principle engagement can occur gradually. The first part of the discovery process involves identifying shared and unique interests, concerns, and values. The defining process describes ongoing initiatives to create shared meaning by expressing a purpose and goals. Deliberation is the second component, which is a crucial factor in effective engagement. It necessitates deliberatively analysing the difficulties and absorbing other people's viewpoints. The third principle, known as determinations, includes substantive determinations. The determinations are often considered as one of the end products of cooperation. Finally, by expressing a shared goal and set of objectives, the element of definition exemplifies ongoing attempts to create shared meaning (Emerson, et al., 2011).

The second component known as shared motivation is a self-perpetuating cycle that emphasizes the relational and interpersonal aspects of the collaborative dynamics. The four components of shared motivation are mutual trust, understanding, internal legitimacy, and commitment. The development of *trust* is the first component, which happens over time as different stakeholders work together and get to know each other, and prove that they are reasonable and dependable. The second component, *mutual understanding*, is built on this. The central idea of this aspect is not a shared understanding, as (Ansell & Gash, 2011) include in their definition. It entails more than that; it involves having the capacity to respect and comprehend the interests and positions of others, even when one may not share their views. In turn, mutual understanding generates *legitimacy.* This third component, which verifies the dependability and credibility of collaborators, is what gives cooperation a continuing legitimacy. This eventually leads to the creation of shared *commitment* which is the final component. The participants can now cross the organizational and jurisdictional borders that had previously kept them apart because they are traveling along the same path.

The ability to take joint action, the third and final component, can be characterized as a set of cross-functional elements that come together to provide the potential for taking effective action and function as the link between strategy and performance. The capacity for joint action is conceptualized in the integrative framework of (Emerson, et al., 2011) as the union of the four essential element: institutional and procedural arrangements, leadership, knowledge, and resources. In order to achieve the predetermined goals, these elements must develop to a specific point. *Institutional and procedural* arrangements cover the variety of organizational and procedural frames required to control recurring encounters throughout time. Larger, more intricate, and long-lasting collaborative networks require more explicit structures and rules for the management and administration of work. Leadership, the second element, is a core part of collaborative governance. Furthermore, diverse leadership roles are vital for collaborative governance. Roles such as sponsor, organizer, facilitator, and technologist, to name a few. Some leadership positions are crucial from the start, while others are more important in periods of turmoil. (Bryson et al., 2006). Knowledge is the third component of the capacity for joint action. This component might be considered the collaboration's currency in many ways. Separation, aggregation, and reassembly of information, as well as the creation of fresh, shared knowledge, are indispensable for collaboration. Knowledge is defined as the social capital of shared knowledge that has been

digested, weighed, and integrated with the values and perceptions of all participants in the integrative framework of (Emerson et al., 2011). The final and fourth element *resources* is beneficial for collaboration since its potential for leveraging and sharing scarce resources. Think of time, funding and power for example. The collaborative dynamics make it possible to redistribute these resources equally so that the common goals of the CGR can be achieved. (Emerson et al., 2011)

Collaborative actions and impacts

Over time, the components of collaborative dynamics interact and encourage cooperation. Actions taken in collaboration are ones that none of the groups acting independently could have accomplished (Emerson et al., 2011). These actions are more likely to be carried out if there is an explicit identification of a shared theory of action among the participants and if the collaborative dynamics provide the necessary capacity for joint action (Emerson et al., 2011).

Impacts are alterations in the system context caused by collaborative actions (Emerson et al., 2011). Additionally, effects could be the value-added of a recent social good or technological advancement produced through collaboration (Emerson et al., 2011). When the implications of collaborative action are stated and derived from a shared theory of action during collaborative dynamics, they are more likely to be closer to the targeted results with less unintended negative consequences (Emerson et al., 2011).

2.2 Spatial quality

The concept of spatial quality is complex to define due to the widespread definition of ‘space’ and ‘quality’, (Acre & Wyckmans, 2014).). This poor defining makes it hard to quantify the concept satisfactorily (Klijn et al., 2013). Furthermore, as for the definition of the term as a whole, it has evolved over the years and has been defined in a variety of ways across a variety of academic disciplines (Khan et al., 2013). In truth, the term is only occasionally formally defined in the scientific literature on spatial quality due to its complex character (Miciukiewicz et al., 2010). Due to this, publications frequently place a greater emphasis on topics that fall within the more general category of spatial quality (Acre & Wyckmans, 2015). These concepts include ideas about “good design” (Sternberg 2000) and “good planning process “(Conroy & Berke, 2004) for example. Additionally, in order to find the right ideas about a 'good design', reference has even been made to Vitruvius who underlines the importance of the elements of functionality, attractiveness and solidity (Klijn et al., 2013). Despite this fact, almost all approaches regarding spatial quality asses both social and physical qualities (Acre & Wyckmans, 2015). The widespread notion makes it an complex concept. But in order to fully understand our complicated reality, more than one theory is required, as stressed by (Rapoport, 1970). Despite this notion there are still publications who dare to adapt a single definition of the concept. According to (Indraprastha & Shinozaki, 2012) the concept of "spatial quality" pertained to the proposition that, for an enclosed or inner space, the hierarchy of the space can be mapped by the degree of impact that its boundary elements exert. In an older publication of (Lynch, 1960) spatial quality is launched as the totality of the psychical and sensory aspects of a place that give it a distinctive character and identity. In the work of (Whyte, 1980) it is referred to spatial quality as the degree of which a space is comfortable, attractive and accommodating to its users. In contrast, the research of (Gehl, 2013) exhibits other aspects of the concept since it is defined as the ability of a space to promote social interaction and a sense of belonging among its users.

In summary, it seems the concept has evolved over time and has also been widely applied across many scientific areas. This can make it a complex phenomenon. Hence, this possibility doesn't necessarily have to make it complicated. This is due to that in the context of this study, besides the crucial issue of guaranteeing the water safety, aspirations for spatial quality are highlighted. This was done by introducing the preferred alternative titled 'Green and Lively waterfront' (Laar, 2021). The Rijnkade will therefore be transformed into an attractive area with more greenery and space for activity, this is how the spatial quality will be assured.

2.3 Collaborative governance and spatial quality

The fact that the concept of spatial quality can be widely interpreted doesn't create the prerequisite that one can easily find a linkage to collaborative governance. On the contrary, it seems that the broad interpretation of the concept makes it an herculean feat to find scholarly literature that highlights the interrelationship with collaborative governance. Even trying to find a connection with the aspects that can be categorized under the general rubric of spatial quality seems daunting. Thus, the decision was made to take a step back so that from a different perspective the larger phenomenon of flood risk management could be viewed of which dike reinforcements are a major component. Fortunately, doing so would reveal that the relationship between flood risk management and collaborative governance has been highlighted in academia from different angles before. The study of Emma Avoyan applies a process-tracing methodology to test the hypothesized causal mechanism of the collaboration dynamics for example. This leads to integrative output in a case of collaborative flood risk management in the Netherlands, the case of Grebbedijk (Avoyan, 2021). Another study focusses on the fact that in the context of collaborative governance regarding water management the emphasises still lies on the long standing tradition of protection and prevention. Nowadays the emphasis should lie on ideas of adaptivity and resilience (Molenveld & Buuren, 2019). A final example is the study of Avoyan and Meijerink that synthesizes the existing literature on Dutch flood risk governance to examine how past and contemporary cross-sector collaboration dynamics for integrated flood risk management in the Netherlands were influenced by external factors (Avoyan & Meijerink, 2021). This synopsis of scholarly literature demonstrates that the relationship between the concepts of flood risk management and collaborative governance has been highlighted from different angles before. However, the relationship between the concept of spatial quality, that is a major part of dike reinforcement projects and thus from flood risk management, with collaborative governance has hardly garnered any attention.

2.4 Conceptual framework

In this section the theories and concepts that will be used in this research are visualised into a conceptual framework as depicted in figure 3. The core of the models displays the same collaborative dynamics as introduced by Emerson, Nabatchi and Balogh (2011). These are principled engagement, shared motivation and capacity for joint action. Numerous academics present this entire set of collaborative processes as an ongoing, linear sequence. (e.g., Daniels & Walker, 2001). This is in contrast with Emerson et al., since they view the phases of collaborative dynamics as recurrent or cyclical interactions. Inside the CGR, which is itself a part of the system context, the collaborative dynamics take place. The institutional environment of the DFPP is represented by the system context in this model. The structure

and atmosphere in which a specific organization or institution operates are referred to as the institutional environment. The institutional environment of the DFPP both initiate and control the dike strengthening initiatives. Besides impact, it also influences the progressing of the collaboration. The CGR, or collaborative governance regime, exists within the DFPP's institutional environment. This is the public decision-making system in which cross-sector collaboration is the dominant pattern and should eventually result in actions. Since "decision on preferred alternative" can be referred to as the action in this study, it is chosen to represent it as such in the conceptual model. This, in turn, can result in the desired outcome of a "improved spatial quality," which is therefore also expressed in a comparable way. Furthermore, the examination of interview data unveiled instances of cooperation influencing decisions about project plans during the execution phase, highlighting the phase's importance within the study. However, the bulk of collaborative activities occurred during the plan exploration phase, resulting in the selection of the preferred alternative. As a result, the conceptual framework emphasizes the plan exploration phase as the intended outcome, while the plan execution phase, due to its relatively minor role, is not explicitly incorporated into the framework.

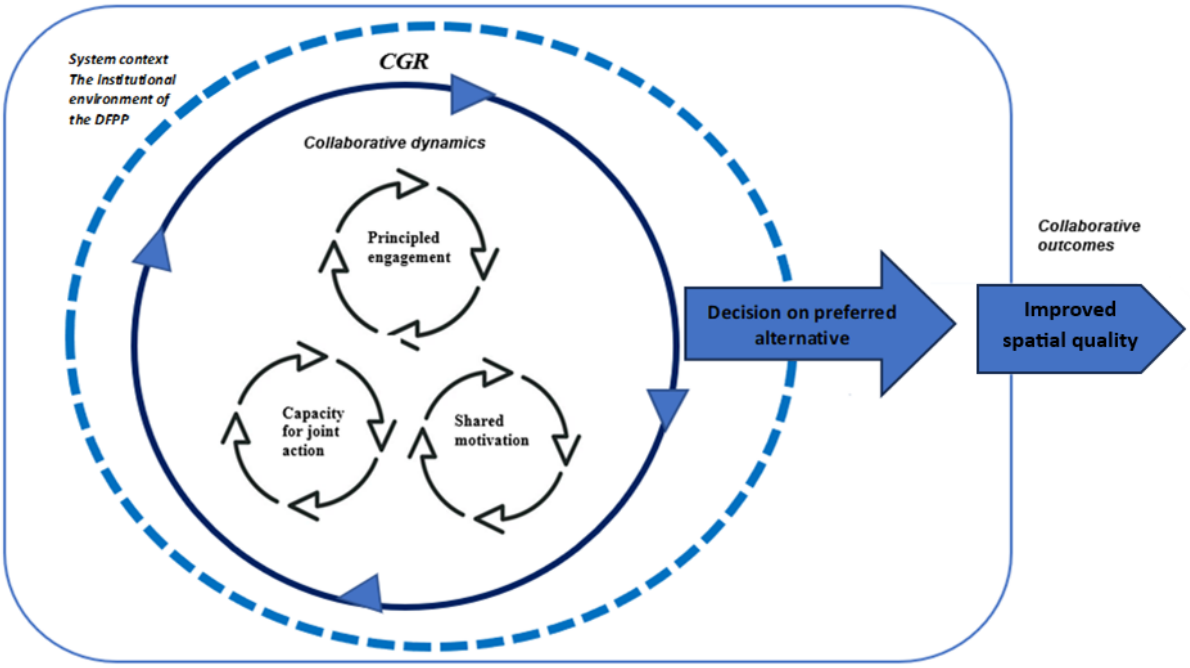

Figure 3. Conceptual framework

2.4.1 Operationalization

In this section, the collaborative dynamics and the collaborative outcomes will be broken down using the two tables below. The tables display the various variables' elements along with the associated indications. The indicators define what the variables' elements and therefore variables signify and how they're going to be measured in this study. The research's data will be analysed using these indicators. Additionally, the two tables aid in answering the four sub-questions. The table on collaborative dynamics will assists in answering sub-

question one and two, the table on collaborative outcomes will assists in answering sub-question three and four. It is chosen not to dissect the dimension of the system context, briefly mentioning that the system context will be referred to as the *institutional environment of the DFPP* will suffice for this study.

In this section the elements of the spatial quality will be clarified first. Subsequently, the indicators that pertain to the elements of the collaborative dynamics will be briefly explained. In order to explain the elements of spatial quality the ambition document of the municipality of Arnhem has been utilized. This is due to the fact that this document has outlined particular criteria that when combined should result in improved spatial quality (Haverkort, 2021). Therefore, the elements that can be found in the ambition document allow for the measurement of spatial quality. Since the project's spatial quality improves when the elements are integrated physically into the project, it is possible to quantify spatial quality through those elements. The meaning behind each element and how it emerged throughout the Rijnkade Arnhem are briefly explained below (Gemeente Arnhem, 2018).

