Cooperation between (public) stakeholders in infrastructure projects

What lessons can we learn from the experiences of partnerships between a project organization and public stakeholders?

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Colophon

Title: Cooperation between public stakeholders in infrastructure projects: What lessons can we learn from the experiences of partnerships between a project organization and public stakeholders?

Description: Qualitative research to the cooperation and collaboration between public stakeholders in Dutch infrastructure projects.

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Abstract

The concepts of partnering and collaboration have gained increasing attendance in infrastructure projects. Despite a growing amount of literature on the concepts of partnering and collaboration, knowledge of public-public partnerships is still limited. Multiple researchers have studied public-private partnerships, where the collaboration between the client (often a public authority) and the market (e.g. construction firms or consortia) has been studied. However, literature on public-public partnerships, where the collaboration between the initiator or project organization and public institutions (e.g. municipalities and provinces) has been studied, is still scarce. Therefore, this thesis will focus on public-public partnerships in infrastructure projects in the Dutch context. We have chosen to study the Dutch context, because Rijkswaterstaat (the executive agency of the Dutch Ministry of Infrastructure and Water Management) is transitioning from a sectoral perspective towards more inter-organizational collaboration.

We focused on two main Dutch infrastructure projects – Aanpak Ring Zuid and the Afsluitdijk – where public cooperation encountered positive and less positive experiences. The institutional setting, communication, and trust are used as indicators in a case study research to analyze public-public partnerships in these projects. The focus was on examining the collaboration between the project organization and the public stakeholders (e.g. municipalities, provinces, etc.). Data were collected by doing literature research and by conducting semi-structured interviews. The main conclusion of the thesis is that continuity, informal communication and the understanding of stakeholder's interests are crucial when it comes to cooperation in infrastructure projects.

Key concepts: collaboration, institutional setting, communication, trust.

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1. Introduction

1.1 Background

Rijkswaterstaat is the executive agency of the Dutch Ministry of Infrastructure and Water Management. Most of the Dutch national infrastructure is managed by Rijkswaterstaat. This includes not only 'wet' infrastructure, e.g. flood protection and managing waterways, but also 'dry' infrastructure, e.g. the maintenance of highways and transport infrastructure. In the late 19th and early 20th century, the Rijkswaterstaat engineers were considered to be the experts within the field of 'wet' and 'dry infrastructure. As a consequence, highways and flood protection structures were designed within a top-down, technocratic process.

This top-down, technocratic process became heavily debated from the 1970s onwards. Environmental movements began to gain attention and support, together with the shaping of the New Public Management ideology. These movements questioned the contemporary style of management within the government and Rijkswaterstaat and demanded more effective and efficient management. This societal pressure resulted in a transformation within Rijkswaterstaat where biologists and ecologists were hired and efficiency measures were implemented (e.g. the experimentation of public-private partnerships). However, the technical expertise and technocratic culture remained dominant in the 20th century.

Multiple budget overruns, poor management, and systematic fraud in the construction sector (which Rijkswaterstaat had failed to notice) caused enormous pressure on an additional transformation of Rijkswaterstaat at the beginning of the 21st century. The purpose of this transformation was to cease the policy-making of the duties of Rijkswaterstaat and to transform the organization into a public-oriented policy implementation agency. Its focus shifted towards the users of the main networks, i.e. car users (Van den Brink, 2021; Veenswijk, 2021).

It is important to recognize that projects are not executed in a vacuum. On the contrary, infrastructure projects are realized in a complex, dynamic environment. Van den Brink (2021) describes the main challenge for Rijkswaterstaat as: 'to increase its public legitimacy in both the 'wet' and 'dry' domain. It seeks to do so by incorporating elements of the democratic governance logic in its deep-rooted technical-rational and newly embraced managerial cultures.' (Van den Brink, 2021, pp. 257).

Rijkswaterstaat is not an exceptional case in project management literature regarding the transformation towards inter-organizational collaboration. Interorganizational collaboration within a project format comes with multiple challenges. First of all, projects are known to be unique endeavors, often not similarly done before. The temporal nature of projects together with the variety of actors involved make it challenging to create a collaborative environment (Dietrich et al., 2010). Galvin et al. (2021) add that megaprojects, like infrastructure projects, are typically characterized by their gigantic scale, long-time frames, and uniqueness. These factors make megaprojects complex and increase the levels of uncertainty and increase the need to collaborate between the actors involved. Otherwise, opportunistic behavior may start to evolve in the project and will eventually influence the project outcomes (Galvin et al., 2021).

There is an increasing need to collaborate in infrastructure projects (Galvin et al., 2021). According to Van den Brink (2021), this challenge is felt by Rijkswaterstaat in the Dutch context, because it desires to increase its public legitimacy. Collaboration with other public stakeholders is needed to reach this public legitimacy. Therefore, this research will focus on cooperation between public stakeholders in Dutch infrastructure projects.

1.2 Aim and research questions

The aim of this research is to gain understanding of the cooperation between Rijkswaterstaat and public stakeholders, and to learn from this understanding in order to come with recommendations. This research also focusses on the lessons that can be drawn from this observation.

The following research question has been formulated:

- ***What can we learn from the current way of collaboration between the project organization and the public stakeholders in the realization phase of infrastructure projects?***

In order to answer this research question properly the following sub-questions have been formulated:

1. *What are indicators for collaboration?*
2. *What does the public-public partnership currently look like in the context of Rijkswaterstaat?*
3. *Are there differences and/or similarities in the public-public partnership between Aanpak Ring Zuid and the Afsluitdijk?*
4. *What lessons can be drawn related to the public-public partnerships from both projects?*

1.3 Societal Relevance

There is a pressing call from society to be involved in infrastructure projects (Van den Brink, 2021). Rijkswaterstaat, as the executive agency of the Ministry of Infrastructure and Water Works, has to deal with and is responsible for the involvement of environmental stakeholders. As mentioned before, the transition from a technocratic organization towards a more collaborative and inclusive environment is still a hot topic at Rijkswaterstaat (Van den Brink, 2021). This is caused by a shift from line-oriented infrastructure planning, where road infrastructure is seen as something that can be developed in a vacuum, towards an area-oriented approach in Dutch infrastructure planning. Area-oriented planning acknowledges that road infrastructure should be developed by taking the spatial and societal environment into account to create sustainable and enduring (road) infrastructure. Collaboration between diverse (public) stakeholders with diverse interests is believed to be essential to creating this sustainable infrastructure and creating spatial synergies (Heeres et al., 2012).

This research contributes to practice and society by studying the current collaboration and involvement of the representatives of the societal environment. Does the project organization involve and collaborate with public stakeholders? In the case the collaboration is missing, what indicators or mechanisms are mentioned that cause this lack of collaboration? When the collaboration is present, what does it look like? In what way has collaboration been established between the project organization and public stakeholders? The results of this study can be used for current and future projects to critically review the collaboration between the project organization and environmental stakeholders.

1.4 Scientific Relevance

As described in the former section, the challenge of Rijkswaterstaat is to develop a more sustainable infrastructure by collaborating with (public) stakeholders (Van den Brink, 2021). Governmental institutions in other countries are also experiencing the challenge of changing societal needs in infrastructure projects (Wegrich et al., 2017). There is already a vast amount of literature about the involvement of private organizations and businesses in the planning process, see for example Demirel et al. (2017). Cases of public-private partnerships have been studied several times in the Netherlands (e.g. Demirel et al., 2017; Lenferink et al., 2013; Verweij et al., 2020). However, literature has focused little on public-public partnerships, i.e. the partnerships between Rijkswaterstaat and municipalities and provinces. This thesis will contribute to the academic debate by providing knowledge about public-public partnerships within Dutch infrastructure development.

1.5 Thesis outline

This thesis starts by introducing the background and the aim of the research in Chapter 1. Chapter 2 contains the theoretical framework where indicators for collaboration will be drawn from the systematic literature review. This will be followed by the conceptual model and testable hypothesis. The methodology section is situated in Chapter 3, where the research methods, data gathering, and ethical considerations will be explained. Chapter 4 contains the results and findings. Chapter 5 contains the analysis and discussion and is followed by the conclusions and recommendations in Chapter 6. The thesis will finish with the final Chapter 7 where reflections and limitations will be stated.

2. Theoretical Framework

To answer the research question, it is important to define indicators for collaboration from the literature. This chapter will describe and define the concept of collaboration and the indicators retrieved from the literature.

2.1 (Project) Collaboration in literature

'Collaboration is a recursive process where people or organizations work together in an intersection of common goals by sharing knowledge, learning, and building consensus.' (Dietrich et al., 2010, pp. 60). Relationships between individuals and organizations are established within collaborative processes. In general, strong relationships are accompanied by mutual trust and commitment (Galvin et al., 2021). However, collaboration within project-based industries comes with several challenges. Firstly, projects are temporary, which hinders the establishment of long-term relationships and mutual trust (Eskerod & Jepsen, 2013; Galvin et al., 2021). Secondly, projects are unique, which affects standardized procedures and the need to address learning from and within projects (Dietrich et al., 2010). Lastly, the stakeholders have different interests. Some stakeholders in the project may be competitors, which would complicate the process of collaboration (Dietrich et al., 2010).

Galvin et al. (2021) studied collaborative and opportunistic behavior and addresses the need for mutual trust and commitment in projects. To prevent opportunistic behavior, where project members act to maximize their self-interest, it is important to stimulate trust-building and create a collaborative environment. According to Galvin et al. (2021), opportunistic behavior is common within mega-projects because of the circumstances surrounding the mega-projects. Equally to Dietrich et al. (2010), Galvin et al. (2021) note that mega-projects are known for their uniqueness, gigantic scale, and long time span, consequently creating a complex and uncertain environment. These conditions hinder collaborative behavior and open opportunities for opportunistic behavior (Galvin et al., 2021).

According to Flyvbjerg (2017), mega-projects are: 'large-scale, complex ventures that typically cost $1 billion or more, take many years to develop and build, involve multiple public and private stakeholders, are transformational and impact millions of people' (Flyvbjerg, 2017, pp. 2). Infrastructure projects are increasingly seen and approached as mega-projects, because of their size, duration, uncertainty, and complexity (Flyvbjerg, 2017; Greiman, 2013). Megaprojects are one of the several different project management or governance styles discussed in project management literature. Other project management styles are projects, programs, and portfolios (Greiman, 2013). Projects, as described in the introduction, are known as temporary endeavors used to create a unique result (Dietrich et al., 2010; Greiman, 2013). Programs are characterized by the multiplicity of projects, where several projects benefit from shared management (Greiman, 2013). According to Greiman (2013), large-scale projects which consist of smaller projects can also be defined as a program. Portfolios contain a group of projects or programs that do not have to be related (Greiman, 2013). To conclude, there are several different project management approaches, but mega-projects become more common practice in infrastructure projects.