1. Ensure quality of stay on *high quay* and transform into residential area: The Rijnkade's vibrancy depends on the terraces and activities held on the high and low quay Specifically, more room for terraces. The redevelopment of the southern city center has already enhanced the standard of living. The task for a new waterfront should preserve or raise the standard of living in the area.
2. Preservation of monumental value and high-quality and attractive public space: The new development should have the same high-quality appearance as the current situation. The Lime trees, terraces, paving (baked clinkers) and sluice gates contribute to this monumental character. The restoration of the Rijnkade wall should include these aspects. Additionally, the Rijnkade's placement ought to take trees into consideration as much as possible. The existing quality has previously been assessed, and replanting will be suggested if life expectancy is too short. At Roermond Square, there is also an opportunity to accommodate "high water" and make a functional connection between the canal and the low quay. Additionally, the style should be attractive but sober.
3. Maintain the meaning of the Rijnkade as robust and continuous city frontage: The existing quay wall is typical of the city's appearance. Maintaining its tough and robust appearance is a prerequisite, so it should be designed to the same high-quality. Only interrupt if necessary (e.g. access and exit ramps).
4. Ambition materialisation quay wall: The material should be fair, sustainable and of high-quality and should 'age nicely'. It should also fit the large scale of the quay and thus be sturdy and robust. Basalt is preferred; only if it can be shown that this is not possible should an alternative be chosen.
5. Ambition detailing quay wall: Position a new quay wall where extreme kinks, bulges and curved lines are no longer present. The slope angle of the quay wall also determines the experience. An angled wall is perceived as unpleasant. If possible, space should also be created for nature development between the joints.
6. The Rijnkade, stairs and ramps as link between river and city centre: Ramps and stairs form logical connections between the high and low quay. It should be investigated which connections are necessary for a good and slow traffic connection for cars and buses. More space can also be offered to the river at the Roermond square. This offers the possibility of creating a green embankment which can serve as the meeting place between the river and the city.

The indicators that pertain to the elements of the collaborative dynamics are briefly explained below.

Principled engagement

Discovery
Shared interests: Subjects, activities or themes that are mutually enjoyed by and relevant to multiple individuals.
Concerns: Difficulties, concerns, or worries that make someone feel uneasy or troubled
Values: the fundamental values, tenets, and ideas that direct a person's actions, decisions, and conclusions.
Identification and analysis of relevant and significant information and its implications: Recognizing and interpreting the crucial information, as well as its possible repercussions or impacts.

Definition:
Common purpose and objectives: A common objective or desire that a group of people or things work together towards.
Concept and terminology: While "terminology" refers to the precise specialized language used to communicate within a given field or subject, "concept" refers to a general abstract idea.
Tasks and expectations of one another: The obligations and expected actions that individuals or organizations have towards one another in a particular circumstance or relationship.
Shared criteria for assessing information and alternatives: A set of standards that are widely accepted by all parties and are used to analyse and make decisions regarding various forms of information and choices.

Deliberation:
Skilful advocacy of individual and represented interests: The skilful and effective promotion, support, or defence of one's own or another's group's rights.
Effectiveness of conflict resolution strategies and interventions: The degree to which strategies and measures used to handle and end disputes are effective in reaching their desired outcomes.

Determination:
Procedural decisions: Decisions or choices made regarding the procedures, approaches, or actions to be used in order to accomplish a specific objective or result.
Substantive determinations: Judgements or conclusions relating to the core or significant elements of a situation, problem, or case.

Shared motivation

Trust:
The course of collaboration: The development or series of incidents, deeds, and encounters that happen when people or organizations collaborate to achieve a common objective.

Mutual understanding
Understanding and respect of other positions: The readiness and capacity to understand and value perspectives, beliefs, and viewpoints that may not be the same as one's own.

Legitimacy
Understanding and respect of other interests: The ability and willingness to understand and respect others' needs, goals, and motives even when they don't match your own.
Trustworthiness: Being a trustworthy, dependable, and honorable person
Credibleness: The trait or feature of being dependable and reliable

Commitment
Primary driving force for taking part: The primary driving force behind someone or a group's decision to engage in a specific activity, event, initiative, or attempt.
Acceptance of the results: Accepting and embracing the results or judgments that have been obtained or drawn in a particular circumstance, procedure, or undertaking.

Capacity for joint action

Procedural and institutional arrangements
Informal norms: The unwritten, unspoken, and frequently subtle guidelines that govern interactions and behaviour within a social group or community.
Formal institutional design factors: The purposeful and structured components that are formed within a system, institution, or organization to direct and influence its functioning.

Leadership
Sponsor: a person, group, or organization that contributes money, goods, or other resources to a person, group, project, event, or effort.
Convenor: A person or organization in charge of planning, arranging, and facilitating conferences, meetings, or events.
Facilitator/meditator: An unbiased third party that encourages dialogue and negotiation between parties involved in a problem or disagreement.
Public advocate: A person or group that speaks up for the rights, interests, and welfare of particular societal groups or the broader public.

Knowledge
Social science: A body of knowledge that concentrates on researching society, cultures, institutions, and human behaviour.
Natural science: A branch of knowledge that focuses on understanding the physical phenomena that occur in the natural world.

Resources
Time: The continued flow of events into the future from the past and present.
Formal abilities: Certain capacities or skills that are organized, frequently taught, and recognized in formal educational or institutional settings.
Financial capacity: A person's or an organization's capacity to handle financial concerns skilfully.

Dimension	Variables	Elements	Indicators
Collaborative outcomes	Spatial quality	Ensure quality of stay on *hoge kade* by transforming it into a residential area	More room for terraces, planting trees, addressing public space in general
		Preservation of monumental value and high-quality and attractive public space	Integrate monumental aspects like linden trees, terraces, sluice gates and paving. The restoration of the Rijnkade wall should include these aspects. Finally, take trees into consideration as much as possible.
		Maintain the meaning of the Rijnkade as robust and continuous city frontage:	The tough and robust appearance of the Rijnkade. Only interrupt where necessary
		Ambition materialisation quay wall	Basalt that is fair, sustainable and of high-quality
		Ambition detailing quay wall	kinks, bulges and curved lines are no longer present
		The Rijnkade, stairs and ramps as link between river and city centre	Ramps, stairs and all other elements that create connection

Figure 4. Table of collaborative outcomes

Dimension	Variables	Elements	Indicators
Collaborative dynamics	Principled engagement	Discovery	Shared interests
			Concerns
			Values
			Identification and analysis of relevant and significant information and its implications
		Definition	Common purpose and objectives
			Concept and terminology
			Taks and expectations of one another
			Shared criteria for assessing information and alternatives
		Deliberation	Skillful advocacy of individual and represented interests
			Effectiveness of conflict resolution strategies and interventions
		Determination	Procedural decisions
			Substantive determinations
	Shared motivation	Trust	The course of collaboration (are the parties reasonable, dependable and predictable)
		Mutual understanding	Understanding and respect of other positions
		Legitimacy	Understanding and respect of other interests
			Trustworthiness
			Credibleness
		Commitment	Primary driving force for taking part
			Acceptance of the results
	Capacity for joint action	Procedural and institutional arrangements	Informal norms
			Formal institutional design factors
		Leadership	Sponsor
			Convener
			Facilitator/mediator
			Public advocate
		Knowledge	Social science
			Natural science
		Resources	Time
			Formal abilities
			Financial capacity

Figure 5. Table of collaborative dynamics

3. methodology

3.1 Research philosophy & strategy

A paradigm may be viewed as a set of basic beliefs that represent a worldview that defines, for its holder, the nature of the world. In every research, this basic belief is based on ontological, epistemological and methodological assumptions (Guba & Lincoln, 1994). The ontological question focus lies on reality, and especially the nature of it. Secondly, the epistemological question focusses on the nature of the relationship between the knower or would-be knower, but also what can be known. Finally, "how do we go about learning whatever he or she believes can be known" is the methodological question (Guba & Lincoln, 1994). Critical theory, constructivism, positivism, and post-positivism are the four paradigms that can be classified based on those questions (Guba & Lincoln, 1994).

Constructivism is a paradigm that this study might be perceived as adhering to. Constructivism is particularly keen on comprehending how individuals and groups create their own knowledge and interpretation of a particular phenomenon (Guba & Lincoln, 1994). The aim of this study is to gain a greater insight into how various sectors collaborate to improve the spatial quality of a certain dike strengthening project. This objective implies that it is sought to understand the various viewpoints and knowledge systems of these players, as well as how they may collaborate to develop a shared understanding of what defines spatial quality and how it can be improved during the project.

Furthermore, constructivism emphasizes how crucial it is to understand how a given context's social, political, and cultural elements affect how meaning and knowledge are constructed (Guba & Lincoln, 1994). This study's context is the Rijnkade Arnhem dike strengthening project, and the emphasis is on how different sectors may work together to enable the improvement of spatial quality in this particular setting. Therefore, this research can be seen as fitting to the paradigm of constructivism.

It is crucial to obtain a deeper understanding of the topic, which is why a single case study was chosen. In-depth information about the project and the many sectors participating, including their viewpoints, aims, and tactics, might be gathered in this way (Van Thiel, 2014). Examining a typical, real-world situation is one benefit of a case study. As a result, the phenomenon under study may be described in great detail (Van Thiel, 2014). This will make it possible to fully comprehend the many perspectives and interactions amongst the actors participating in collaborative governance for the purposes of this study.

Lastly, since this study starts with an incomplete set of data and moves on to consider the likelihood of the observation's most likely explanation, it can be classified as an qualitative study (van Thiel, 2014). Furthermore, due to the anticipation that collaboration will result in improved spatial quality, the research can be categorized as deductive reasoning. Additionally, deductive research can be labelled as a top-down approach since the researcher first develops a general theory or hypothesis and then devises specific research techniques and studies to evaluate the truth of that theory or hypothesis (van Thiel, 2014).

3.2 Data gathering process and sensitivity management

For this research a total of twenty respondents have been interviewed. None of them were identical in terms of the organisation to whom they belong and which function they occupy regarding the Rijnkade Arnhem project. All those different views from different perspectives are very convenient for creating a well-considered response to the research question. Indeed, when statements are made by individuals with specific roles and by individuals who belong to specific organizations, they may be more relevant or representative. Therefore the decision was made to include the roles of the respondents within the analysis. As a result, not all of the respondents have remained anonymous because a name can quickly and easily be associated with a function or organization. This called for a transparent process with attention to sensitivity. The respondents were made aware of the procedure. This meant that they knew, prior to the interview, they would not remain totally anonymous. Additionally, all respondents had the choice of receiving the interview so they could hear it for themselves if they had any concerns. It was also made clear that it is, of course, possible for them to see the finished result if they are interested in doing so. Working transparently prevents the emergence of ambiguities and potential, unwarranted concerns. Nevertheless, to still preserve the privacy of the respondents as much as possible, they were not mentioned by name in the running text. They were referred to with 'respondent'. Appendix 2, on the other hand, mentioned what position each respondent held during the project. Only the thesis reviewer(s) were able to see this.

3.3 Data collection

According to van Thiel (2014) during a case study the data is usually gathered by using different methods. For instance, through surveys or observations, data might be disseminated in this way. However, the thorough decision was made to conduct semi-structured interviews for this research. This is due to that although there is some predetermined order in semi-structured interviews, the informant is nevertheless given considerable choice in how they approach the topics (Clifford et al., 2010). Conducting interviews also has the benefit of allowing for in-depth understanding of participants' emotions, thoughts, and experiences. Additionally, the researchers are flexible in their replies to the comments and behaviours of the participants throughout interviews. This enables follow-up inquiries and further exploration of specific subjects, which ultimately results in more comprehensive information (van Thiel, 2014). Furthermore, the interviews can develop in a conversational style by permitting a structure that is comparatively open. This gives participants the option to explore topics they believe to be crucial (Clifford et al., 2010). Additionally, doing interviews will create a way to obtain complex responses to complex issues because of their open structure, which gives respondents time to come up with their own replies. Also, the advantage of semi-structured interviews is that key themes based on the theories employed are predetermined and the interviewer still retains some degree of control by using a topic list and prepared questions (Boeije, 2014). Overall, conducting interviews has several benefits in general. Finally, during this research in-person interviews were prioritized over those performed remotely whenever possible. Each of the interviews has been recorded, with the optimal interview time being between 30 and 60 minutes.

Furthermore, in addition to employing interviews as a primary data source, desk research using document analysis and additional secondary literature was used. That the data was collected in multiple ways is useful to confirm and enforce finding (Verschuren & Doorewaard, 2007). The document analyses were utilized as additional sources of information because not all questions were addressed in the interviews, which are designed to elicit direct responses and opinions. A document analysis's ability to provide context for and understanding of a preceding process is also advantageous (Bowen, 2009). As a result, the researcher was more effectively able to comprehend the collaborative process completely. The research identified the parties involved and the exact actions that were taken during the collaborative process. The documents that were consulted included a variety of research reports and summaries of the steps taken to construct the preferred alternative. Also documents regarding the plan execution phase were used. All of the documents used were available on the website of the waterboard Rijn Ijssel, Royal Haskoning, the municipality of Arnhem, Bureau Ruimtewerk. Or were given by a program supervisor of the DFPP.

Desk research facilitates clear comprehension of the subject through written sources and permits improved empirical interpretation of the results (Verschuren & Doorewaard, 2007). The desk research done during this study was separated into secondary scientific literature and policy documents. The scientific literature was the basis for the empirical study and was used for theory building. The policy documents of the Delta Programme 2017, the Programmatic approach of the DFPP and the report for the reinforcement of the Rijnkade Arnhem were utilized to supplement and extend the information gathered from the interviews as a secondary piece of data. For information that can be obtained in the references rather than in the interviews, the documents were also consulted.

3.4 Data analysis

Appendix 1 contains the interview guide for this study and appendix 2 contains an overview of the functions performed by the respondents and the organisations to which the respondents belong. Appendix 2 also contains the duration of the interviews and the names of the respondents. All respondents have been involved between the beginning of the exploration phase (2016) until the end of the plan execution phase of the project (2020). After conducting the interviews they have been transcribed as soon as possible. In summary the interviews have been coded and analysed using the program Atlas.ti. The decision is made that the interviews were transcribed by the interviewer itself since doing so allowed for repeated listening of the interviews (Scheepers et al., 2016).

A light version of the so-called grounded theory approach, also known as thematic analysis, has been used to analyse the interview data. This method of analysis was far more adaptable than the GT-approach (Braun & Clarke, 2006). This approach encourages the identification, analysing and reporting of patterns in qualitative data. The primary goal was to arrange and interpret the data in light of the problem statement. However, this made use of several fundamental GT principles, including the iterative process and a modified form of coding (Verhoeven, 2016). The original three standard iterative processes of the GT-approach are open, axial and selective coding. Open coding, which is also known as exploratory coding, is frequently used to identify concepts that can be useful for analysis. These are additionally known as "sensitizing concepts." Axial coding includes linking the numerous concepts and codes that have been found, frequently in a causative manner. The context and conditions in which concepts and codes are found are revealed through axial coding. The third phase, known as selective coding, reduces the codes to their essential

components. For the theory created by the research, this is essential (Verschuren & Doorewaard, 2016). However, it was decided not to code in accordance with this roadmap while doing this research. This is merely a result of the thematic approach being appealing to me personally than the GT-method.

Before coding was done in this thematic analysis, exploration was carried out initially. The interview reports were carefully analysed in that first step. This made it easy to compile a list of ideas for the data's subject matter and overall purpose (Verhoeven, 2016). In the GT approach, this was also known as the exploratory phase (Boeije, 2014). We could proceed to the third stage, where the data was thematized, after finishing the coding during step two. This meant that the concepts developed in step two were further defined by categorizing them into a limited number of themes. The themes were once more be compared to the gathered data during the fourth step of reviewing and refining. A more definite set of topics would eventually emerge as a result of this. Additionally, at this stage, a hierarchical arrangement of the concepts nested beneath the themes was established. Linkages or associations between the themes as well as within the themes were explored during the fifth stage. By examining the precise meaning of the codes and themes in connection with the data and with one another, main groups and subgroups could be developed (Verhoeven, 2016). This step is also known as axial coding in the GT approach (Boeije, 2014). The data's structure was specified in the sixth and final step. By doing this, the interconnections between the concepts were revealed. It also provided an explanation for why certain concepts had been identified (Verhoeven, 2016). In the GT approach, this is known as selective coding (Boeije, 2014).

3.3.1 Reliability of the research

The consistency and accuracy of the variables being measured determines the reliability of a research (van Thiel, 2014). Consistency refers to the repeatability, the fact that this research was conducted by a single researcher is beneficial since this causes limited variation in terms of interpreting the interview results. What is also beneficial for the reliability of the research is the fact that the interviews were precisely transcribed. In addition, to enable a post-processing evaluation of the entire procedure, the data resources were also be documented (van Thiel, 2014). Accuracy is about the measurement instruments that are used during the interviews, which in this particular context are the interview guidelines. The interview questions are specific and include references to the concepts that were measured, which are spatial quality and collaborative governance. For the preservation of accuracy this is advantageous.

Reliability in its entirety can be produced by renunciation. The paradox is that the researcher's context and contribution are crucially important when conducting qualitative research. As a result, it is challenging to detach oneself from the research (Verhoeven, 2016). Another feature of reliability is that it can be assessed by a different researcher using the same techniques as the original researcher. Additionally, the identical results and conclusions will be discovered by conducting the same case. Therefore, reliability's primary goal is to reduce biases and inaccuracies in research. (Yin, 2014). To reduce data biases in this research, for instance, all respondents were asked the same questions (van Thiel, 2014). Important for this was to make the research well documented and transparent. This was achieved during the research by explicitly stating the decisions made.

Furthermore, the participant bias is, in the light of reliability, a significant factor that must was considered when conducting research (Saunders et al., 2007). Participant bias are factors that influence the perception of actors. The interviewer-respondent relationship, the

participant's desire to participate, the respondents' expectations for the study's results, the interview's scheduling, and the way the questions are asked are some examples of potential variables (Yin, 2014). After all, the difference between a state of mind on Friday afternoon and Monday morning can alter greatly. First of all it is important to carefully pick the appropriate respondents. Participants have to be chosen based on their relevancy to the study and their potential to provide insights into the topic (Patton, 1990). When the appropriate respondents are chosen it is critical to keep in mind that the respondents might propagate a particular ideology or vision in accordance with the objectives of the organization to which they belong. As a result, certain data could potentially be biased (Saunders et al., 2007). To deal with this problem, a standardised questionnaire has been used that contains clear and neutral questions. This limits the potential for predisposed conclusions. This was also advantageous for the interviewer because it was more challenging to provide hints or indicators accidentally leading to a potentially desired outcome. Certain questions also centred on the respondent's perspective which, when considering a bias, is advantageous. In summary, there are numerous strategies for preventing participant bias. Aside from these strategies, it is crucial to always apply them in the broader framework of continuity. According to Saunders (2007) participant bias can occur when there is no continuity in the ways the interviews are conducted since it can lead to different insights. In light of these factors, maintaining the research's reliability remained a top priority and called for careful respondent selection, the use of standardized questionnaires, and consistent interviewing techniques.

3.3.2 Validity of the research

One step further is taken during the validity analysis of the research. Validity, in theory, assesses how free from systematic errors the research is. In other words, validity considers the veracity of the research (Verhoeven, 2016). In qualitative research, reliability comes before validity, whereas in quantitative research, reliability comes before validity. Considering that this kind of study typically involves smaller teams and frequently involves the researcher in the design of the study. Reliability is almost always put under pressure as a result. Because of this, researchers tend to emphasize in qualitative research the reliability of the findings, the locations, and the participants, as well as how much they can be transferred to different contexts and how well the research design addresses the problem. (Boeije, 2014). Finally, there are three categories of validity: internal, external, and construct.

3.3.2.1 Internal validity

'Results are internally valid if you can use them to draw the right conclusions' (Verhoeven, 2016, p. 393). Right conclusions are those that stand the test of time and can withstand criticism from fellow scholars. A variety of factors could possibly undermine validity. These include the use of instruments, subject selection, and the so-called test effect (Verhoeven, 2016). In the context of this particular research project, the term "instrumentation" refers to the questionnaire that was utilized during the interviews. Its adjustment could have an unfavourable impact on internal validity. To minimize the impact on internal validity, the same questionnaire was utilized for everyone and throughout the whole study. Regarding the subject choice, it was impossible and impracticable to interview all those involved in the Rijnkade Arnhem project. Therefore, a potential threat to internal validity could be that only a subset of people involved's perspectives were looked at since not everyone was interviewed. However, it was chosen deliberately to speak with people who represented various

organizations. In this manner, an effort was made to present a realistic picture. People may behave differently under specific circumstances if they are aware that they are taking part in a study, which is known as the test effect. This implies that they might react differently to particular interview questions because they desire to depict reality in a different way. By standardizing the interview questions, an effort was made to prevent this. As a result, rather than evaluating candidates' capacity for question anticipation, performance on the questions was evaluated.

3.3.2.2 External validity

'External validity is generalisable; that is, whether your findings may be equally applicable to other research settings, such as other organisations' (Saunders, 2007, p. 151). It can be a concern in particular when a case study is performed in one organization. In these situations, the aim of the research won't be to develop a theory that applies to all populations. The only duty will be to attempt to describe what is occurring in the specific study context (Verhoeven, 2016. However, the goal of this research is not to develop a theory that can be applied to all DFPP projects, but rather a theory that describes the specific research situation and derives lessons from these specific settings that could be possibly applicable to a more generalising extent. To put it another way, it is hoped that future DFPP will be able to learn from this research. In order to ensure that the selection of participants questioned for this study was representative for the entire group of participants, strategic sampling was employed throughout. Interviewing participants from each stakeholder group participating in the Rijnkade Arnhem project allowed for strategic sampling to be done (Saunders, 2007). This decreases the possibility of an atypical sample, in other words a sample that is not representative for the stakeholders involved. In turn, external validity benefited by lowering these risks.

3.3.2.3 Construct validity

'Concept validity refers to the instruments used in experiments and in surveys' (Verhoeven, 2016, p. 401). It is important to measure only what is desired to be measured. Furthermore, it's crucial to avoid using the researcher's personal judgments to gather data because they tend to support their previous notions. Therefore, determining adequate operational measurements is crucial in this case study of the Rijnkade Arnhem project. This was accomplished by creating a precise theoretical framework. Clear operational measures were then developed from the theoretical framework. Additionally it can also be the case that an respondent during an interview gives an desired, societal accepted answer that places him or her in a certain group. These answers are called societal desirable. It was attempted to avoid this by maintaining a critical mindset and continuing to ask follow-up questions throughout the interviews. Finally, measuring abstract ideas might be challenging. For instance, this study examines spatial quality to some extent. This is an abstract concept since it can be understood in a number of different ways. To address this, the term was explicitly defined before the question was posed (Verhoeven, 2016). In this case, the measurement tool that could be employed to accurately measure such a concept is the question at hand. The validity of the concept was not intended to be under pressure in this way.

4. Results

This chapter explains how collaborative governance made it possible to improve the spatial quality into the Rijnkade Arnhem project by using the data that was gathered in the process. Within this clear delineation of the exploration phase and the plan stage of execution a light will be shed upon the collaborative tendencies. This allows for subsequent statements on the collaboration. The data consist of 20 interviews with several stakeholders who represent various organizations. This decision was taken from a heterogeneous perspective, which enhances the study's legitimacy and representativeness. A credible reconstruction of the collaborative process may be accomplished in this way.

In order to provide a comprehensive idea, the project was first of all examined thoroughly. This was done by, for example, exploring the background in more detail and after that the motives and preceding history. Subsequently the project itself was outlined. Furthermore, this chapter also used the integrative framework of Emerson et al., (2011) so that the qualitative data pertaining to the collaborative process could be analysed. After evaluating through this framework, claims could be made on the collaborative process in relation to spatial quality. After that an effort was made to develop an comprehensive grasp of the concept of spatial quality and its significance to the Rijnkade Arnhem project from the perspective of the project's participants.

4.1 Case study

The Rijnkade is one of the many dikes in the Netherlands to provide protection against the water. The 1.2-kilometer-long dike is situated in Arnhem, as its name implies, and runs from John Frost Bridge to Nelson Mandela Bridge. The dike, which is in the eastern region of the Netherlands, shelters the people of Arnhem from the Rhine River's waters, and its trajectory runs along solely built-up areas. This means that if the Rhine River were to flood, it might have disastrous effects on both the infrastructure and the people who live in the densely populated area. For the residents of the city and the surrounding area, the Rijnkade also has a significant cultural and historical value as a result of the famous Battle of Arnhem in September 1944. It is a monument that has great value for the local community and plays a significant role in the history and culture of Arnhem. Additionally, because of its proximity on the Rhine River, the Rijnkade has cultural value. It is an inviting spot that provides views of the river, resulting in a popular tourist destination. It is comprehensive in terms of recreation as well, containing a variety of restaurants, shops, and cafés.

These are functions mainly located on the high quay. However, the low quay also has functions such as logistics. Therefore, supplies and cruise ship visitors are discharged there. It serves as both a venue for events and a berth for sailing heritage. The Rijnkade's ability to protect against flooding may be its most significant feature. The flood barrier consists of two parts. The lower part that lies immediately on the water and a higher part. This higher part only reverses at high water. In particular, the higher part of the flood barrier is the part that has been rejected and thus the reason for the project. The next paragraph will explain this in more detail.