Infrastructure projects often require different levels of governance to collaborate (Greiman, 2013). This creates the need to overcome and work across institutional boundaries. The collaboration is not only focused on working together, but rather on knowledge integration and creating a successful project (Dietrich et al., 2010). Warm (2011) addressed the fact that collaboration should be managed from the start for it to become successful. Collaboration does not happen spontaneously and the process of collaborating with different organizations should be coordinated (Warm, 2011).

According to Dietrich et al. (2010), collaboration may lead to several outcomes: it opens the potential for learning and innovation; it can positively influence project success; and successful collaboration can lead to future collaboration (Dietrich et al., 2010). Dietrich et al. (2010) measure the quality of collaboration by looking at the collaborative process between the actors involved. In this research, the focus will not be on collaboration outcomes, but in what way the collaboration process takes shape between public stakeholders.

Collaboration is defined as a process where different organizations or institutions try to achieve goals or objectives by creating consensus and aligning interests (Dietrich et al., 2010). Infrastructure projects are increasingly approached as mega-projects and therefore require collaboration between several public and private stakeholders (Flyvbjerg, 2017; Greiman, 2013). To effectively assess this process of collaboration within infrastructure projects, the following of this chapter will establish indicators for collaboration.

2.2 Indicators of collaboration

The literature describes several indicators and mechanisms related to collaboration or collaborative behavior. Galvin et al. (2021) mention trust, culture, and governance as mechanisms that influence collaborative behavior. In their article, governance is defined as a tool to limit opportunistic behavior, consisting of contract design, organizational setting, and the decision-making process. The co-location of project members is mentioned as an example of a governance measure to prevent or limit opportunistic behavior. The article further distinguishes several types of trust (e.g. cognition-based, affect-based, calculative, etc.), but the general definition of trust is the willingness of one individual/organization to rely on another individual/organization in the belief that the action of the other individual/organization will be beneficial to the first individual/organization without the certainty of this fact (Galvin et al., 2021).

Dietrich et al. (2010) describe five elements of collaboration quality: communication, coordination, mutual support, aligned efforts, and cohesion. However, Dietrich et al. (2010) do mention the importance of trust, colocation, collaboration incentives, commitment, congruent and collaborative goals, and fulfillment of expectations to enhance project collaboration. All these antecedents are positively correlated with the five elements of project collaboration quality as mentioned in Dietrich et al. (2010).

Table 1 is based on the literature review of Ayegba et al. (2018) and the systematic literature review conducted in this study. Multiple academic articles have been studied in order to create this list of factors that influence the concept of collaboration. Ayegba et al. (2018) studied collaboration and long-term relationships (CLR) in the construction sector and conducted the most recent literature review about CLR. The findings of their literature review are integrated into Table 1, indicated by (…)[1]. The other articles in Table 1 are the results from the systematic literature review conducted in this research.

After the systematic literature review we bundled the factors into indicators. This resulted in 5 indicators that are shown in Table 2. In this study we chose to use the indicators of institutional setting, communication and trust.

To summarize, literature describes several factors related to collaboration and relationships. These factors are illustrated in Table 1. The indicators used in this study are the institutional setting, communication and trust. These indicators consist of several factors as shown in Table 2. The following sections will elaborate on these indicators and their associated factors.

Author(s) & Year	Factors influencing collaboration and relationships
Mattessich & Monsey (1992)[1]	• Legislation and funding to promote collaboration • Educating potential collaborators • Required resources of its members • Ability to take risks • Being knowledgeable • Previous experience • Participatory policy development style
Saad et al. (2002)[1]	• Ability to create, manage and reshape relationships • Continuous learning • Commitment from top management
Ylitalo et al. (2005)[1]	• Open-ness • High-level of trust
Kadefors et al. (2007) [1]	• Trust • Commitment • Team-work
Dietrich et al. (2010)	• Communication • Coordination • Mutual support • Aligned efforts • Cohesion • Trust • Alignment of incentives • Physical and cultural proximity • Expectation management
Frödell (2011) [1]	• Willingness and capability for collaboration • Aligned core values • Parties to be approachable, honest and responsive • Total cost focus • Knowledge, along with delivery precision • Trust • Long-term orientation
Sanchez (2012) [1]	• Having shared goals • Being involved in the process • Having open lines of communication • Direct engagement
Meng (2013) [1]	• Continuity of work • Long-term programme
Challender et al. (2014) [1]	• Trust • Change in mindset • Commitment of participants • Greater coordination • Sufficient time to nurture relationship • Long-term vision

De Schepper et al. (2014)	• Differing expectations • Stakeholder management strategies • Engagement/stakeholder inclusion • Communication processes • Trust
Eskerod & Vaagaasar (2014)	• Trust • Knowledge integration strengthens trust
Chang et al. (2015) [1]	• Social exchange behaviour • Detailed information • Respect between parties • Flexibility • Mutuality • Solidarity
Suprapto et al. (2015) [1]	• Commitment • Cooperation • Connectedness of owner and contractor striving for a common goal • Team-work • Relational attitudes • Capability • Team integration
Babaeian Jelodar et al. (2016) [1]	• Trust • Commitment • Team-work • Open communication • Common goals between partners • Fair balance of risk and rewards • Consistent objectives • Mutual trust • Clear understanding of roles and responsibilities • Clear contract • Clear decision-making mechanism
Butt et al. (2016)	• Project or organizational culture • Effective ommunication routines helps to maintain trust • Three-mode communication: push, pull and interactive • Trust
Wang et al. (2016) [1]	• Mutual trust • Commitment • Solidarity between the buyer and the supplier
Ayegba et al. (2018)	• Commitment • Learning and supportive environment • Mutual trust • Open communication • Integration of project team members

Derakhshan et al. (2019)	• Project governance • Project governance influences external stakeholders' project support • Trust • Transparency • Satisfaction • Accountability of control • 'Defining communication protocols, introducing democratic and participative decision making, dealing with conflicts and disputes, overcoming relationship difficulties and ensuring that effective communication is taking place at all levels are keys to having a fruitful partnership' (pp. 105)
Francisco de Oliveira & Rabechini Jr (2019)	• Trust • Communication • Stakeholder management
Evans et al. (2020)	• Mutual trust • Transparency • Having common goals • Understanding of each other's interests and values
Galvin et al. (2021)	• Governance • Culture • Trust • Public-Private Partnerships (PPP) • Commitment • Values • Transparency
Nguyen & Mohamed (2021)	• Stakeholder power • Stakeholder interests (e.g. conflicting interests) • Participation/engagement • Project support • Effective stakeholder management
Olatunde & Odeyinka (2021)	• 'Maintaining good relationships with stakeholders' (pp. 14) • 'Addressing stakeholders' concerns and needs' (pp. 14) • Communication is crucial when it comes to relationships and stakeholder management
Ruijter et al. (2021)	• Calculative and normative trust • Project governance • Workshops to enhance trust-development • Reciprocity: interactions between stakeholders to decrease complexity and uncertainty

Table 1: Factors influencing relationships based on Ayegba et al. (2018)[1] and systematic literature review

Indicators	Factors
Institutional setting	• Project governance • Contracts
Communication	• Communication channels • Formality • Culture • Internal/External communication
Trust	• Satisfaction • Involvement • Experiences • Instruments • Transparency • Calculative/Normative trust
Commitment	• Project support • Commitment from top management • Commitment of participants
Stakeholder management strategies	• Stakeholder power • Stakeholder interests • Engagement • Stakeholder management

Table 2: List of indicators with their associated factors

2.2 Institutional structure

The institutional structure or governance can make a critical difference in the collaboration between the organizations or parties involved (Greiman, 2013). Project governance has been defined differently among scholars, but it is mostly about the arrangements that have been made to ensure that all organizations have the same goal in mind and to limit the chances of conflicts (Ruijter et al., 2021). Furthermore, governance arrangements ensure the mother organization that the project organization will act in the interests of the mother organization. Therefore, project governance is not solely important for the project organization, but also for the mother organizations (Ahola et al., 2014; Biesenthal & Wilden, 2014).

Large-scale infrastructure projects involve several governmental institutions and layers (Greiman, 2013). This requires the establishment of an organizational structure to coordinate these different levels of government (Greiman, 2013). Especially, because the interests of the governments might differ in infrastructure projects (Greiman, 2013). The governance models differ between mega-projects and traditional hierarchical projects. Because of the involvement of and the collaboration between several governments and governmental layers, different governance structures are needed within a mega-project (Greiman, 2013). In other words, the governance structures shape the collaboration process between government entities.

Mega-projects are known for their complexity and their duration of 3-15 years, resulting in the risk of discontinuity of management (Greiman, 2013). Officials of different governmental organizations/levels might switch positions or retire, therefore creating a discontinuity of management. Some scholars argue that this benefits the project by leaving room for creativity and a new perspective on the project and its objectives (Greiman, 2013). However, other scholars argue that the discontinuity of project management results in the loss of institutional knowledge and expertise (Greiman, 2013).

Besides the organization of the governance structures, another increasing phenomenon in contemporary infrastructure projects are Public-Private Partnerships (PPP) (De Schepper et al., 2014). PPPs can be defined as contractual arrangements between public and private parties that have a few characteristics (Demirel et al., 2017). First, PPPs consist of one contract between the public and private parties. Second, there is a risk transfer towards the private parties, compared to traditional infrastructure projects where there is little risk at the contractor's side. Finally, the contract has a relatively long-time span (Demirel et al., 2017). PPPs can be experienced as complex among the different stakeholders involved (De Schepper et al., 2014). Challenges emerge when situations occur that have not been addressed in the planning phase, resulting in delays or budget overruns (Demirel et al., 2017). According to De Schepper et al. (2014), the tension between stakeholders arises when the expectations about the outcome or process of the project are not aligned with the stakeholders. Together with an unclear division of responsibilities, this may lead to tension or ultimately conflicts (De Schepper et al., 2014). This tension does not only occur between the public and private parties but may as well occur within one of these focal organizations, i.e. between different governments. Furthermore, De Schepper et al. (2014) addresses the need to include the cultures of public service organizations when studying stakeholder management in PPPs.