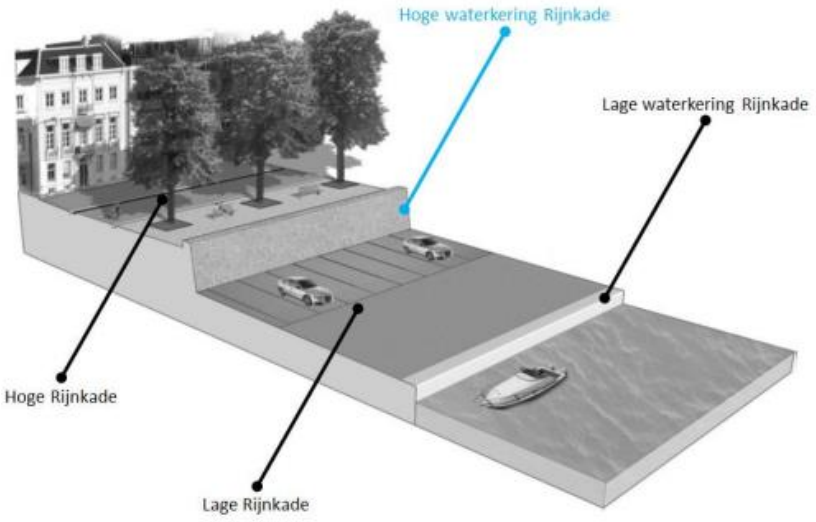

Figure 6. Subdivision functions Rijnkade (Haverkort, 2021)

Figure 7. Project boundaries Rijnkade Arnhem (Gemeente Arnhem, 2018)

4.1.1 Motives and prior history of the Rijnkade Arnhem project

The 2017 Delta Programme made it evident that the flood defence safety regulations dated back to the 1960s. As a consequence new safety requirements were necessary and thus created and disseminated under the cover of the so-called Water Act. Programs like the DFPP were in operation to guarantee compliance with this act. As an umbrella organization, this program is in charge of a number of projects to guarantee that the goal—improving 1,500 km of dikes and other defences—is accomplished by the year 2050 (DFPP, 2023). The Rijnkade failed the test since it didn't seem stable enough. It was also discovered that the dike's basalt stone revetment stability wasn't sufficient enough (DFPP, 2023). However, since it is an immense undertaking, involving a lot of expertise and capital, not all projects can be completed at once. The projects have therefore been prioritized according to necessity. Initially, implementation was intended for approximately 2030 because the Rijnkade's quality was not at an extent where it was likely to collapse. However, the project was expedited, in consultation with the other managing stakeholders, because the municipality of Arnhem had already completely reconstructed the southern city centre a few years prior. From a strategic point of view the municipality of Arnhem decided to redevelop the Rijnkade in a way that allows for a direct

connection with the inner city. This is currently missing, and by enabling it to happen, it is anticipated to improve the area's quality overall (Haverkort, 2021).

Certain events had already occurred to make this feasible since opportunities for the Rijnkade were already being explored a few years prior to when the city centre was being redeveloped. The project was therefore purposefully delayed since it was known that the water board would eventually need to fortify the Rijnkade. The contact between the municipality and the water board was mainly about the return of the Jansbeek back then. This stream flows through the heart of Arnhem before draining into the Lower Rhine. Even though the stream runs through the centre, the water is technically managed by the Rijn and Ijssel water board, this resulted in intensive contact between the two groups of stakeholders. This led to the municipality's wish to advance the quality of the city centre as soon as possible, which was shown in their desire to move the Rijnkade project forward. As a result, the project was set in to motion on an earlier moment by the water board.

4.1.2 Rijnkade Arnhem dike reinforcement project

Additionally, the collaboration between the municipality of Arnhem and the Rijn and Ijssel Water Board is unique in this particular context because it involves strengthening a dike in the heart of a city. It tends to be the peripheral areas that experience dike reinforcement more frequently. As a result of the geographical location there is intense cooperation where also the interests are more clearly emphasised. For instance, the municipality seeks to at least preserve the present quality while the main objective of the water board is to construct a "sober and efficient barrier." The municipality desires higher quality in theory, but in practice, it should never be inferior to the state it was in prior to redevelopment. Despite conflicting interests, both groups of stakeholders were able to agree that ‘water safety’ is the primary goal. Additionally, a combined project team made up of employees from the municipality and the water board was formed (Gemeente Arnhem, 2018). Nevertheless, in order to compromise the municipality *meekoppelkansen* were added to the project that need to be sorted out. 'Sustainability' is one of these, for instance. This was addressed by using the MKI, or environmental cost indicator, as an criterion to eliminate bids with excessively high environmental impacts (Rouwendaal et al., 2023). Due to the usage of this instrument, the least environmentally conscious ideas might already be rejected. The contractor who could guarantee the highest fictional discount and the highest actual discount ultimately secured the contract utilizing this approach. The result was project execution with zero emissions. 'spatial quality' is another example that has been presented as a *meekoppelkans* and will be covered in greater detail later on.

4.2 Collaborative governance and spatial quality

Prior to discussing how spatial quality was framed and improved throughout the Rijnkade project, it is critical to understand the collaborative procedures that preceded. Therefore, using the qualitative data, it will be addressed how collaborative governance was employed to include spatial quality into the project. The collaborative dynamics by Emerson, Nabatchi and Balogh (2011) will be used as tools to measure the collaboration. After this section answers can be formulated to the first two sub-questions:

- *Which collaborative dynamics and elements supported the improvement of spatial quality during the Rijnkade Arnhem project?*

- *What were the key challenges or barriers regarding the collaboration that arose during the exploration and plan execution phase of the dike strengthening project and how were they addressed?*

4.2.1 Principled engagement

Through principled engagement parties with divergent interests and concerns can come to an understanding and build value in their collaboration. This is a gradual process, and various stakeholders may get involved at various stages. Through this component, stakeholders with various viewpoints can resolve issues or offer value. It is first of all necessary to examine the stakeholders and to give a quick glance upon the collaborative process before the elements of principled engagement can be defined. This is because it is critical for the partnership to comprehend who the stakeholders are and what they stand for and what steps they subsequently went through during the collaborative process. Since the collaborative parties usually develop a common goal after this, principled engagement will develop (Emerson et al., 2011).

During the Rijnkade Arnhem project different stakeholders with all sorts of backgrounds were involved at various moments in time. However, this group of stakeholders can be divided into directors on the one hand and participants on the other. The director group consists of mainly the municipality of Arnhem and the waterboard Rijn and Ijssel. While the municipality is more concerned with the quality of the area, the waterboard interests lies on the water safety. The DFPP and Rijkswaterstaat can be labelled also as directors, but yet to a lesser extent since they are more distanced to the project. For example, the DFPP is mainly concerned with arranging finances and providing knowledge for the project. Respondent 1, for example, states to be working in the DFPP's programme directorate, overseeing the grants: *"We review and allocate funds, acting for the funder, supporting waterboards. Our role promotes knowledge exchange between water boards for mutual enhancement".* In addition, respondent 14 states to be working in the engineering, knowledge and innovation department: " *We actually subsidise the water boards to be able to do a project at all, so that has to meet all kinds of preconditions. It is laid down by law and there is a subsidy scheme that has to be met. But we also facilitate, so to speak, in terms of knowledge".* The Rijkswaterstaat, on the other hand, is mainly concerned with the conservation of the river. Respondent 2 states the following on this matter: "*Rijkswaterstaat states if you do a dike reinforcement project, then at the bottom of that line on balance it must be zero, so it must not actually affect the axis of the river with your project".*

As for the participants, they are all of the project's remaining stakeholders. This is a very diverse group from civil representatives to entrepreneurs. Respondent 15, who is a representative of a Homeowners Association, underscores this diversity: "*I am a representative from this VVE, but other VVEs were also partly represented during the decision-making process. The hospitality industry was represented, business operations on the Rijnkade separate from the hospitality industry were represented. Consider, for example, the shipping companies. Finally, the council for the disabled was also present. So all kinds of parties were present in general and to monitor their values that they pursue".*

Furthermore, the project is part of the DFPP what means, as mentioned above, that the formal objective is to ensure water safety. All stakeholders accept that water safety is the precondition for the project, after all, no one wants the area to flood. However, this does not automatically mean it is something close to the hearts of the stakeholders. Given that most of the general public doesn't have much knowledge on a topic like water safety, it is accepted

that external parties are concerned with it. Respondent 2 even states that local residents have verry different interests since they are much more concerned with the design of the area: "*They are quick to trust when we say that water safety is adequate. "*Spatial quality, on the other hand, is something much more emphatically felt in the environment by the various stakeholders. Hence this was a central discussion point during the decision-making process. Despite the fact that it cannot be formally viewed as a project goal, it nonetheless has essentially the same significance. The concept therefore took shape under the rubric of a *meekoppelkans*.

As for the collaborative process that the various stakeholders went through collectively during the project, it can be labelled as quite comprehensive. In the Netherlands, for example, the reinforcement of a primary flood defence like the Rijnkade usually occurs in phases. First, there is the exploration phase (2016–2018), during which the task is explored and potential strengthening options are analysed in order to provide a preferred alternative (VKA). In the second phase, better known as the plan execution phase (2018-2020), the VKA will be developed into a design that will allow the contractor to realise the reinforcement. Realization (2021–present), the third and final phase of the project, will be finished by a formal handover to the embankment manager

The exploration was the catalyst for and the first place where various parties' collaboration began to take shape. During this period, there was already collaboration between various stakeholders, including local residents, (catering) entrepreneurs, employees of water board Rijn and IJssel, province of Gelderland, Rijkswaterstaat Oost-Nederland and the municipality of Arnhem. These stakeholders were requested to identify problems and offer suggestions for raising the standard of the living environment right away. Social safety, the lack of trees on areas of the high quay, the connection between the high and low quay, traffic safety, and the quality of accommodations near restaurants where all aspects that emphatically emerged (Laar, 2021). A step-by-step approach was used to arrive at a preferred alternative during the exploratory phase. In terms of content, these steps were: (1) generation of promising building blocks and applicability, (2) preparation of alternatives, (3) alternative assessment, and (4) preparation of a preferred alternative. The first step deals substantively with water technical aspects and safety. In the second step, the alternatives were concretised into four themes by the administrators ; (a) Rijnfront, (b) green Rijnkade, (c) water and (d) lively Rijnkade. The third and fourth steps are hallmarks of the project's collaboration because none of the stakeholders were formally participating in the project until the alternatives were presented. Themes b and d strongly established after including stakeholders in the decision-making process. The VKA based on these ideas, specifically a "Green and Lively Rijnkade," was presented to stakeholders during a subsequent informational evening (Laar, 2021).

The aforementioned details can give the impression that participants weren't fully involved in the collaborative process because they were merely given options to choose from. Respondent 4 offers the following justification for this: *"Yes, we very clearly stated what do we expect from each other, what is possible and what is not possible? People can ask all kinds of things, for example about the layout of the area, but they are not always directly linked to the water safety task. Well what we managed, because obviously a lot of questions from stakeholders in the area had a lot more to do with the liveability of that area rather than water safety. We made alternatives with the municipality so that the input of residents could also be given a place in that way."* According to respondent number 4, inhabitants naturally are unaware of the importance of water safety, which is still the goal of the dike strengthening. Due to this, offering different variants is the ideal option because doing so is thought to allow project directors to include water safety in any case. Furthermore there's the fact that until that point the questions were mainly about everyday issues; the respondents'

interest was, therefore, never on water technical issues. The development of different variant has therefore been beneficial since (a) residents now have greater freedom of choice and (b) water safety is now always guaranteed in the project. A explanation offered by Respondent 12 for the use of many versions is that participants sometimes withhold their comments due to their own embarrassment in speaking up. This threshold might be lowered by providing variants: *"Yes 100% yes and also what was expected of the people, right? Because for citizens it's also difficult sometimes. They go to information evenings. Some find it very difficult to express their opinion, so you really have to stimulate them to just really share their opinion, because ultimately that is the benefit for the project. And that is what we did, on the one hand, by receiving them very openly in a Rijnkade café. That was really a café so it was all very homely. On the other hand, by presenting variants towards a preferred alternative."* Respondent 10 continues, saying that even though they as directors came up with several variants, they were all based on previously gathered feedback. The variants therefore did not appear out of thin air: *"There was no strong opposition to the chosen preferred alternative. Of course, we did gather knowledge about this beforehand. So we did hear positive voices like: "well, we like that, that looks good."*These three examples demonstrate that it was a thoughtful decision to only include participants in the project once the variants were created. Therefore, this has to do with realistic evaluations of the participants' level of technical knowledge and their ability to articulate their ideas. However, information on where their primary interests lie was gathered previously and included in a number of variants. Water safety is the basis for all of these.

It was possible to proceed to the plan execution phase after choosing a preferred alternative. The VKA is developed into a practical design during this stage. During this phase, the *Rijnkadeberaad* was also expanded to include representatives of businesses such as Arnhem 6811, for example, thematic design workshops were also organised. These meetings saw the development of the VKA into a reference design. This entails additional development of the design, therefore it also includes identifying the materials, pricing, and other requirements for carrying out the project. This reference design was further described to the residents during an informational evening in order to better inform them. Then, even before the legal process started, it was made accessible for examination so that individuals might react if necessary. An informational evening was then planned to inform residents about the draft decisions that had been made available for examination. This also included an explanation on how to submit a public comment as an stakeholder. Finally, newsletters were distributed throughout the plan phase of execution to keep the community updated on project-related activities. Additionally, there were meetings and one-on-one conversations (Royal Haskoning DHV). In summary, collaboration between many stakeholders occurred in a variety of ways in this phase, just as it did during the exploration phase.