Thus, the institutional structure of a project contains the organizations of the governance structures between the public stakeholders, together with the contracts between the public stakeholders and the private stakeholders or contractors. The project governance structures define the collaboration process between public organizations (Greiman, 2013), whereas PPPs may influence the

collaboration between the public organizations through their complexity and the difficulty to assign responsibilities (De Schepper et al., 2014).

2.3 Communication

Communication is a crucial aspect of collaboration for several reasons (Butt et al., 2016; Greiman, 2013). Infrastructure projects need an enormous amount of information exchange and communication. The absence of communication and stakeholder engagement can lead to unforeseen changes in the project design and planning, therefore impacting the project financially and timewise. Misinterpretation of important matters (e.g. scope or budget), conflicting stakeholder expectations, and uncertainties are examples of consequences related to the absence of communication. The direct impacts of a project change during the realization phase could be additional work, planning adjustments, demolition of already executed work, etc. (Butt et al., 2016).

Beneficial aspects of effective communication are the establishment of consensus and trust among stakeholders (Greiman, 2013). The constant interaction between stakeholders creates an understanding of each other's interests and perspectives. It will be easier to avoid conflicts and to act to changes within the project when stakeholders know the objectives of the project and the reasons to execute the project in the first place. Communication is an important tool to reach this stakeholder understanding and ultimately stakeholder commitment to the project (Butt et al., 2016). Moreover, it is important to know and understand the underlying interests of other stakeholders to avoid or mitigate potential conflicts (Greiman, 2013).

Besides the communication impacts, it is important to mention the differences in communication modes and channels. Communication channels can be formal as well as informal. A schematic overview of project communication is illustrated in Figure 1. Examples of formal communication channels are official meetings, phone calls, video calls, etc. Informal communication channels are short conversations at the coffee corner or conversations at dinner and drinks (Butt et al., 2016). There is a need to combine these formal and informal communication channels. Formal communication on its own will most likely not result in robust relationships (Butt et al., 2016).

During the Covid-19 pandemic modes of engagement shifted from physical interactions, e.g. face-to-face meetings, towards virtual modes, e.g. Teams meetings. In the aftermath of the Covid-19 pandemic, it is expected to establish a hybrid mode of engagement, where physical interactions are alternated with virtual modes of engagement (Reynante et al., 2021). This hybrid mode of engagement is encouraged by Reynante et al. (2021) to improve citizen engagement and public participation since it combines the high involvement of physical interaction with the lower transaction costs of virtual meetings.

Communication is related to trust and project culture (Butt et al., 2016; Eskerod & Jepsen, 2013; Galvin et al., 2021). Informal communication channels can help establish relationships and contribute to the creation of trust (Butt et al., 2016; Greiman, 2013). To overcome cultural challenges, it is crucial to communicate effectively (Butt et al., 2016). Stakeholders and project members of large-scale infrastructure projects, especially in Europe, can have different cultural backgrounds. This applies not only to nationality but also to work ethic, education, and career paths. Some stakeholders may come from an innovative background, whereas other stakeholders might be used to hierarchical/contractual cultures (Butt et al., 2016; Eskerod & Jepsen, 2013). When changes in the project or project organization occur, the stakeholder in the first situation will tend to look for innovative solutions on how to deal with or approach this change. The stakeholder with the hierarchical/contractual background will tend to look at the contract and scope to determine who's responsible or how to deal with the change. This can create tension when these stakeholders or

project members need to work together. Open communication from the beginning of the project can help understand each other's cultural background and perspectives on changes and challenges that can occur during the realization phase of the project (Butt et al., 2016). Furthermore, open communication and the establishment of relationships allow stakeholders to address their concerns in an early stage, which may avoid conflicts in the long run (Greiman, 2013).

There is a difference between internal and external project communication. Internal project communication focuses on the information that is shared and the communication within the project organization. External project communication focuses on information sharing and communication between project stakeholders and the societal environment (Butt et al., 2016). Within this study, the main focus will be on the internal communication, but the external communication will be addressed briefly.

In conclusion, communication is an important factor considering collaboration in infrastructure projects. The concept of communication can be broken down into several aspects. First, several communication channels can be used when it comes to communication (e.g. meetings, phone, and video calls, etc.). Second, there is a distinction between formal and informal communication. Finally, there may be cultural differences when it comes to communication and collaboration between different organizations.

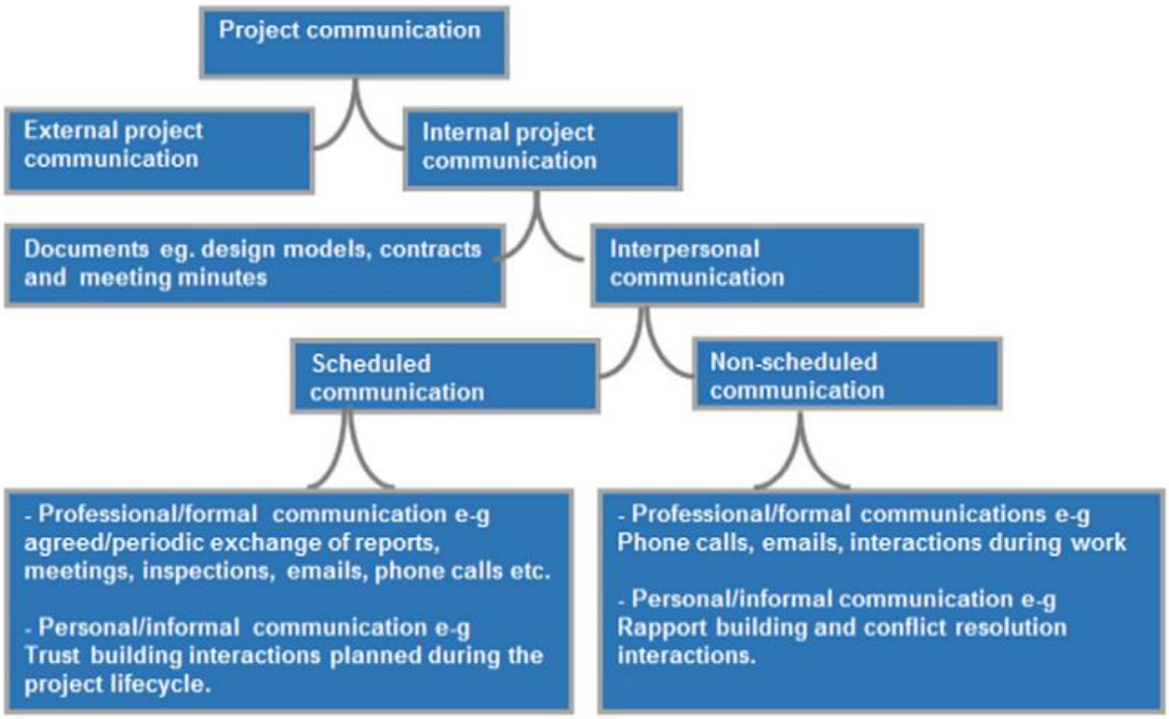

Figure 1: Communication in projects (Butt et al., 2016)

2.4 Trust

The notion of trust is an abstract, but crucial factor in terms of collaboration in projects (Kadefors, 2004). Projects are temporary endeavors, which makes the establishment of relationships, and therefore trust, between project stakeholders difficult (Francisco de Oliveira & Rabechini, 2019). Stakeholders have a short period to get to know each other and know beforehand that they will work together temporarily. This might create a lack of trust development (Francisco de Oliveira & Rabechini, 2019).

Trust is a future-oriented concept that is related to uncertainty (Eskerod & Vaagaasar, 2014; Francisco de Oliveira & Rabechini, 2019). Eskerod & Vaagaasar (2014) describe the notion of trust as: 'the willingness to be vulnerable' (pp. 81). This entails the need for project members to accept a certain degree of uncertainty and to be willing to share risks. Contracts are used to decrease uncertainty and unpredictability in the future and to secure one's interest. However, these contracts can become problematic when unexpected changes or problems occur. With contracts, project members create shadow predictions where there is heavy reliance on contracts to prepare and defend the project from uncertainty. Nevertheless, when projects would have less-detailed contracts, project members would be more flexible to move and adapt to unexpected changes (Ruijter et al., 2021). To conclude, there seems to be a contradiction in the illusional safety of contracts.

According to Greiman (2013), trust is established by three factors: transparency, keeping commitments, and trusting others. Transparency is about being completely honest by showing facts that other stakeholders can check for themselves. Keeping commitment is showing that you do what you promised to do. Trusting others is about the actions that demonstrating trust will eventually return in similar behavior from the other organization or individual (Greiman, 2013; Kadefors, 2004). Francisco de Oliveira & Rabechini (2019) add that effective communication between and the involvement of project stakeholders helps in the creation of trust and cohesion. Along the same line as Greiman (2013), Francisco de Oliveira & Rabechini (2019) define effective communication or trust as being transparent and respectful towards and with stakeholders. Once trust and relationships have been developed, they should be maintained by using effective communication because contemporary experiences can influence future experiences and emotions (Francisco de Oliveira & Rabechini, 2019). In other words, a satisfactory experience with project stakeholders of one project might influence the experiences in a future project.

Examples of factors that can give a wrong signal to the other organization are close monitoring and economic rewards (Kadefors, 2004). Both measures might communicate that the other organization or individual cannot be trusted. He or she either needs close supervision to prevent opportunistic behavior or needs economic rewards because of the assumption that he or she will not do their task because of self-interest (Kadefors, 2004).

There are two different types of trust according to Ruijter et al. (2021), specifically calculative and normative trust. Calculative trust is based on trust in systems, where trust is based on (financial) rewards and penalties (Kadefors, 2004; Ruijter et al., 2021). Design, Build, Finance, and Maintain (DBFM) contracts are a prime example of the establishment of calculative trust. DBFM contracts are characterized by a financial scheme, where the contractor will receive a part of the funding of the project at the end of the project. The amount of this final payment will be partially dependent on the quality delivered by the contractor. Normative trust is related to emotional connections and prior experiences with people/organizations (Kadefors, 2004; Ruijter et al., 2021). Calculative and normative trust should not be seen as two different entities, but as interconnected entities that can

exist simultaneously. Heavy reliance on calculative trust makes a project vulnerable to unexpected events. Project organizations should understand that paragraphs in contracts can be misinterpreted or misunderstood. Especially in complex projects, where several companies and organizations work together, it is important to incorporate normative trust-building (Ruijter et al., 2021). Furthermore, Kadefors (2004) indicates that without the development of normative trust, there is little chance of close cooperation or collaboration between the organizations/individuals.

Ruijter et al. (2021) studied the largest infrastructure program in the Netherlands, the Schiphol-Amsterdam-Almere (SAA) program. One of the tools the program organization used to incorporate normative trust-building is workshops. A project consists of different stages, where each stage needs a different type of workshop. Within the initiation stage, workshops will be much more focused on the exploration of mutual goals, potential dilemmas, and expectations from different parties. Other workshops are needed during the formation stage, where the dilemmas need to be discussed in-depth and perspectives need to be shared. Storytelling workshops and fish-bowl setups are possible options to use in this stage. During the operation stage, it is important to understand each other's (re)actions. Therefore, within the SAA program, a role-playing workshop was invented to reproduce actual events to understand each other's perspectives and actions (Ruijter et al., 2021).

The potential danger of workshops is that they can be perceived as a fictive reality, where some participants feel like they are playing a game that has nothing to do with the actual reality (Ruijter et al., 2021). Especially in the construction and technology sector, it might be difficult to convince stakeholders of the benefits of participating in the workshops.

The amount of trust does not need to stay equal from the front-end phase onwards. Expected and unexpected events can change circumstances and affect the amount of trust stakeholders have in the project and consequently the willingness to be vulnerable towards other stakeholders (Eskerod & Vaasaagar, 2014). Therefore, it is crucial to have a culture of trust and collaboration to reach successful partnering in construction projects (Evans et al., 2020). This statement is supported by the findings of Mollaoglu et al. (2015) which show that the lack of trust can become a barrier to partnering in construction projects. This can be avoided by reserving time for trust-building during the partnering process (Mollaoglu et al., 2015).

As indicated in the former paragraph, trust is a crucial factor when it comes to collaboration and partnering. The concept of trust contains a few aspects: (past) experiences; transparency; keeping commitment; trusting others; satisfaction; and involvement. Instruments, like workshops, exist to enhance and develop trust during different phases of a project. Finally, the notion of trust can be divided into calculative, where the emphasis is on rewards and penalties, and normative trust, which is focused on emotions.

2.5 Conceptual Model

Figure 2 shows the conceptual model that is used in this study. The indicators institutional setting, communication and trust are indicated as dark green in Figure 2. As indicated in sections 2.2, 2.3, and 2.4 all indicators can be broken down into other factors, which are used as measurable variables (light green in Figure 2) in this study. Eventually, the measurable variables, derived from the indicators, will help showing in what way collaboration has been established between the project organization and the societal environment.

The expected result is that these indicators are partially dependent on each other. For example, the governance structures of a project organization define the formal communication strategies. Secondly, trust is based on transparency and the establishment of informal relationships, which are both linked to communication (Butt et al., 2016; Greiman, 2013). Thirdly, De Ruijter et al. (2021) argue that trust can be divided into calculative and normative trust, where calculative trust is linked to contractual agreements (e.g. (financial) rewards). Finally, Galvin et al. (2021) describes the interconnectedness of project governance, culture and trust. Therefore, the expected result of the research question is that all indicators are interlinked to each other (dotted lines in Figure 2).

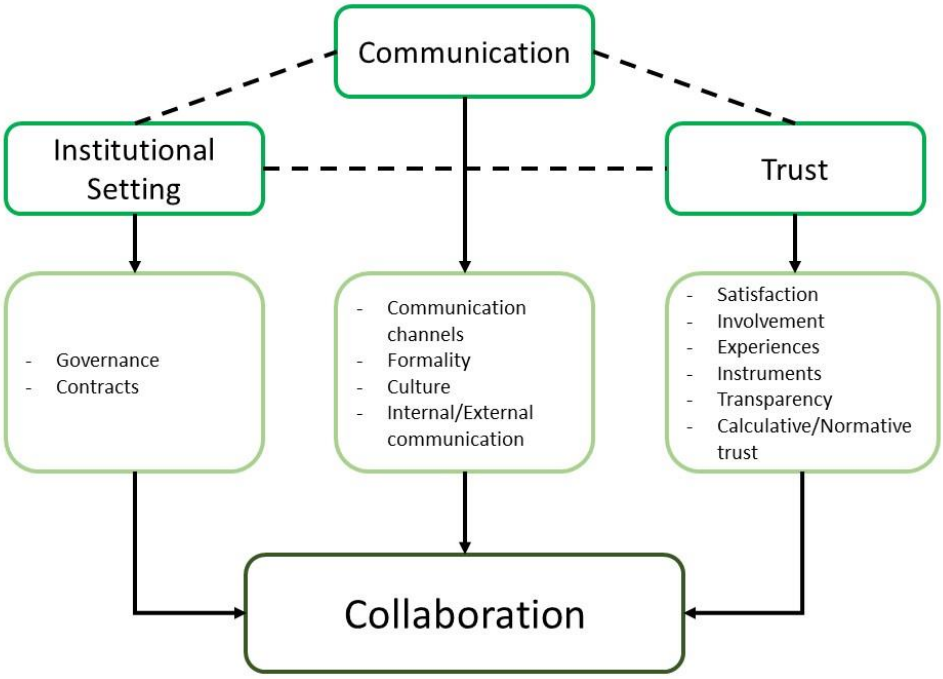

Figure 2: Conceptual model

3. Methodology

This chapter will explain the research methods that have been used in this research. The data collection techniques, interviewee selection, ethical considerations, and the coding tree will be discussed in this chapter. Finally, an introduction and argumentation of the case studies will be discussed.

3.1 Research Process

Figure 3 shows the research framework. This framework explains the process of this research in subsequent steps.

The first step of this research was to identify a problem and to define a problem statement. Subsequently, research questions were formulated to study the problem statement. The next step was to perform a systematic literature review. The aim of the systematic literature review was to identify and define indicators for collaboration. The concept of collaboration and the definition of the indicators are executed in step 3. The systematic literature review helped to establish a theoretical framework which led to a conceptual model. Step 4 encompasses the creation of an interview guide. This interview guide was based on the theoretical framework and the indicators defined by the literature review. Step 4 also includes the establishment of a coding tree, which will be used for the analysis in step 6. The semi-structured interviews were conducted in step 5. An explanation on how these interviews were conducted will be given in the following section. The final step is focused on the analysis of the data. This was done by using the deductive and inductive codes of step 4. Furthermore, step 6 includes the concluding sections of this study.

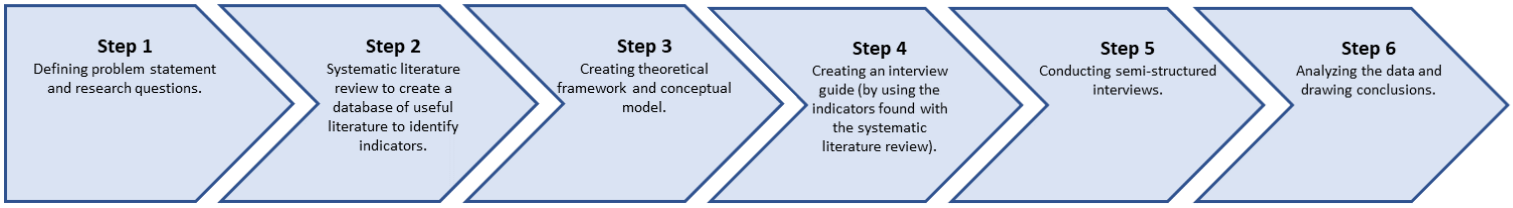

Figure 3: Research Framework

3.2 Research Approach

The data of this study has been acquired by doing a systematic literature review and by conducting semi-structured interviews with government officials.

3.2.1 Systematic Literature Review

A systematic literature review has been done to find a definition of collaboration and acquire indicators for the concept of collaboration. The systematic literature review has been conducted by looking at English (peer reviewed) journals only. The review started with the selection of the following keywords: 'project', 'collaboration', 'stakeholder' and 'partnering'. These keywords are put individually or together into the search engines Google Scholar and Smartcat. The second step was to limit the results by selecting the following journal requirements. The English (peer reviewed) journals should be related to project management; contract management; public-public partnerships; behavioral sciences; or government. The next step was to read the titles and abstracts of the results to come to a preliminary list of potential articles. The final step was to study these articles of the preliminary list more thoroughly to define indicators and come to the factors as illustrated in Table 2.

3.2.2 Semi-structured Interviews

In-depth interviews were conducted to acquire context-dependent data. These in-depth interviews were semi-structured. Semi-structured interviews ensure the comparability between the respondents and the accountability of the research while allowing the researcher and respondents some space for their own interpretation and uniqueness of the interview (Clifford et al., 2016). Respondents had been contacted twice before the interview. First, a formal invitation with information about the research and the interview was sent from the project manager to the potential respondents. Positive responses were contacted to schedule an appointment. A few days before the interview respondents received a second e-mail containing the key questions of the interview together with the informed consent form (see Appendices 1 & 2). This allowed the respondents to prepare for the interview and not be surprised by any of the key questions.

The respondents were selected in consultation with the thesis supervisor and the project manager. For the project Aanpak Ring Zuid 6 interviews were conducted with government officials of Rijkswaterstaat, Province of Groningen, and the municipality of Groningen. For the Afsluitdijk project, 7 interviews were conducted with government officials of Rijkswaterstaat, the Province of Friesland and the partnership De Nieuwe Afsluitdijk (DNA). The respondents were involved at different levels of the project organizations' hierarchy, namely the administrative level, directors level, and operational level.

The interviews were a mix of on-site and online interviews. The preferred option was to conduct interviews on-site at the offices of respondents. On-site interviews were the preferred option since it allows the researcher more in-depth interaction with the respondent (Clifford et al., 2016). Body language can be an important factor in conducting interviews, which was more difficult to notice via Teams. However, in some cases, this was not a viable option. Working from home, travel distances, and the occupancy of respondents were reasons to conduct some of the interviews online via Microsoft Teams.

3.2.3 Ethical considerations

This study involves qualitative research methods. The respondents of the interviews will be informed about the purpose of this interview and their rights before the interview. The respondents can withdraw from the interview at any time and their responses will be used confidentially. The data will be used anonymously, meaning that names and functions will be left out in the results. All respondents have been sent key questions of the interview together with an informed consent form

(see Appendices 1 & 2) a few days in advance. This allowed respondents to properly prepare for the interview and be able to read their rights and methods of data collection.

The majority of the interviews were recorded and stored on the laptop of the researcher. The recordings were used to transcribe and analyze the data collected. All recordings were deleted when the coding process was finished. The respondents were asked in writing (by the informed consent form) and verbally (at the start of the interview) whether they agreed upon the interview being recorded. When respondents did not feel comfortable being recorded, the researcher took notes on paper during the interview. After the interview was finished these notes were further worked out in Microsoft Word. This document was sent to the respondent to allow them to check the content of the transcription. The recorded interviews were transcribed literally, i.e. the exact sentences spoken.