In conclusion, through the elements of discovery, definition, deliberation and determination of the integrative framework from Emerson et al., (2011) it will be argued whether principled engagement between the various stakeholders has been achieved.

4.2.1.1 *Discovery*

The first element is *discovery* whereby the emphasis lies on the ability to express values, concerns and opportunities. Despite the fact that discovery may initially be centred on recognizing shared interests, it may subsequently be seen in collaborative fact-finding and more analytical studies (Emerson et al., 2011). That there was certainly enough space to express oneself during those various moments of the decision-making process has been

highlighted several times by both groups of stakeholders. According to respondent 19, not only ample space was provided, but it was also utilized: "*Yes, I did get that space and also took it. I just do talk plenty and I just indicate there every time of; 'yes for us it is important when it comes to accessibility'. I also just ask questions, usually I also have a lot of questions."* Respondent 4 shares a similar viewpoint and adds to be even guiding the respondents into the proper direction: "*We even presented several alternatives to the residents as a mindset for the project. Think of possible locations for greenery for example. It's important to really include them in the process."* According to respondent 13, certain programs were even launched to allow diverse stakeholders to express themselves: *"Yes yes, I did think so, look the water board translated that into customer requirements. I don't know if you're familiar with that term? All those different parties had room to express themselves through those customer requirements. I liked that."*

However, although there is unanimity about the extent to which someone can and may express oneself, this does not mean that someone always feels understood. For example, respondent 19 suggests that there was a lot of misunderstanding about accessibility. Respondent 19, who advocates for the disabled, really had to make it clear to the other stakeholders that accessibility is a prerequisite and not just another interest: *"But we ourselves do always try to make it as clear as possible that accessibility is a prerequisite, but yes, sometimes you have to fight it a little bit."* However, there was enough support from the various stakeholders to listen carefully to them. For example, respondent 3 states that several stakeholders were open to having themselves blindfolded in order to experience what it was like to be disabled. They then had to walk across part of the Rijnkade and could experience for themselves that it was very difficult to navigate oneself across the small paving stones. The fact that stakeholders are willing to be blindfolded in order to put themselves in the experience of a disabled person illustrates a high degree of benevolence. This typifies the cooperation that took place during this project: "*The association of the functionally disabled in Arnhem manifested itself very strongly to really give a quality impulse for the area. They took us on a field trip to show us how the current Rijnkade was so poorly designed for these people. And when you experience that yourself you also realize that you have to look at that in a very different way. They negotiated really well for the benefit of society"* .

4.2.1.2 *Definition*

The second element is *definition* whereby the emphasises lies on a common purpose and objectives, this comes from the continuous efforts to build shared meaning. Another important aspect of this element is whether there is a clear division of roles and whether it was clearly described what was expected of the stakeholders involved (Bentrup, 2001). That there were shared goals and objectives became apparent primarily from the meetings that took place shortly before the preferred alternative was adopted. Respondent 3 substantiated this claim: *"Yes indeed, well what we managed to do, because of course a lot of questions from stakeholders in the area had much more to do with the liveability of that environment rather than water safety we made a cooperation agreement with the municipality. This way the input from residents could also be given a place in that way. The municipality and water board then took joint responsibility."* Both respondent 5 and respondent 8 adds to this that all the ideas and wishes were collected and subsequently processed. What was deemed vital arose as a result of this: "*You collect all that. You ask people what they think is important. Well from that came out preferably not to work on the project between May and September. Do that especially in the winter, but not between May and September. Because then those terraces are open, well we really took that into account."* In addition, respondent 7 states that during the

Rijnkade cafés it was also made clear what was expected of the different stakeholders. During those Rijnkade cafés a domestic setting was created so that people could more easily express themselves. According to respondent 7 this was resourceful since it was made clear to the stakeholders that their input was desired: *"Yes 100% and also kind of what was expected of the people right? Because for citizens it is sometimes difficult. They go to information evenings. Some find it very difficult to express their opinion, so you really have to stimulate them to share their opinion, because ultimately that is the benefit for the project. And that's what we did by being really open with them in a Rijnkade café."* This quotation, provided by respondent 7 suggests that the stakeholders' responsibilities were made explicit. It also demonstrates that when this is accomplished it is anticipated that consensus is forged so that a shared objective can be pursued. This in turn benefits the project. Furthermore, in terms of the element of *definition*, nothing particularly notable came out of the interviews, and despite the fact that each of the stakeholders had diverse interests, a unifying objective was able to be established. Specifically, to improve the region as a whole, provided that water safety was maintained. The fact that stakeholders were expected to actively engage in choosing the preferred altern is the last aspect worth mentioning. Due to this, a variety of options were provided from which the different stakeholders may select. The stakeholders might still be included in the decision-making process while water safety could be integrated at all times as the following quotation by respondent 13 underscores: *"In those discussions with the residents, we did set out the preferred alternative, which, if you weigh up all the interests, these are the alternatives. That's how it was presented. You can't ask residents for everything; they don't always see the differences. Hence the choice of alternatives."*

4.2.1.3 *Deliberation*

Communication between participants, advocacy of interests, and the efficacy of methods and interventions are all parts of the deliberation process (Emerson et al., 2011). First of all the advocacy of the interests. There was enough room for the stakeholders to share their views on the design of the Rijnkade. According to respondent 2, efforts were made to involve all relevant stakeholders from the very beginning of the project:*"2017 we organized our first residents' evening where indeed Everybody was welcome, so the authorities, but also the people along the quay, people from the inner city. Everybody from Arnhem was just free to come. So we did that very structurally, every six months we organized at least one meeting."* Respondent 19 continues by stating that during the meetings, the representation of the various groups always went effortlessly. Which group a person belonged to and, thus, which interests they were defending, were always obvious: "*At such a meeting, it also always had to be made clear which group someone belonged to or what that person represented. Thus, for the directors, the interests could be kept well separated."*

4.2.1.4 *Determination*

The final element of principled engagement is determination. This consists of two factors. One the one hand procedural decisions and on the other hand substantive determinations. The substantive determination influences the actual content of the decision, but the procedural determination affects how a decision is made. The KES, or customer requirements system, in the Arnhem Rijnkade project might be considered a procedural decision. This is due to that the fact it entails creating the guidelines and processes for documenting all local citizens' requests. Respondent 10 states that: *"From my role as project manager, I can say that it's 100% fixed and I think that's what we did our best, at least in my time, with that customer*

requirements." Subsequently, providing a range of preferred alternatives from which local residents might select is an illustration of a substantive determination. This is due to the fact that a substantive decision must be made. Respondent 3 underpins this claim: *"We determined the preferred alternative with the residents, so first they chose from a number of alternatives and then we fed that back to the administrators."*

4.2.2 Shared motivation

Shared motivation refers to the interpersonal dynamics and relational components between cooperating partners. A consistent level of interaction will improve the collaboration and its results. (Emerson et al., 2011). An example of an consistent level of interaction that did benefit the collaboration is that between the municipality of Arnhem and the waterboard Rijn and Ijssel. The water board was the first to approach the municipality about fortifying the Rijnkade. The municipality agreed, but some elements had to be added under the heading of *meekoppelkansen*, according to respondent 11: "*Through meekoppelkansen, we can also restore the row of trees, renew the sewer, complete the redesign of the public space and create shore power. Subsequently, it was said to be a major project of the water board with the municipality joining in."* The following phase was to set up a dual system, where, for instance, an environmental manager from the municipality and from the water board had to collaborate to oversee the project. Given that both parties have opposing interests, this is necessary. The municipality aims to improve the public area, while the water board's main objective is to create a sober and efficient barrier. One may say that the way in which the two groups cooperate is highly unique. Similar interactions have happened before, but one party only observed as the other did the task. In this project, two contracts were consolidated. The municipality paid for the stones, and the water board paid for the barrier, so both parties made financial contributions. The fact that a contractor needed to be directed meant that there could only be one principle in the end. In doing so, the municipality granted the water board authority, which is something that they often do not prefer to do according to respondent 16: *"And that's pretty special, because of course we don't like to do that, because we want to have our own grip on the things we pay for."*

Through the elements of trust, mutual understanding, legitimacy and commitment of the integrative framework from Emerson et al., (2011) it can be argued whether shared motivation between the various stakeholders has been achieved.

4.2.2.1 *Trust*

The first element is the development of *trust*, this happens gradually over time when different stakeholders work together and prove they are predictable and dependable. As could be read in the previous section there was already a history of collaboration between the municipality and waterboard resulting in trust. Respondent 16 states that trust was clearly present because certain tasks were distributed in extraordinary ways: *"We actually handed over our assignment to the water board, and the water board passed it back to the contractor. That's quite extraordinary, because of course we don't like to do that. We want to have a grip on the things we pay for."* However**,** prior to this there had been other examples of cooperation as well. For instance, respondent 15 claims that it was asked to clarify various legal issues that might be connected to the project based on experience as a lawyer. During this procedure, the complete final report was examined and commented upon. *"I have been working at the court in Arnhem and they also wanted from my experience at least some of the legal aspects that*

might come into play." This claim by respondent 15 underpins the level of trust that existed. Another example of a trust relation is one that is not based on earlier encounters but on a lack of technical knowledge. Water safety is an issue that is closely related to trust. The lack of awareness among the general public is what gave rise to this trust rather than the fact that there had previously been extensive cooperation. As a result, a topic like water safety is easily assumed by the general public. Respondent 3 backs this claim by stating the following: "*The knowledge in the field of water safety that is, of course, very much present at the water board and at the Rijkswaterstaat. The residents do rely on this."*

4.2.2.2 *Mutual understanding*

The second element is the development of *mutual understanding.* This explicitly refers to the capacity to recognize, respect, and understand the interests and viewpoints of others, even when one may not share them (Emerson et al., 2011). The initial meetings with the different stakeholders are where this process begins. The hospitality sector in particular was concerned because they had already suffered significant financial losses as a result of Corona and did not want any more inconvenience from the initiative. Consequently both parties met and discussed how to complete the project with the least amount of disruption feasible. According to respondent 2, the hospitality sector was given a greater priority than the other stakeholders: *"That kind of thing we did coordinate more with the hospitality industry itself so those got a little more, how do you say it, deeper attention. Even more so than the other stakeholders. They obviously have a very different interest than when living there on the Rijnkade."*Respondent 15 continues by arguing that according to the different rapports of the various meetings, there was a hospitality entrepreneur who demanded more and more at the time, but this wasn't granted. However, despite his annoyance, he did cooperate because it had been well described: "*A hospitality entrepreneur who wanted more and the that didn't work out for certain reasons was also always explained why it couldn't be done otherwise. Eventually he acquiesced"* Another example is given by respondent 10 who states that at one point, a hospitality entrepreneur suggested replacing the little stones on his patio with a level substance, such as concrete for instance. This was due to the inconvenience that shifting tables caused him. Technical issues prevented this from being honoured after that. However, despite this outcome the hospitality entrepreneur was sympathetic: *"Hospitality entrepreneurs who said yes, but my tables wobble and people in high heels break their necks over those pebbles, so we don't want it. Yet because of technical reasons it was not changed. Nevertheless, the hospitality entrepreneur did not resist, he accepted the outcome."* According to respondent 6, the nature of the negotiations with the hospitality sector was not particularly fascinating. Prior to putting the interests on the table, it was stated whether or not something was done, as well as why and why not. The project plan can also be used to directly infer that discussions were held in this manner: *"I do think that ultimately that has also translated into the plan, so when you see what the design looks like, I do think that the interests of the catering industry and the interests of the residents have been seriously taken into account."*

Based on the previous claims, it appears that there was initially a lot of mutual understanding amongst the different stakeholders. However, in contrast with this, respondent 18 claims that he would not have received much sympathy and would have received little attention. Nevertheless he accepts the momentary inconvenience since he is aware that concessions must be made: *"Okay, the project looks very nice and neat. It will eventually be to our advantage, because we will have some wider terraces. I will accept that the road is open for a long time."* Notwithstanding the faintest glimmer of comprehension it is continued

to assert, similar to respondent 17, that requests, such as putting water and electricity on the terrace's opposite side, will not be fulfilled. Respondent 18 adds that the crane on the Rijnkade should be moved since it obstructs the view. Both respondents believe they were given inadequate information about the work. The contrast between these unpleasant rumours and the positive ones up to this point is startling. However, the unfavourable rumours are easily disproven by the following statement provided by respondent 17: *"It's just a letter or email and then that meeting. we can't attend. You guys always hold those late at night and then we're here working. The council should keep us even further informed."* This demonstrates that respondent 17 has little motivation to be informed, therefore it is not surprising that this individual misses out on a variety of information. The opinion of respondent 17 will therefore have no bearing on the final result. Respondent 18 is, on the other hand, primarily furious because wishes are not being fulfilled. Again, this may be readily disregarded because the wishes are a private matter and are not the Municipality of Arnhem's responsibility. The ´rage´ is therefore unjustified and the opinion of respondent 18 won't have an impact on the final judgement either.