The researcher is officially an intern at Rijkswaterstaat. However, all interviews were approached equally. The internship at Rijkswaterstaat helped the researcher to invite potential respondents. Potential respondents were invited by the project managers (who are originally from Rijkswaterstaat) of the project organizations. The contacts provided by Rijkswaterstaat benefitted the researcher in this sense. However, all data and information were treated objectively.

3.3 Coding tree

The interviews are recorded and transcribed. The Atlas.ti software is used in this research to analyze the data acquired from the interviews. A coding tree was created by using deductive and inductive coding. Figure 4 shows the coding tree that has been the basis for the analysis. The measurable variables and indicators of the conceptual model (Figure 2) together with the definition of collaboration are used as deductive codes (indicated in purple). The inductive codes (indicated in yellow) are factors that were derived from the interviews. For example, the factor 'Continuity' was mentioned multiple times during the interviews. This factor has been added to the coding tree as an inductive code. A concise definition of the inductive codes will be given below:

- Interests: (public) stakeholders have different interests
- Maintenance: the maintenance factor of a project. This factor can be either after the project (D&C) or can be part of the project (DBFM)
- Administrative consequences: the public stakeholders all have political aspects that can influence the collaboration process in the project organization
- Continuity: the continuity of employees and government officials on job positions

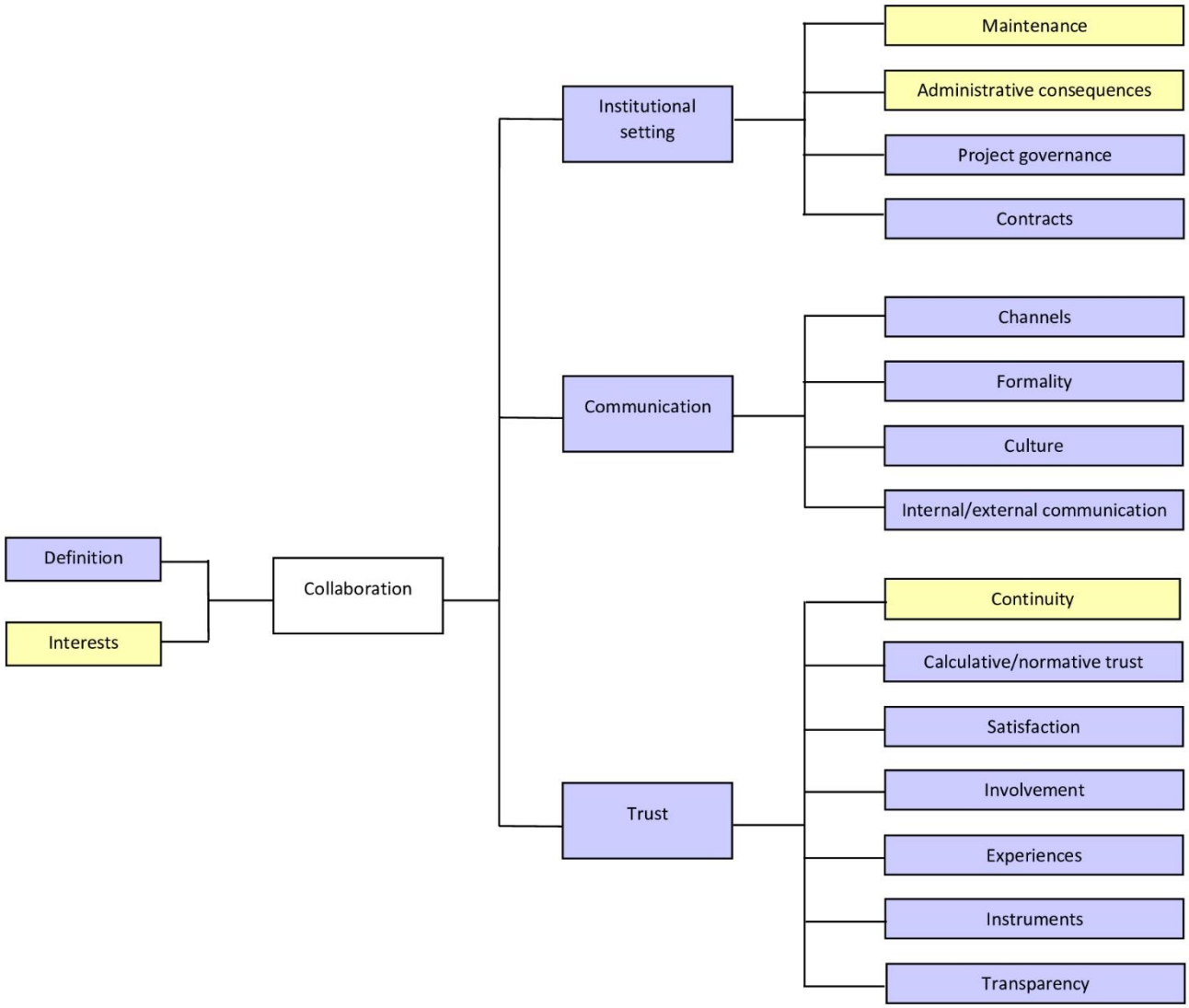

Figure 4: Coding tree

3.4 Case studies

The collaboration between the project organization and the public stakeholders has been studied in two Dutch infrastructure projects. The cases were selected on the following requirements. First of all, the cases should meet the following mega-project characteristics as stated by Derakhshan et al. (2019) and Flyvbjerg (2017). The duration of the project should be 3-15 years, the cases should impact the surrounding society and environment, the project should be publicly owned, and involve several public and private parties. The cases were further selected on the PPP contract that had been signed with the contractor. The cases should have a differing PPP contract in order to be able to study whether the PPP has any influence on the public-public partnership. Finally, this research entails the collaboration between public stakeholders in the realization phase of the projects, which makes that the cases selected should be in the realization phase. These case requirements led to the following projects: Aanpak Ring Zuid Groningen and the Afsluitdijk project.

3.4.1 Aanpak Ring Zuid

To safeguard the connectivity and enhance traffic safety and the living environment in the city of Groningen for the upcoming decades the national, regional, and local governments decided to upgrade and convert the Southern Ring Road. The Southern Ring Road in Groningen includes approximately 12 kilometers of road infrastructure (see Figure 5). Its most critical bottleneck and largest traffic junction is called the Julianaplein. The Julianaplein is the only traffic junction with traffic lights on the route between Amsterdam and Copenhagen. To improve the connectivity and prevent traffic jams in the future, these traffic junctions like the Julianaplein need to be redesigned. The newly designed traffic junction consists of fly-overs, where traffic streams have been separated (see Figure 6 for illustration) (Aanpak Ring Zuid, n.d.[1]).

At present, the Southern Ring Road is considered a barrier between the adjacent neighborhoods. To improve the living environment and to reconnect these neighborhoods, the Southern Ring Road will be deepened between the Hereweg and the Oude Winschoterdiep. The deepened ring road will be covered by a newly grown park: the Zuiderplantsoen (Aanpak Ring Zuid, n.d.[1]). Construction of the Southern Ring Road project started in 2018 and is expected to be finished by the end of 2024 (Aanpak Ring Zuid, n.d.[1]).

The commissioning parties of the project Aanpak Ring Zuid (ARZ) are the national, regional, and local governments. The national government (Ministry of Infrastructure and Water Management) will be represented by its executive agency: Rijkswaterstaat. The regional government in the project is the Province of Groningen. The local government in the project is the municipality of Groningen. These three organizations have formed a project organization called Aanpak Ring Zuid (Aanpak Ring Zuid, 2014a). The contractor is awarded a Design and Construct contract, which is a form of PPP where the contractor is responsible for the design and the construction of the Southern Ring Road (Aanpak Ring Zuid, 2014b; Akintoye et al., 2003).

The project Aanpak Ring Zuid meets the case requirements, because it impacts approximately 80.000 car users a day together with all the residents living in Groningen that are impacted by the Southern Ring Road project (Rijkswaterstaat, 2017). The project has an estimated realization duration of 6 years and is currently still under construction. Its project organization consists of three different government entities, that are working together with the contractor through a public-private partnership. Therefore, the project Aanpak Ring Zuid has been selected as a case in this study.

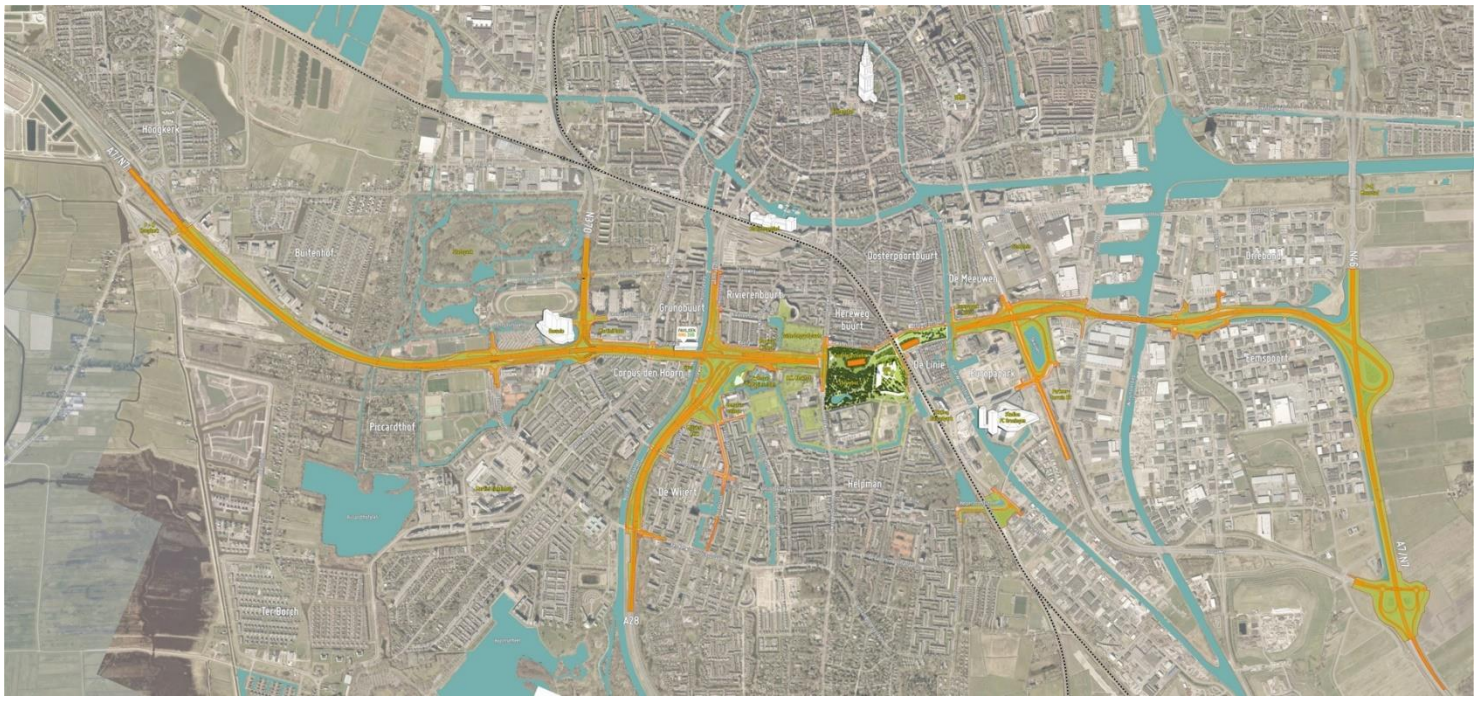

Figure 5: Planning map Aanpak Ring Zuid (Aanpak Ring Zuid, n.d[2].)

Figure 6: Vision of the future Julianaplein (In de buurt, 2020)

3.4.2 Afsluitdijk

The Afsluitdijk is a dam closing off the former Zuiderzee from the Waddensea, turning the Zuiderzee into a freshwater lake called the Ijsselmeer (Rijkswaterstaat, 2020). Because of climate change, the sea level rises and extreme weather conditions occur more often. The dam needs to be able to defend the lower hinterlands of the Netherlands against the water for the upcoming decades. The Afsluitdijk needs to be renovated and heightened to meet the water safety requirements and to be able to defend against future weather conditions. To meet the water safety requirements, the Afsluitdijk will be heightened by 2 meters and around 75,000 uniquely developed concrete blocks will be placed on the Waddensea side of the Afsluitdijk (see Figure 7 for illustration). The upgrade of the sluices and the pumps at Den Oever and Kornwerderzand creates more capacity to discharge water from the Ijsselmeer to the Waddensea. This is important because of the increasing amount of water coming from the main rivers towards the Ijsselmeer, increasing the water level in the freshwater lake. With all these measures together the Afsluitdijk will reach its water safety standards at least until 2050 (Rijkswaterstaat, 2020).

Besides its main function as a water defense structure, the Afsluitdijk has several other functions. One of its functions is the highway connection between the Province of Noord-Holland and the Province of Friesland. The highway will be renovated and the emergency lanes will be widened to meet the current safety standards (Rijkswaterstaat, 2020). The construction of the Afsluitdijk project started in 2019 and is expected to be finished at the end of 2025 (Rijkswaterstaat, n.d.)

The renovation and reinforcement of the Afsluitdijk are managed and initiated by Rijkswaterstaat. However, several other projects on the Afsluitdijk are initiated by the partnership between the Province of Noord-Holland, Province of Friesland, the municipality of Hollandse Kroon and the municipality of Súdwest-Fryslân, called the De Nieuwe Afsluitdijk (DNA) (De Afsluitdijk, n.d.). Rijkswaterstaat established and has a leading role in the project organization that takes care of the water safety measures and everything related to these measures. The regional partners established the project organization for the regional ambition, such as ecological, economic, and energy objectives (see Figure 8 for illustration of ecological ambition) (De Afsluitdijk, 2011).

The consortium Levvel has been assigned through a DBFM contract (Rijkswaterstaat, n.d.). A DBFM contract is a form of PPP where the contractor or consortium is responsible for the design, construction, financing, and maintenance of a project (Akintoye et al., 2003). In the case of the Afsluitdijk project, Levvel is responsible for 25 years of maintenance (Rijkswaterstaat, n.d.). The project budget with the costs of 25 years of maintenance included has been modified this year to more than 2,1 billion euros (Rijkswaterstaat, n.d.).

The project Afsluitdijk fits the case requirements because it has multiple public and private partners. Its budget is over 1 billion euros and there is a PPP in the form of a DBFM contract. Finally, the complete project takes approximately 6 years to complete and is currently still under construction.

Figure 7: Project Afsluitdijk (Rijkswaterstaat, n.d.)

Figure 8: Fish migration river Afsluitdijk (It Fryske Gea, n.d.)

4. Results

In this chapter the results of the data collection will be discussed. These results are derived from the 13 interviews with government officials of the cases together with policy documents and official reports. A short overview of the interviewees is provided in Appendix 3. The interviews have been analyzed by using the codes from the coding tree (Figure 4) discussed in Chapter 3. This chapter is divided into several sections. First, the perspectives of interviewees on the definition of collaboration will be discussed. Second, the institutional setting, communication and trust of both cases will be discussed.

4.1 Perspectives of interviewees on collaboration

This section will discuss the perspectives of interviewees on the concept of collaboration. According to the majority of the respondents collaboration is about having one common goal or objective. This does not mean that stakeholders can't have other underlying objectives, but these underlying objectives should not harm the common goal. Some respondents argue that the common goal should be established together and that the common goal should be guiding.
Other respondents argue that it is not necessary to have the same goal or objective. They argue that collaboration is about working together on your own objectives/goals. These goals can be complementary, but they do not have to be complementary. As long as the goals of others do not harm your goals, it is still possible to work together and benefit from each other. This differs from the definition used by Dietrich et al. (2010) stretched in section 2.1, where collaboration is defined as a process where the emphasis is on common goals and consensus. The respondents that argue that common goals are not necessarily needed in order to collaborate with other stakeholders, argue that it is important to know the objectives and interests of other stakeholders in order to collaborate. This is agreed on by the majority of the respondents: it is necessary to know and understand others' interests in order to effectively collaborate. This entails listening to other stakeholders, showing respect and ultimately act to their interests. This is supported by collaboration literature where it is stressed that a mutual understanding of interests and objectives is key to effective collaboration (Ayegba et al., 2018; Dietrich et al., 2010).

Interviewee 2 addresses that collaboration is about making considerations between arguments and interests collectively when an important decision has to be made. In other words, according to this respondent collaboration is not solely about pursuing one common goal, it is about making decisions together by considering and discussing the interests with all stakeholders involved. This complements with the findings of Ayegba et al. (2018), where it is stressed that the interests of several stakeholders should be negotiated collectively. Interviewee 2 further stresses: *'Collaboration means (…) to ensure that you keep each other's interests and the common interest intact, so that the pain should not fall too much on one of the partners, but that you actually monitor continuously whether this is somewhat in balance.'*

To summarize, the majority of the interviewees argue that the concept of collaboration is about having one common goal, but it is possible to have different underlying interests. Other interviewees argue that the common goal is not necessarily needed when it comes to collaboration. All interviewees agree that you should know the other stakeholders' objectives and interests to be able to collaborate. Finally, one of the interviewees mentions that collaboration is about making an important decision together by considering all arguments and interests of the different stakeholders.

4.2 Institutional setting

This section will describe the institutional setting of both cases. The institutional setting consists of the sub-indicators project governance, contracts, maintenance, and administrative consequences. The sub-indicators of maintenance and administrative consequences will be discussed in the governance and PPP sections. First, the sub-indicators of Aanpak Ring Zuid will be discussed. After Aanpak Ring Zuid, the sub-indicators of the Afsluitdijk will be discussed.

4.2.1 Governance of Aanpak Ring Zuid

The governance model of Aanpak Ring Zuid (ARZ) is shown in Figure 9. This is the governance model that is used in the realization agreement 2016 (Realisatieovereenkomst in Dutch) after the contract awarding. There is a project team Aanpak Ring Zuid which consists of employees of Rijkswaterstaat, the Province of Groningen and the municipality of Groningen. The project team is managed by the project director or manager. At the official/directors' level are the directors from the public stakeholders. At the administrative level is the Stuurgroep, which consists of the deputy of the Province of Groningen, the Chief Engineer Director of Rijkswaterstaat Noord-Nederland and the alderman of the municipality of Groningen (Aanpak Ring Zuid, 2016).

The realization agreement Aanpak Ring Zuid of 2014 describes the scope and risk allocation of the project Aanpak Ring Zuid. Furthermore, it defines the structure of the formal communication and the responsibilities of decision-making between the public stakeholders. It partly defines the structure of the collaboration, where formal meetings and decision-making protocols are defined (Aanpak Ring Zuid, 2016). According to one of the respondents, such an agreement is needed in order to establish a certain work ethic or serve as a written statement on norms and values on how to collaborate with the other stakeholders.

The risk-allocation in the realization agreement is an important factor in the project Aanpak Ring Zuid when it comes to collaboration between the national and regional government. The Province of Groningen is the financially risk-bearing party. However, there is a conflict between the Ministry of Infrastructure and Water Management and the Province of Groningen about some of the additional costs, including a VAT discussion, made during the realization phase of the project. The Province of Groningen commissioned an independent study to the causes of the cost-overruns at Aanpak Ring Zuid (Aanpak Ring Zuid, 2022). The conflict between the Province of Groningen and the Dutch State has been studied and advised by a committee led by Johan Remkes. The Province of Groningen is, according to the realization agreement, the financially risk-bearing institution. Rijkswaterstaat is the official client and is responsible for the execution of the project (Remkes et al., 2022). The conflict between the Province of Groningen and the Dutch State is about the responsibilities and the financial consequences of actions. As described in the report of Remkes et al. (2022), within the project of Aanpak Ring Zuid the one who decides (Rijkswaterstaat) is not the one who pays (Province of Groningen). According to Remkes et al. (2022), this has been a mistake or a flaw. Besides this flaw, the Province of Groningen let the municipality of Groningen and Rijkswaterstaat buy into the project without bearing any financial risks. This led to a financial contribution of 80 million euros by the municipality of Groningen, which is defined as a 'comfortable position' in the report of Remkes et al. (2022).

When we asked respondents about the conflict between the Dutch State and the Province of Groningen, the general consensus was that although there is a conflict at the administrative level, all public stakeholders involved tried to limit the influence of this conflict at the operational level. In other words, all public stakeholders acknowledged the significance this conflict could have at the

operational level and therefore put their efforts into preventing the conflict from trickling down the administrative chain.