4.2.2.3 *Legitimacy*

Legitimacy is about the understanding and respect of other interests (Emerson et al., 2011). As it became apparent that the terraces would be expanded, this empathy for the interests of others was clearly expressed. Although the owners of the businesses stand to gain greatly from this, the remodelling that preceded it is less advantageous. The corona virus has already caused difficulties for the business owners. Their financial situation could be destroyed if their eateries on the Rijnkade became more difficult to access as a result of improvements. Respondent 2 claims that administrators expressed complete sympathy for this and even engaged in negotiations with the hospitality sector to reconstruct the roadway possibly during the off-season. The hospitality sector was able to maximize visitation during the busiest time of year by taking this action. *"We were also still halfway through the corona period and we also said that if we are going to cause so much inconvenience to the hospitality industry by demolishing the entire dam there, that means quite a lot for the terraces. Perhaps we can agree to have the work start outside the season."* Respondent 19, who spoke on behalf of the APCG, an organisation that represents the interests of the disabled, expressed less satisfaction. Indeed, respondent 19 believed that there was more than enough space to represent viewpoints and that the administrators were always compassionate and courteous when it was brought up. It is, however, the perception that's the issue. According to respondent 19 accessibility didn't receive additional consideration until it came up during meetings. Instead of merely paying attention to this when it is brought up, this should be the initial point. You design for everyone as a designer. Therefore, there is surely opportunity for improvement in the future: *"taking that seriously in that way that still needs to grow. It's always one more thing when in fact it should be the starting point. If you are a designer, you have to design for Everyone."*

4.2.2.4 *Commitment*

The final component known as commitment enables the participants to commit to the CGR and its objectives. There are two indicators in the element. The desire to participate initially and the willingness to accept outcomes (Emerson et al., 2011). Because of the Rijnkade project, the majority of the stakeholders' living environments will experience an improvement in quality, this encourages their participation. This is the cornerstone for their shared objective. Respondent 15 is completely in favour of this request as this individual states the following: *"It's going to be a great walking boulevard with wonderful terraces where you can enjoy that waterfront view. More uniformity and beautification those are terms that have finally resonated in such a way that you can say, here everyone has something of their liking, not only can you bring it in, but you're going to find it. I'm convinced of that as well. It is worth every effort to be able to contribute something to this."* The stakeholders' level of acceptance of the results may vary though according to respondent 3. This is due to that the stakeholders were invited to actively engage in the decision-making process from the start of the project. For example, they were allowed to choose the preferred alternative and provide input in many ways. It might have given them the impression that they could control the decision-making process, making it more challenging for them to accept some outcomes. However, the directors of the project have always been clear that they ultimately make the decisions: *"The municipality has set the principles. To a certain extent, local residents are allowed to contribute ideas, but we ultimately make the final decision*."

4.2.3 Capacity for joint action

the Capacity for joint action is a series of elements that serve as the foundation for group empowerment in order to accomplish a shared goal. Joint capabilities emerge from cooperation efforts and operate as the connection between strategy and performance (Emerson et al., 2011). An example of capacity for joint action is actually the entire decision-making process. Every element of the project was openly discussed throughout such design workshops, *Rijnkade cafes*, meetings, and general meetings. Ultimately, a connection between strategy and performance was made possible as a result. However, it is a combination of four elements that makes it possible to establish that link and, consequently, the potential for joint action. It involves the following four elements: procedural arrangements, leadership, knowledge and resources.

4.2.3.1 *Procedural arrangements*

The variety of organizational structures and process procedures required to manage recurring encounters throughout time are included in procedural arrangements (Emerson et al., 2011). This especially relates to whether what was discussed throughout the decision-making process, for example, was formally documented or whether it was committed informally in the context of the Rijnkade project. According to respondent 8, everything discussed at meetings was always formally documented. This was done so that people would always know what happened to their query later on: *"Everything was formally documented, so people were also notified of that. They were also notified what was done with their submitted requirement/customer wish. Then they would get a message saying we didn't do anything with it or this and this is incorporated into the design. Well, that's how everything was handled."* Respondent 10 continues by stating that this was accomplished by employing the so-called KES, or customer requirements system. All information was accurately documented through

this system. However, respondent 10 also claims that occasionally sessions were overcrowded and that locals would then ask all kinds of questions. Occasionally, statements were made, and people naturally interpret things in the ways they wish to. So, while it's inevitable that promises will occasionally be made informally, these instances stand out: *"Sometimes you make promises to avoid discussions, eventually this will bite you in the ass."* Additionally, respondent 7 argues that written documentation like KES is useful so that the overview may be preserved. This makes it simple to continue the conversation at the following meeting. Respondent 7 also adds that it is crucial to formally document, but that this should be done in an informal setting. After all, this encourages participants to enter the discussion and express their thoughts in an open manner: *"In an informal atmosphere, because I think that's very important, because then you invite people much more to really just have an open conversation. Then what they really want really comes out. However, you have to document that formally."*

Finally, when several stakeholders held separate consultations to address different aspects, it would be challenging since the resulting degree of knowledge might be uneven. In order for everyone to be aware of what had been discussed, reports of this were also made and then brought to the general meetings according to respondent 13: *"Occasionally separate meetings were held, for example with entrepreneurs on the quay, but this was then fed back into the evening. Okay, guys, those people have their own interests. We talked to them separately and this and these are the important issues."* Furthermore, all stakeholders were actively involved in a process that required as much transparency as possible, as seen by the fact that all meetings were properly recorded, a system like the KES was utilized, and that everything that was addressed in different consultations was always reported back.

4.2.3.2 *Knowledge*

Aggregating knowledge and creating new shared knowledge are both necessary for collaboration (Emerson et al., 2011). It appears that internal and external knowledge are both involved in the Rijnkade project. The DFPP, for instance, provides external knowledge. According to respondent number 14, the DFPP provides the water boards with a lot of expertise. Two categories can be made out of this. Knowledge is offered in the areas of sustainability and spatial quality on the one hand, and water safety technology and innovation on the other as respondent 14 underlines: "*But we also facilitate in terms of knowledge and I'm in the engineering, knowledge and innovation department. This knowledge is then facilitated back to the water boards"* The project's willingness to incorporate stakeholders in various ways while also being open to external knowledge can be supported by the fact that a local resident had measured the river water level every Saturday morning for more than 25 years and recorded the results in an excel file. Additionally, he had created a model at home that allowed him to demonstrate how high water functions according to respondent 3:*"There was a gentleman and he went every Saturday morning. If he is still alive, he still does it, every Saturday morning at 10 o'clock he goes to measure the water level"* Respondent 3 additionally states that governments did not possess this information, but were nevertheless eagle to incorporate such valuable knowledge into the project. Furthermore, there was sufficient internal knowledge available in addition to the external knowledge according to respondent 12. This is due to the extensive local expertise and municipal involvement in the construction of the Jansbeek and earlier downtown revitalization. It would be the municipality in particular that would be a consistent factor: *"We had as a municipality, of course, like I said, a lot of area knowledge. This is due to that whole redevelopment of the inner city."* Respondent 9 continues by arguing that local expertise, or knowledge of the city and its surroundings, is therefore a municipal responsibility. The water board, on the other hand, is

better equipped to handle knowledge that is more technical in nature, such as knowledge regarding dam walls and quays: *"So knowledge about the city and the area. I think that lies more with us. Knowledge about techniques with dam walls and quays, that's more with the water board"* As a final note respondent 10 states that transparency is crucial in addition to external and internal knowledge. This guarantees that all stakeholders have the same degree of knowledge. However, not everyone engaged can have the same knowledge. Despite this, it is possible to share the same knowledge regarding project-related decisions. Respondent 10 also states that the environmental managers were primarily responsible for making transparency feasible. These served as the project team's direct link to the local residents. By doing this, the general public was kept up to date on the situation. This resulted in an equivalent level of knowledge regarding project-based decisions: *"Those environment managers are very useful, because that has been the direct line between the local residents and the project team"*

4.2.3.3 *Leadership and resources*

Four different positions can contain leadership which can be designated for the project. First, there is the role of sponsor, which can be filled by a municipality, a province, the DFPP, a water board, or a ministry. The principal sponsor is the DFPP, though according to respondent 5: *"No, the big investor is the DFPP which pays for 90% of all projects"* The convener's function is next. This encourages participation and helps to establish the ideal circumstances for cooperation. The municipality can be given this responsibility in particular because it makes use of the network of nearby stakeholders who live and work close to the Rijnkade. The facilitator position is the third leadership role. According to respondent 8 this serves as the collaboration's unbiased manager. The process manager the water board employed, who assisted in setting up meetings and gathering suggestions, can be given this responsibility: *"Or at least as long as it has an impact on the environment, we provide guidance for that. We do that by doing the process management."* The position of public advocate is the fourth leadership role. This is a person who promotes the interests of a specific group. An example of this would be the respondent who represented the APCG at the meetings. After all, the respondent represented the interests of the disabled. Respondent 19 states the following about this: *"My main area of focus is advocacy in the social domain and together with a colleague we also carry out accessibility for the disabled."*

It is not required to delve further into the topic of resources. Emerson et al. (2011), for instance, claim that there are just three sorts of resources, and the majority of them have already been discussed. First of all financial resources, it is irrelevant to continue this discussion because it is already evident where the project's funding comes from. Knowledge is the second type of resource. This has likewise been thoroughly examined and requires no further explanation. Time is the third resource type. According to Emerson et al. (2011), this refers to the amount of time stakeholders have to participate in the collaborative process. The fact that the project is being completed in stages makes this obvious. Furthermore, expectations for stakeholders are made very apparent.

4.3 Spatial quality

Spatial quality is complex phenomenon due to its widespread definition (Acre & Wyckmans, 2014). According to Sternberg (2000) it is a good design, while Conroy and Berke (2004) define it as "good planning process" and Whyte (1980) as the degree which a space is attractive, comfortable and accommodating to its users. These are only a few examples of the meanings given to the concept by various academics. However, the data obtained through the interviews will demonstrate not only the meaning of spatial quality within the Rijnkade Arnhem project but also its function. This section will (1) delve deeper in the underlying notions behind the framing of the concept (2) and then what design elements and strategies for spatial quality were used during the Rijnkade project. The ambition document constituted by the municipality of Arnhem will act as a criterion. By comparing qualitative interview data with the criterion, it can be examined whether the design elements and strategies for spatial quality as described in the ambition document are actually included in the project. Additionally, this illustrates whether the spatial quality has been improved. At the end of this section it is therefore possible to formulate answers to the third and fourth sub-question:

- *How was the spatial quality framed during the Rijnkade Arnhem project?"*
- *To what extent was spatial quality improved during the Rijnkade Arnhem project?*

4.3.1 The framing of spatial quality into the Rijnkade project

During the interviews it became clear that the spatial quality was framed into the project mainly by creating a connection between the southern inner city and the Rijnkade. It is crucial to take a quick glance back in order to understand why the relationship between the two parts of Arnhem was established. At first a design idea for the southern city centre was created in 2014 by an architectural firm. Years later, the Rijnkade project was carried out by the same organization. According to respondent number 16, the landscape architect was successful in turning the municipality's idea into a physical design. He was therefore contacted for Rijnkade project as well. He was also already familiar with the perspective of the municipality, making it an easy decision: "*He led us through the southern portion of the city, and we also suggested him to the water board. When we saw that you already have someone who was familiar with our perspective, we began working with his design."* Respondent 9 continues by arguing that the Rijnkade appears to have been a long-standing aim of the municipality as it was originally included in the initial plan of the southern city centre as an ambition; however, at the time, no provincial support was given for this. Because it was clearly obvious that the water board would eventually need to improve that Rijnkade, the ambition was then put on hold: "*He once sat as an ambition, the high Rhine quay was once also in the inner city plan as an ambition, but we didn't get a subsidy for that from the province at the time. So that didn't happen either, so then we just put a hold on it."* Following lengthy negotiations between the municipality and the water board, the cherished wish was eventually realized. They had jointly resurrected Jansbeek in the southern city centre, which is why they were holding this consultation in the first place. It was mentioned during that conversation that the Rijnkade would eventually need to be addressed. According to respondent 16 the aim to connect the Rijnkade with the city centre was already mentioned earlier. As a result, the water board started working on the Rijnkade early: *"And well, we wanted to tackle the Rijnkade too when we were going to tackle that whole southern city centre, But postponed that Because we knew even then that the water board would have to tackle that quay at some point."*

Additionally, according to respondent 5 the municipality made an effort to advance the project from the viewpoint of nuisance. Otherwise, residents would have to endure the filth for an extended period of time: *"Yes and when they started working on the inner city and then it's finished and two years later they start that whole rebuilding thing again. That's why it is smart to continue with building."*. Respondent 20 continues by arguing that the downtown project was already operational, so everything was well-organized. The water board was persuaded to ride along because of this: *"Yes, and then they thought of: 'but wait a minute, the municipality is working on the whole southern city centre, has a project that has a quality team. Actually the whole administrative part. Everything is well organised.' It's a bit easier for us to also jump into that now to pick up these cards now."* Respondent 16 adds to this that another factor that might have played a role was the fact that the water board required the municipality to complete the destination plan process: *"They also had to go through the destination plan procedure didn't they? So they needed us to do what they wanted to do."*