Another issue at the Aanpak Ring Zuid project is the maintenance aspect of the project. The contractor has been awarded a Design and Construct contract, which means that there will be a transfer of (maintenance) responsibilities from the contractor towards the responsible authorities. The municipality of Groningen questions whether the aspects of maintenance have been taken seriously during the realization phase of the project. They do acknowledge that, because of the complexity of the project and time and budget pressure that exists, the maintenance aspect might become less significant. However, agreements have been signed prior to the realizations phase concerning the maintenance after the project is finished. When these maintenance aspects become neglected due to time and cost overruns, the responsible maintenance authority might disagree with the transfer of the finished project. This problem is also highlighted within literature, e.g. the article by Karim & Magnussen (2008). The problem when maintainability is inadequately considered during the planning, design and realization phase of a project is well-known by actors involved in these activities. The insufficient consideration of maintenance during these phases will lead to higher maintenance costs or issues related to maintenance activities (Karim & Magnussen, 2008).

Another factor that might influence collaboration between public stakeholders are elections. It is crucial to keep in mind that aldermen, deputies, etc. are dependent on elections. In the case of Aanpak Ring Zuid, the municipality of Groningen had elections in March 2022 (Gemeente Groningen, n.d.). One of the respondents mentioned they truly hoped that the alderman would stay for the coming 4 years. Not only because of the relationship they have with each other, but more importantly because of the continuity for the project. This respondent brought up the example of the replacement of the current alderman (Partij van de Arbeid) by an alderman of the Partij voor de Dieren (a left-wing party supporting animal rights in the Netherlands). This alderman might have very different interests when involved with the project Aanpak Ring Zuid. This respondent argued that such a change of aldermen might take another 1 or 2 years to build a relationship and in order to convince them of the common project goal. This example shows that external factors, like elections, can change the relationships between public stakeholders in an infrastructure project. Because of the time-span of infrastructure projects, often over 4 years, elections can result in design changes or a change in project goals.

A unique component of the project Aanpak Ring Zuid is its joint project organization. This differs from other infrastructure projects in the region, where there is often one government authority in the lead and other authorities are stakeholders to a certain degree. Some respondents argued that this joint project organization made the project more complex, whereas other respondents were pleased with its execution and results. Interviewee 1 argued that Aanpak Ring Zuid should be an example for other infrastructure projects, because of its joint project organization. Another argument in favour of the joint project organization given by the respondents is the expression of a united front towards the contractor.

To summarize, the project Aanpak Ring Zuid consists of a joint project organization of Rijkswaterstaat, the Province of Groningen, and the municipality of Groningen. The Province of Groningen is the risk-bearing institution, whereas Rijkswaterstaat is in the lead during the realization phase of the project. This created a conflict at the administrative level that is studied by Remkes et al. (2022). Although this conflict exists at the administrative level, all stakeholders make an effort to prevent this conflict from influencing the collaboration at the operational level.

4.2.2 PPP Aanpak Ring Zuid

As described in the realization agreement of 2014 the contract between the client and the contractor is a Design & Construct contract. On the question whether this PPP contract makes a difference in the collaboration between the public stakeholders, the reactions were quite diverse. Some respondents argued that the choice of contract with the contractor does not influence the collaboration between the public stakeholders. These respondents argue that the collaboration between the public stakeholders is dependent on other factors than the contract itself. This is remarkable, since De Schepper et al. (2014) notes the increased stakeholder complexity with PPPs in their study. According to De Schepper et al. (2014), the internal and external stakeholder dynamics are influenced by a Public-Private Partnership. The complexity of stakeholder relationships are often higher in PPPs compared to traditional contracts, because of the increase in number of stakeholders. The responsibility and risk-allocations are also different with PPPs compared to traditional contracts (De Schepper et al., 2014). This led to the assumption that PPPs do in fact influence the collaboration between public stakeholders. However, about half of the respondents of Aanpak Ring Zuid disagreed with this assumption.

Other respondents were certain that, in line with the study of De Schepper et al. (2014), the choice of contract (D&C, DBFM or traditional) makes a significant difference in the collaboration between the public stakeholders. Interviewee 2 argues the following on the question whether the contractors' contract influences the collaboration between the public stakeholders: *'Yes, absolutely. Because it very much determines your role in the collaboration. If you, if the contractor is only the constructer and not the designer, then you would have a completely different construct in your management of your contractor than the way we have it now. So that requires different forms of cooperation. And that may require a different realization agreement with a different division of interests.'* Interviewee 1 argues: *'(…) I think with the knowledge I have now, it is still the best contract form we could have chosen. I would do it again now, no DBFM, but also no traditional contract or anything like that.'*

The majority of the respondents that argued the PPP contract does not influence the collaboration between the public stakeholders are government officials of the municipality of Groningen. The respondents that argued the PPP contract does influence the collaboration between the public stakeholders are government officials of Rijkswaterstaat and the Province of Groningen. This is worth noting since this might have something to do with the conflict between the State and the Province of Groningen.

To summarize, there is a Design & Construct contract at the project Aanpak Ring Zuid. About half of the respondents argue that the choice of contract does not influence the collaboration between the public stakeholders. This differs from the findings of De Schepper et al. (2014) who argued that the increased complexity of Public-Private Partnerships will influence the internal stakeholder dynamics. The other half of the respondents argued that the choice of contract does influence the collaboration between the public stakeholders.

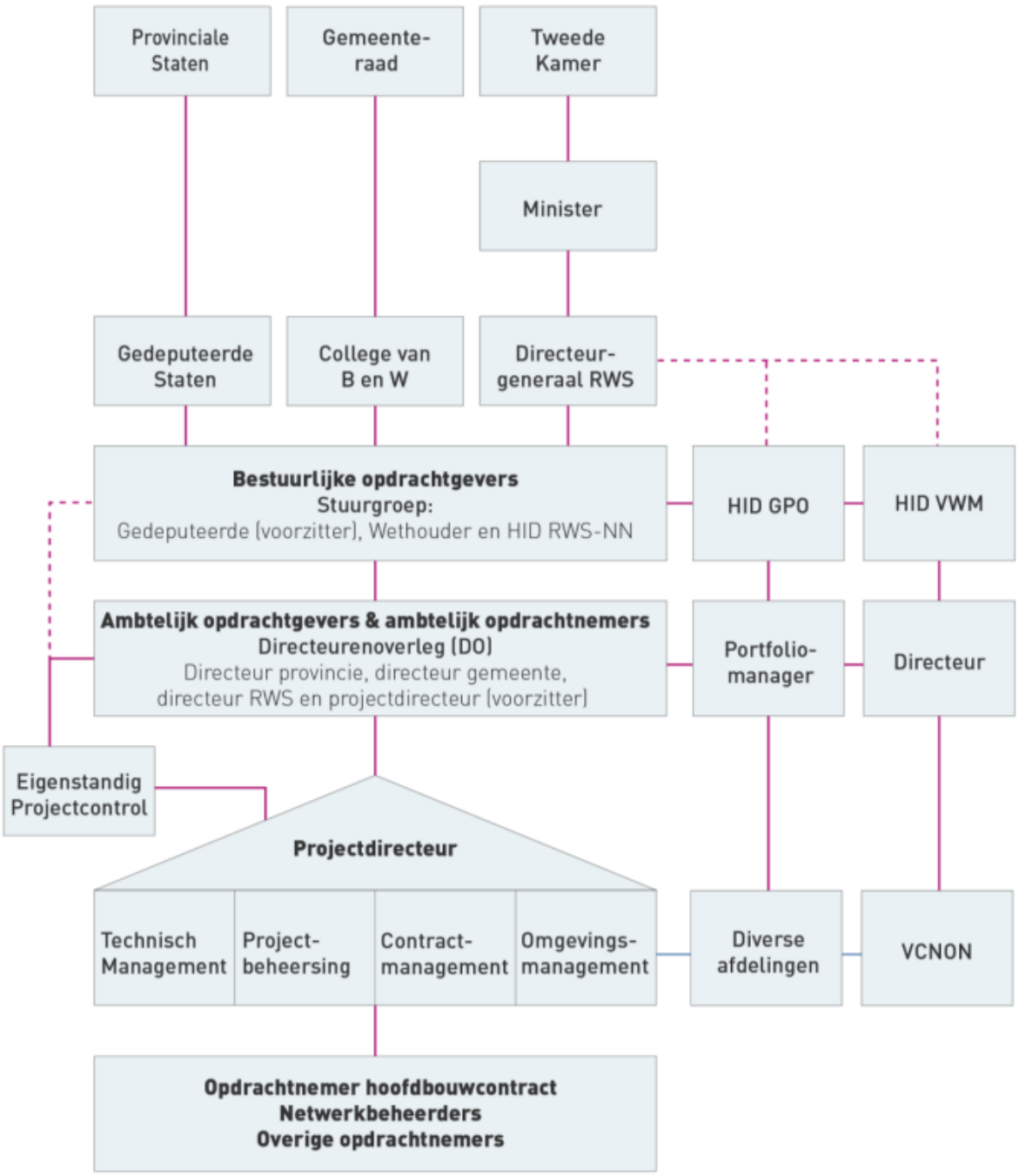

Figure 9: Governance model realization phase (Remkes et al., 2022)

4.2.3 Governance of project Afsluitdijk

As described in Chapter 3, the key public stakeholders of the Afsluitdijk project are: the State (the Ministry of I&W and Rijkswaterstaat), Province of Noord-Holland, Province of Friesland, the municipality of Hollandse Kroon and the municipality of Súdwest-Fryslân. The latter 4 public stakeholders formed a partnerships called DNA in order to establish their regional ambitions at the Afsluitdijk. The initial responsibilities and agreements between these public stakeholders have been established in the Bestuursovereenkomst Toekomst Afsluitdijk (De Afsluitdijk, 2011). The State is responsible for the water safety measures and the engineering structures. The regional partners are responsible for the regional ambitions, e.g. sustainable energy, recreational opportunities, etc. (De Afsluitdijk, 2011). The State will establish a project organization with its primary focus on water safety measures. The regional partners will establish a separate project organization for the regional ambitions (De Afsluitdijk, 2011). The project organization from the State will have a project manager from Rijkswaterstaat. The project organization from the regional partners will have a project manager from the Province of Friesland appointed by the regional partners (De Afsluitdijk, 2011; Gerkes, 2011).