The quotations above demonstrate that the municipality made a deliberate effort to advance the Rijnkade project. This is because the southern city centre's reconstruction had already improved the quality of the area. As a result, they desired to establish a connection with the Rijnkade, which would subsequently improve the area as a whole and frame the spatial quality in the surrounding area. It was desired that the visitors of the inner city would see the Rijnkade as an extension of the city, a part of the public space that is equally accessible. The creation of a connection between two independent areas is possible in several ways. The first and perhaps most obvious way to do this is through using the same materials according to respondent 9: *"The urban planning vision and design of the whole southern city centre has to continue a bit, right? So we actually already had the colour of the clinkers, the colour of the concrete bands. Well, then basically all that was already fixed, because it's just one result of that earlier story."* In contrast with respondent 9, respondent 2 states that in order to create a connection between the Rijnkade and the city centre mutual visibility needs to be created. This entails relocating, changing, or removing 'obstacles' that effect the mutual view. A part of the quay wall, for example, was demolished at one point and replaced with a green embankment. This enables a view of the river from the city, which creates connectedness: *"For example at the Nelson Mandela Bridge, we said if we're going to make a green embankment there too. Then you have; 'and you take away a lot of that stone wall and you make a green embankment there, right? That gives more coolness anyway. You make it greener, but also the view on the river is more beautiful."* Respondent 6 continues by arguing that there are multiple ways to create a connection. For example, a connection has also been established by extending the Jansbeek from the city centre to the Rijnkade, where it flows into the river. To shape the connection between the city and the water, a glass panel has been placed at the point where the Jansbeek drains. As you travel from the city centre to the Rijnkade, you will have a clear view of the water: *"If you stand here, and you can't see this here now, but there is a glass panel in between, so that means if you stand here you look up through that Jansbeek to the city centre."*

However, the municipality had desires to develop a connection based on visibility at various sites according to respondent 7. To do this they intended to dismantle as much of the wall as they could because it is required to go up some stairs before the water becomes

visible. This is of negative impact on the connection between the city and the Rijnkade, hence the municipality wanted to remove the wall at certain points. However, this idea could endanger the water safety. As a result, at the level of a walking route from the city, *coupuren* have been installed, only during high tide do these rise. So there is always a visual link to the city centre at all other times: *"That has been a very hard demand of ours. Such coupuren, that is a very image-defining aspect. Which technically means a major task for the water board, but that is one of those aspects through which, so to speak, that connection is, yes, soon to be improved."* Additionally, wide staircases will also be constructed at a number of key locations. It is possible to calmly stroll down to them and have a comfortable seat while overlooking the Rijnkade. These will be spots that will make the river easily accessible according to respondent 7: *"Now there will soon be in some really strategic places, very nice stairs and very open stairs. Lazy stairs where you can sit where you can walk down very quietly."* Respondent 17 continues by stating that: *"Soon all those will be really cool places where you can walk to the water in a nice way and so that yes that contact between the lower quay and the upper can is very much there."*

Figure 8. The Jansbeek (Haverkort, 2021)

Furthermore, places or objects that should establish a connection are called sightlines. These were thus incorporated into the project plan with the aim of creating a direct link between the Rijnkade and the city centre. Another example of a sightline is the crane on the low quay according to respondent 8, after all, it should attract visitors from the city to the Rijnkade. Additionally, a sighline from Roermond Square to the water has been established from the transformed terraces: *"That positioning of the crane was one of them, because yes, it has the function of continuing to attract people from the city to the Rijnkade. And there are more lines of sight, such as the terraces as a line of sight from Roermondsplein to the water. The architect was very emphatic about getting that ramp to work."* However, making connections did not happen by chance. First, principles were developed in cooperation with the quality team. This is a team that has been assembled for the Rijnkade project, and they are reviewing it based on their knowledge and expertise. Such a team includes an architect with a focus on cultural history, an urban planner and a landscape architect. They advise on matters relating to spatial quality, also how it should be framed. Using a quality team was a strategic move as they are not personally involved and can therefore take a look at the project from an unbiased perspective. Furthermore, each member has their own area of expertise according to respondent 4, which is especially valuable in developing ways to connect the city centre and the Rijnkade: *"So we jointly give integrated advice based on all those aspects I just mentioned. An opinion and in particular a conversation about spatial quality."* Respondent 9 states in addition to this the following: *"We also have a quality team within Arnhem. Quality team southern inner city and they also reviewed this plan throughout. Well, the spatial quality and the surroundings. And well, what should it look like?"*

4.3.2 Design elements and strategies for spatial quality

The ambition document constituted by the municipality of Arnhem sets out in the left table the six ambitions for spatial quality and in the right table how spatial quality should be physically expressed in the project (Gemeente Arnhem, 2018). This paragraph looks at whether the spatial quality has been improved. This will be accomplished by determining whether the project plans accurately reflect the elements in the ambition document. The first

ambition is about the transformation of the Rijnkade to a residential area. This impulse should be achieved through creating additional space for terraces and for the planting of trees so that the residential quality can be improved (Gemeente Arnhem, 2018) First and foremost, it was possible to create additional space for the terraces. However, the sidenote was that a portion of the space would be at the expense of the river. In the context of room for the river, this is obviously not acceptable. Respondent 7 states that this was inventively solved by creating a green embankment at the Nelson Mandela Bridge that allowed additional space to the river at a relatively short distance. This means that the river has the same amount of room as beforehand, allowing the various stakeholders to agree on enlarging the terraces: *"Basically, the terraces wanted more space, but that constrains the river. Well, that is precisely what you want don't want, as the river rather needs more space. That is why a green embankment has already been created in one place. So this creates more room for the river elsewhere"* Respondent 6 adds to this that this reconstruction is beneficial in multiple ways: "*This creates space on the one hand and more greenery on the other."* Respondent 6 continues by arguing that there are, however, some conditions attached to this reconstruction: "*We said to Rijkswaterstaat, suppose we take 5.5 m from the river so that those terraces can get bigger, but we can compensate this elsewhere, we can compensate this again in 1 km, is this possible? Then they did a calculation and said: "Yes, but that has to be in the same system. You can't compensate at Zwolle, you have to compensate in that system". That subsequently worked out and I still think that's one of the best things about Rijnkade."* This concise summary of quotations give a glimpse of the uniform mindset of the respondents in terms of widening the terraces and what the benefit is. As for the planting of trees, its importance was also stressed several times. Respondent 2, for example, stresses the cultural important of greenery: *"And indeed, to boost the image quality even more, we have even... yes during the Second World War already, but also afterwards, a lot of trees that used to stand there have fallen and we have put back additional Linden trees in the new plan, so where they used to stand, we have also put back new ones."* This is in contradiction with respondent 6 who attributes a different importance to greenery: *"Greenery is the only way to counteract heat stress and flooding due to excessive rain. So you have to make sure you keep water storage in the area. Well, so you need trees for that, in other words, from content and from studies, we could often bridge those contradictions and thus demonstrate the importance of planting and preserving enough trees"*

The second ambition encompasses the preservation of monumental value and an attractive public space. There are several ways to accomplish this. Respondent 13 states that this can be achieved by reusing stones: *"At least we have managed that it will be covered again with the same sandstones so that natural stone will be reused and in thinner slices it will be placed back on the Rijnkade wall, so basically l will keep the same look as the existing one."* Respondent 2 agrees with this this notion: *"The basalt that is there now is also coming back. A lot of the paving stones on the high quay are also coming back, so we have also very much looked at sustainability."* Respondent 20, on the other hand, gives another explanation of how the monumental value can be preserved: "*Then we have some monumental trees. Monumental linden trees, we just want to preserve those, so yes less than it is now we don't accept."* Respondent 18 continues by arguing that actual monuments have also been preserved for the benefit of the monumental character of the area: *No, no, that's the best place on the quay, because if you look from Rodenburg street, you can see that crane. I don't think anyone really cares, but I see a monument in that thing."*

The third ambition is mainly about maintaining the Rijnkade as a robust and continuous city frontage. The Rijnkade wall should only be disrupted when it's highly beneficial for the project as a whole. An example of such an disruption is that on a number of strategic points a connection between the low and high quay should be accomplished. Respondent 13 gives the following explanation for how the connection between the two separated parts of the Rijnkade would increase: " *The stairs and those transitions to the quay are very briefly present now, but soon they will all become really cool places where you can walk to the water in a nice way, so that the contact between the lower quay and the upper canal is very good."* Respondent 13 adds to this that another example, where the disruption of the robust Rijnkade wall was deemed necessary, was where the green embankment was created: "*So we went forward at the terraces, we demolished some driveroads and exits and we made an embankment at that Nelson Mandela bridge so that we could give back space to the river elsewhere."* However, at certain spots where the Rijnkade wall is interrupted, it is desired that it will be extended during the Rijnkade project. This happens for example because these steps are used for urination, this does not benefit the social safety of the area. There are also certain drive roads and exits that also offered accessibility to larger traffic like cars. It is mainly desirable to remove those as it creates a nuisance according to respondent 6: "*Yes towards the city centre yes, the number of driveways and exits has actually been reduced. Would you think, yes, why do that? But those are often piss spots. So you also try to increase social safety by developing fewer drive roads and exits that are then also used more."* Respondent 8 agrees with the fact that there is a lot of nuisance: "*We also told the municipality we had to make it even more traffic-calm in terms of traffic, so we also removed an drive road and exit that caused inconvenience."* In summary, drive roads and exits will disappear in certain spots so that new drive roads and exits can be created in strategic places. This therefore means that the Rijnkade wall will be interrupted at certain spots, but on the other hand it will be extended again at other places. By not only giving up pieces of wall, but also adding pieces of wall elsewhere this is advantageous for maintaining the continuous and robust Rijnkade as a city front as respondent 7 underpins with his claim: *"There were now... there were now also a couple of exits for cars and yes, you don't really go down there as a city visitor. Now there will soon be on some really strategic places, very nice stairs and very open stairs. Lazy stairs where you can sit where you can walk down very quietly. Now in the current design there are some very short stairs. Yes, those are used by the homeless as toilets so they have to be cleaned daily. That's not where you go as a city centre visitor when you want to visit te Rijnkade."*

The fourth ambition highlights the materialisation of the Rijnkade wall. According to respondent 2 this must be accomplished by using basalt that is of high quality, durable and fair: "*For example, the basalt that is there now will also return. A lot of the paving stones on the high quay are also coming back, so we have also very much looked at sustainability. You can also do this for the execution, for example; we challenged the market to do this with as few emissions as possible. And now we have a combination of contractors who are going to do zero emission, so everything electric."* Respondent 13 argues that at all times basalt should be prioritised over other materials. It should be diverted only when there is no other option. This is also exactly what has happened: "*I think that's what everyone knows about Arnhem just that basalt, that tough look of that Rijnkade wall and yes that will remain later. Also that it is a bit crooked with a kink in it. Well, all those kinds of elements will remain. We keep that old look by just reusing the same.*" However, according to respondent 15 it even went a step further since sustainability was found not only in reusing the basalt, but also in having the reused material applied in a zero emission way: "*One of the sustainability aspects is to work with power tools as much as possible, which does complicate things. Especially since the*

project was awarded to the contractor who could offer both the highest fictional and actual discount. This is quite a promise." Therefore, sustainable development is an aspect that contractors were specifically selected on. The contractor responsible for applying the old basalt to the new Rijnkade wall not only promised the highest actual discount, but also the highest fictional discount. Whether the contractor will succeed in this will only become clear on a later moment during the realisation phase. However, the promises and first steps towards sustainable solutions are already a reality.

The fifth ambition is concerned with the detailing of the Rijnkade wall. The aim is to develop a Rijnkade wall where extreme kinks and bulges are no longer present. In addition, the slope angle is important for the experience; a perpendicular wall is perceived as unpleasant. If possible, space should also be created for nature development between joints and for detailing on the Rijnkade wall so that it looks less massive. Furthermore, according to respondent 8 the reason that kinks and bulges are no longer desired is that it provides space for all sorts of unsavoury pursuits that benefit social safety and the high quality of residential stay: *"There was also a lot of trouble of heroin use and all unsavoury things in the corners of the barrier. Well in the new barrier we have to avoid that too, it just has to be an attractive barrier. Shady corners we should not have, it should be a nice open and green light barrier."* Respondent 10 adds to this that another reason for this is more economical of nature. A straight wall entails less cost than one with all kinds of different heights: "*You can imagine that making a wavy Rijnkade wall is more expensive than making a straight Rijnkade wall. Now does that height difference belong to the project, or not?"* As for the space for natural development between the joints, despite being the municipality initially being against it, this was still included in the project. However, respondent 6 states that despite the fact that in the context of water safety it was not considered acceptable by the water board, eventually vegetation would develop between the joints of the basalt stones anyway:*"For instance, the municipality wanted more greenery in that wall as part of the image quality plan. The greenery had to come back in that wall with basalt blocks. However, if this greenery gets wet at high tide, all the stones get loose and you have a kind of domino effect. There really was still some discussion. In the end, concessions were made here and there and now greenery is allowed to grow between those basalt blocks."* Respondent 20 adds to this that covering the wall is also done in one spot by means of Portuguese granite so that it appears less massive: " *The urban planner figured, let's do that in Portuguese granite as well, because that just looks much nicer than having an ugly concrete wall at the back. Well then you have the street profile in Portuguese granite and then you also have a wall in Portuguese granite. This is much more detailed which makes the wall look less like a concrete block*." However, there is no indication that this has been done over the entire length, but by reusing the granite in other places, as became clear earlier, more detail has also been provided.

As for the last ambition; the Rijnkade stairs and ramps as link between the river and city centre. In the previous paragraph, it was already made clear how a link between the southern inner city and the river was created by means of stairs and ramps. This was also already discussed during the explanation of the third ambition in this paragraph. It is therefore not necessary to elaborate deeper into this sixth and final ambition.

Before discussing whether the spatial quality was improved, it was necessary to understand how the concept was framed. It became evident that this was accomplished by establishing a link with the city centre, which had been renovated several years before. As a result, the overall quality of the area would improve. Whether the connection was created on the basis of mutual visibility or by using the same materials is irrelevant, the essence is that spatial quality could be framed in the project by establishing connections between the

southern inner city and the Rijnkade. Subsequently, it can be determined by contrasting the qualitative data with ambition document of the municipality of Arnhem, whether the spatial quality of the area was improved during the Rijnkade Arnhem project. Considering the project has accommodated each ambition, it can be proven that the spatial quality have been improved during the Rijnkade Arnhem project. Therefore, in the light of these new insights, it is possible to formulate an answer to the sub-questions: "*How was the spatial quality framed during the Rijnkade Arnhem project?"* and " *To what extent was spatial quality improved during the Rijnkade Arnhem project?*

5. Discussion

Within this discussion section first of all the theoretical and practical implications will be discussed. After that, the methodological and theoretical limitations of the research will be provided and finally the recommendations for future research will be given.

5.1 Implications

This research has overall contributed to the existing knowledge on collaborative governance applied to the improvement of spatial quality in a dike strengthening project. The collaborative governance process has been implemented for the first time to improve the spatial quality during a dike reinforcement project. The study's title and the research topic and literature all imply that collaborative governance can enhance spatial quality in the Rijnkade area. The outcomes support this assumption. The majority of the stakeholders in the Rijnkade Arnhem project have favourable memories of the decision-making and consequently collaborative process. Additionally, they claim that the collaboration improved the project. Not all stakeholders, however, are pleased with how the collaboration turned out, but this is not taken into consideration in the evaluation because it may be argued that this is their own responsibility.

Collaborative governance can be implemented in upcoming DFPP initiatives with the insights gained from this study. After all, this facilitates a qualitative impulse in the region where the collaboration occurs. Additionally, this project can serve as a model for other future projects in the context of inclusiveness. This is due to that all social groups in society had equal access to the decision-making process. A holistic approach to the project has resulted from the active participation of minorities and other groups that are typically underrepresented in the collaborative process. This is advantageous since it considers the project's economic, social, and ecological elements.

5.2 Limitations

In this section first the methodological limitations will be discussed and secondly the theoretical limitations of this research.

This study focused on the Rijnkade Arnhem project because, as its name implies, it is one project and thus a case study. Given that it is frequently challenging to generalize the results, this can be deemed as a first limitation. However, given that this project is a part of the overarching DFPP, it might be achievable. Up until 2050, there will be a large number of

projects of this type that are now in progress. It is not the intention, even though it is theoretically possible, to broadly generalize the findings. However, it would be great if future DFPP projects could selectively absorb lessons from the Rijnkade project. A second limitation is the necessity of translating a sizable portion of the qualitative data from Dutch to English. The issue here is not the duration of time. The fact that some subtleties were lost in translation is primarily less advantageous. Due to this, the highest level of precision was applied. What could be seen as a third methodological limitation is the fact that staff members of the Municipality of Arnhem and the Rijn and Ijssel Water Board were interviewed. This could lead to a bias despite the fact that it was necessary because they are part of the stakeholders of the project. Given that these two authorities are in control of the Rijnkade project, it seems to reason that they would be less inclined to criticize what they are in charge of. It is obviously helpful that the other stakeholders feel positively about the project, but it is also important to take the position of the municipality and the waterboard into account.

The first theoretical limitation during this study is the understanding of the concept of spatial quality. It is crucial to understand exactly what is meant by "spatial quality" in order to appropriately interpret the research findings. It might be challenging to define spatial quality in a clear and concise manner due to its complexity and broadness. Due to the combined meaning of "spatial" and "quality," the concept can be labelled as broad and complex (Acre & Wyckmans, 2014). Due to the respondents' diverse backgrounds, there were a variety of ways that the term "spatial quality" was interpreted. Consequently, the study's findings can become inconsistent. By carefully defining and elaborating on the concept of spatial quality, efforts were made to avoid this. This way, an effort was made to clarify the idea for respondents whenever necessary. Additionally, more attention was given when desired so that finally, and to the greatest extent feasible, every respondent understood the concept. This will allow for a more accurate interpretation of the study and the drawing of conclusions based on reliable findings. Furthermore, a second limitation regarding the theory is the integrative framework for collaborative governance. This is due to that the framework is very extensive since the elements have a lot of overlap. Therefore, it is difficult to determine which components of collaborative governance actually strengthened the other components.

5.3 Recommendations

A recommendation or future research concerns the research method. Conducting interviews has been used in this study to acquire qualitative data. The respondents were chosen because they have a strong interest in and are educated about the subject. The respondents frequently represented a broader group. In the future, it could be beneficial to contact more people involved in the collaborative process. A survey might be used to do this. More information would be gathered in this manner, allowing a larger image to be painted.

Investigating how spatial quality may be included in dike reinforcement initiatives in other cultural contexts might be another suggestion. Now the emphasis is on a city, that is situated in a country, whose identity is closely tied to water. Therefore, it could be intriguing to conduct research in another nation in order to determine which cultural values and norms have an impact on how dike reinforcement projects are developed and carried out, as well as how the spatial quality can be improved in such a context.

Additionally, after carrying out this research, it is illustrated how cross-sector collaboration served to ensure spatial quality in this particular HWPB project. Despite the fact that during this study the emphasis was on the Rijnkade Arnhem project in particular, it does offer insights that might also be beneficial in the larger context of dike strengthening projects.

Therefore, by conducting this research a small contribution to DFPP projects that still need to be implemented have been made. Furthermore, the Arnhem Rijnkade project's research has taught us important insights that can be used for other initiatives. First, the study emphasizes the value of comprehensive stakeholder interaction throughout a project's life cycle. To foster a sense of ownership and alignment, this entails regularly soliciting input, incorporating community opinions, and keeping open communication lines. The study also emphasizes the critical value of adaptive planning, which entails making allowances for changes in conditions and unforeseen difficulties. This project planning flexibility enables prompt adjustments, reduces disruptions, and maximizes project results.

6. Conclusion

A in depth single-case study methodology was used for this research. This has made it possible to provide an answer to the following research question: "*How did collaborative governance enable the integration of spatial quality of the area in the dike strengthening project of Rijnkade Arnhem?"* as well as the corresponding sub-questions. The objective of this research was to analyse the Rijnkade Arnhem project in order to highlight the contribution of collaborative governance for the integration of spatial quality. In this manner, it was anticipated to illustrate that, through the use of collaborative governance, an element, such as spatial quality, may be effectively improved during a dike strengthening project, consequently enhancing the area's quality. The data for his research was collected by conducting document analysis and interviews.

In this chapter answers to the three sub-questions will be given. This will enable to give a final conclusion of this research afterwards.

6.1 Collaborative governance and spatial quality

It was possible to reconstruct the collaborative process that occurred at various points during the decision-making process using document analysis and by conducting a number of interviews. This makes it possible to formulate an response to sub-question one and two. Which dynamics and components made the integration of spatial quality possible is the core of the first sub-question. To begin, it is necessary to zoom out for a moment and examine the conceptual framework developed for this study. First of all the institutional environment of the DFPP that both initiate and control the dike strengthening initiatives. Apart from having an impact, it also determines the progression of the collaboration. The CGR, or collaborative governance regime, functions within this institutional environment. This is the public decision-making system in which cross-sector collaboration is the dominant pattern and should eventually result in actions. Within this CGR are three interactive components that together form the collaborative dynamics. Collectively, these components produce actions, or more precisely, the decision on the preferred alternative. In the context of this research it can be seen as the implementation of the physical elements as described in the ambition document of the Municipality of Arnhem. The desired outcome, which in this case is the improvement of the spatial quality, is pursued in this manner.

Using the data acquired from the interviews, it is possible to determine which dynamics and elements within the CGR were the most emphasized, in relation to the

ambitions of spatial quality, during the decision-making process of the Rijnkade Arnhem project. The results indicate that collaborative elements were perceived as insufficient on only three occasions. However, the notion of mutual understanding could be discarded. This is substantiated through extensive argumentation in the results section. However that the two remaining elements of discovery and legitimacy were perceived as insufficient could be justified, implying that there is still territory to be gained there. Nonetheless, in response to sub-question one:*" Which collaborative dynamics and elements supported the integration of spatial quality in the Rijnkade Arnhem project?"* can be answered that all collaborative dynamics and associated elements contributed to the improvement of the spatial quality. Two elements have only minor flaws that should be addressed in future research. This information in turn enables for the formulation of an answer to the second sub-question: *"What were the key challenges or barriers regarding the collaboration that arose during the exploration and plan execution phase of the dike strengthening project and how were they addressed?"* The challenges and barriers stem from the elements of discovery and legitimacy. In terms of substance, both elements came down to the same thing: accessibility only received attention when it was brought up during meetings. Despite the fact that it was addressed at the time, this was not seen as acceptable, as designers should always create for everyone. It was also suggested that accessibility is a must rather than merely another interest.

6.2 Spatial quality

After discussing the collaboration dynamics, elements, and challenges affecting the successful integration of spatial quality, the first and second sub-questions could be answered: (1) *Which collaborative dynamics and elements supported the integration of spatial quality in the Rijnkade Arnhem project?* And *(2)"what were the key challenges or barriers regarding the collaboration that arose during the exploration and plan execution phase of the dike strengthening project and how were they addressed?"* This has provided the foundation that allows us to explore the underlying assumptions of the framing of spatial quality and what design elements and strategies were used during the project. This in turn allows the formulation of an answer to the third sub-question (3) "*How was the spatial quality framed into the Rijnkade Arnhem project?"* and the fourth sub-question (4) "*To what extent was spatial quality improved during the Rijnkade Arnhem project?"*

It became clear that by creating a visual connection between the Rijnkade and the city centre the spatial quality was framed into the project. This connection was desired so that a new high-quality area could be developed. The motive is that several years ago, the redevelopment of the southern city centre was completed which resulted in an upgrading of the public space. To allow the deprived Rijnkade to also flourish, it was thought to create a connection with the southern inner city. By establishing this link it was desired that the two separate area's would melt into one what therefore also would be beneficial for the quality of the living environment.

Thus, spatial quality was framed in this project by forging a connection. This connection was advantageous as it permitted the growth of a high-quality area. However, within the framing, it is still required to establish certain physical elements with regard to spatial quality; otherwise, the desired area's quality impulse will be lacking. By means of the qualitative data and the Municipality of Arnhem's ambition document it could be determined that spatial quality was physically molded in the Arnhem Rijnkade project.

These perceptions allow for the formulation of answers to the remaining two sub-questions: "*How was the spatial quality framed during the Rijnkade Arnhem project?"* and

"*To what extent was the spatial quality improved during the Rijnkade Arnhem project?"* Specifically, by establishing a link between the southern city centre and the Rijnkade spatial quality was framed into the project. Along with being framed, it was also completely improved during the Arnhem Rijnkade project as each component from the ambition document came to fruition.

6.3 Final conclusion

This study has enriched the body of knowledge regarding collaborative governance and the integration of spatial quality in a dike strengthening project. Answering the sub questions allowed for the formulation of an answer to the research question: "*how did collaborative governance enable the improvement of spatial quality of the area in the dike strengthening project of Rijnkade Arnhem"?* The cyclical and iterative interactions of the components of collaborative dynamics - principled engagement, shared motivation and capacity for joint action -, are at the core of the collaborative process. The process is collaborative when these elements are observable. Furthermore, this results in "decision on the preferred alternative," which in turn leads to the improvement of the spatial quality. Since the elements that were included into the Rijnkade Arnhem project could be found in the Municipality of Arnhem's ambition document, it was demonstrated that the improvement was successful and therefore resulted in the desired outcome of "improved spatial quality." Overall, collaborative governance managed to successfully improve spatial quality into the Rijnkade Arnhem dike strengthening project. This was accomplished through the use of an open, inclusive strategy, the development of a common understanding of spatial quality, and the participation of all stakeholders involved. As a result, collaborative decision-making emerged. In accordance with the values and requirements of the community and the environment, this led to a well-balanced and aesthetically pleasing dike strengthening design.

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