Figure 10 shows the governance of the regional partners (DNA) of the project Afsluitdijk together with their relations to the project organization from RWS. The project organizations establish a joint Bestuurlijke Stuurgroep, where representatives of all public stakeholders will be involved. The meetings of this Bestuurlijke Stuurgroep will be used to discuss potential conflicts or disputes in the collaboration between the public stakeholders. Other topics can be the alignment and coordination of the water safety measures with the regional ambitions; important decisions and the progress of the project (De Afsluitdijk, 2011).

The project organizations have a joint project directors meeting, which is used for the alignment of water safety measures and the regional ambitions together with the coordination of the collaboration. This project directors' meeting consists of the project manager Water Safety (Rijkswaterstaat) and the project manager Regional Ambitions (DNA) (De Afsluitdijk, 2011; Gerkes, 2011).

The project team Regio Afsluitdijk is led by the project manager Regional Ambitions (Gerkes, 2011). The project organization Water safety measures is led by the project manager Rijkswaterstaat (De Afsluitdijk, 2011). The external communication of the project is jointly managed by both project organizations (De Afsluitdijk, 2011). For example, there is one website for the project instead of two separate websites for both project organizations (Gerkes, 2011).

At the Afsluitdijk project is a separate administrative agreement (Bestuursovereenkomst in Dutch) between the State and the Province of Friesland. This administrative agreement is not about regional ambitions, its focus is on the widening of the sluices and replacement of the bridges at Kornwerderzand. The Province of Friesland has the lead in this separate project called 'Verruiming Sluiscomplex Kornwerderzand' (in English: Widening Sluice Complex Kornwerderzand) and is formally seen as the initiator of the project. There is a Stuurgroep Verruiming Sluiscomplex Kornwerderzand with a representative of the Province of Friesland, Chief Engineer Director of Rijkswaterstaat (Midden-Nederland), representative of the Ministry of Infrastructure and Water Management, and the alderman of Finances of the municipality of Súdwest-Fryslân (Staatscourant, 2020). The Province of Friesland will establish a control group (Regiegroep Verruiming Sluiscomplex Kornwerderzand) where the State and the Province of Friesland will check whether the decisions and agreements of the administrative agreement are being executed properly and implemented (Staatscourant, 2020). Furthermore, a project management team is established that deals with the daily operations and execution of the project. The Province of Friesland appointed a project manager that leads this

project management team (Staatscourant, 2020). One of the respondents noted that it is not only the Province of Friesland that is involved with the Verruiming Sluiscomplex Kornwerderzand. The Provinces of Flevoland and Overijssel together with the municipality of Súdwest Fryslân are involved in the project Verruiming Sluiscomplex Kornwerderzand as well. This is also described in the administrative agreement (Staatscourant, 2020).

To summarize, there are two administrative agreements (Bestuursovereenkomsten) at the Afsluitdijk together with three project organizations. First, there is an administrative agreement between the State and the regional partnership De Nieuwe Afsluitdijk. Within this administrative agreement the following governance arrangements have been made: the project organization concerning the water safety measures is led by the State (Rijkswaterstaat) and the project organization concerning the regional ambitions is led by DNA. The second administrative agreement concerns the replacement of the bridges and the widening of the sluice complex at Kornwerderzand. This agreement is established between the Province of Friesland and the State. The Province of Friesland has the lead in this project and therefore established the project organization.
Rijkswaterstaat is involved in both projects. However, the project concerning the water safety measures is led by Rijkswaterstaat GPO (Grote Projecten en Onderhoud). Rijkswaterstaat Midden-Nederland is involved with the project Kornwerderzand (Staatscourant, 2020). In other words, two different departments of Rijkswaterstaat are involved at the Afsluitdijk.

4.2.4 PPP Afsluitdijk

The type of contract between Rijkswaterstaat and Levvel (the contractor) at the project Afsluitdijk is a DBFM contract (Rijkswaterstaat, n.d.). There is an extra finance and an extra maintenance component compared to the contract with Aanpak Ring Zuid. Levvel has the maintenance responsibility for 25 years after the project is finished (Rijkswaterstaat, n.d.). According to all respondents, this DBFM contract has an impact on the collaboration between the public stakeholders. First of all, the Kornwerderzand project is not inside the scope of Levvel. According to multiple respondents this increases the complexity of both projects. For example, one of the respondents mentioned there are over 150 interfaces between the operational or maintenance area of Levvel and the operational field of the Province of Friesland. This makes that when the Province of Friesland wants to change something involving the bridges, there is a significant chance that this will influence or touch the working field of Levvel. This could result in a contract change between Rijkswaterstaat and Levvel, because Rijkswaterstaat is their client.
Secondly, because Rijkswaterstaat is the client in these contracts, this makes the imaginary distance between the contractor and the region quite significant. Especially, as one respondent mentioned, because the contractor will maintain the Afsluitdijk for 25 years. For example, the contractor will have to apply for permits during this maintenance phase, which makes the distance to the region more significant.
Finally, interviewee 11 argues the following: '*This is just a bad contract. Not because it is written badly. It is the form of contract which is bad. It is just too complex. They do not leave enough room (…) to make arrangements to change things'.* According to this interviewee the complexity is not only due to the maintenance component, it is also the finance component which makes this form of contract too complex. This finance component increases the number of stakeholders with different interests, which results in an increase in complexity. Demirel et al. (2017) acknowledges that PPPs can become very complex due to their complex and long-term contracts. Due to this long-term relationship between client and contractor, the flexibility within contracts becomes more important (Demirel et al., 2017). As opted in the research of Demirel et al. (2017), managers and stakeholders of DBFM contracts should take proactive measures from the beginning in order to deal with potential

changes. Otherwise, reactive measures, which could lead to inefficiency and delays, are the only alternative.

To summarize, the contract form at the Afsluitdijk project is a Design, Build, Finance, and Maintain contract executed by the consortium Levvel. This contract, together with the fact of the two administrative agreements, make that the project becomes very complex. The DBFM contract increases the amount of stakeholders, whereas the project of the Province of Friesland touches the operational and maintenance area of Levvel by 150 interfaces. Interviewees from Rijkswaterstaat, DNA and the Province of Friesland agree that these factors influence the collaboration between the public stakeholders.

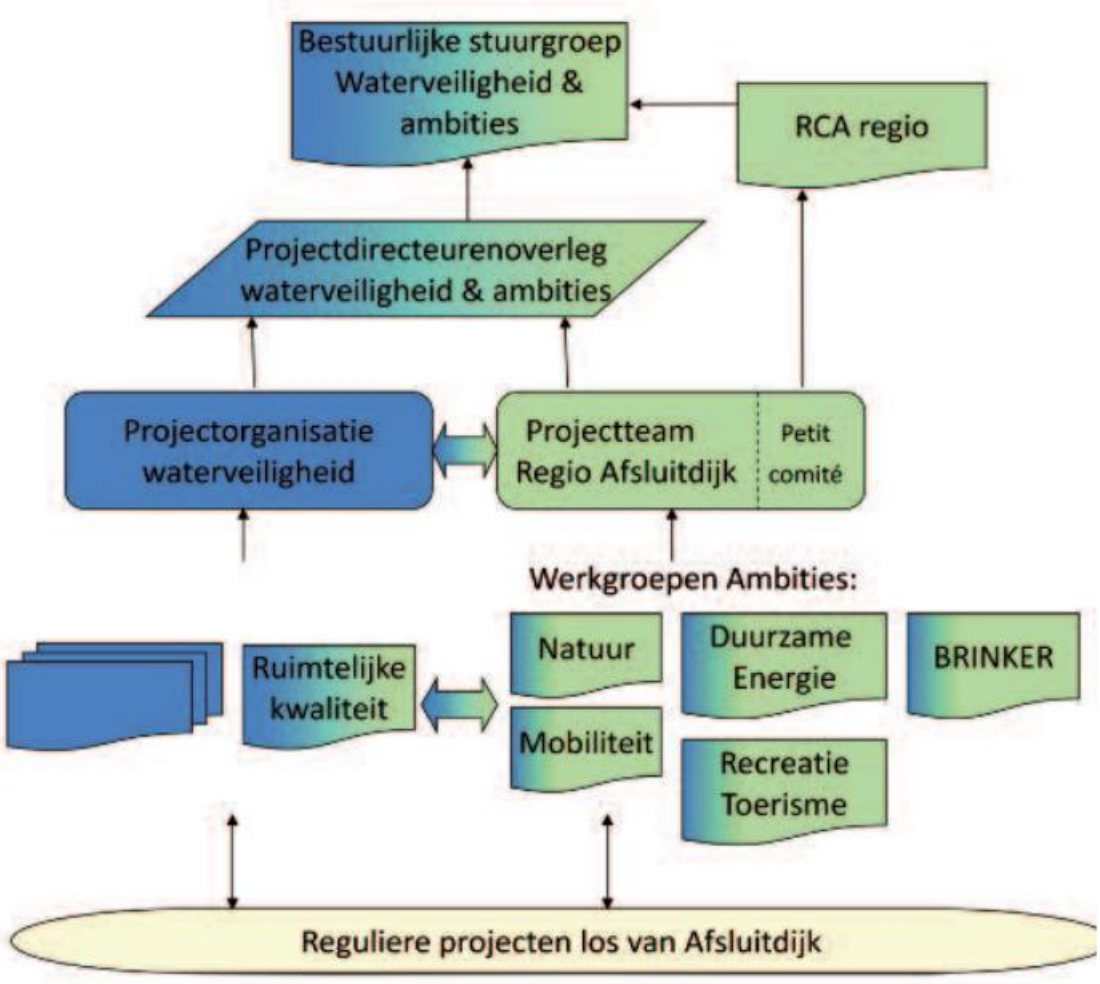

Figure 10: Ambitie Agenda Afsluitdijk: Triple A (Gerkes, 2011)

4.3 Communication

This section will discuss the indicator communication with the related sub-indicators communication channels, formality, culture, and internal/external communication. First, the communication of Aanpak Ring Zuid will be discussed. After Aanpak Ring Zuid the communication of the Afsluitdijk project will be discussed.

4.3.1 Communication in Aanpak Ring Zuid

In general, the structure of the formal meetings are defined in the administrative and realization agreements (BOK and the ROK). There are meetings at different levels in the project organization. The project director's meetings and the Stuurgroep meetings are a few of them. These meetings can be seen as the scheduled professional or formal communication as indicated by the overview of Butt et al. (2016). However, the formal communication should not be the only form of communication in a project organization is the general consensus among the respondents. It is important to have so-called 'coffee machine conversations' where the topic of the conversation is not necessarily about the project itself, but it can be about various other informal topics. According to the majority of the respondents it is important to get to know each other on a personal basis. This combination of formal and informal communication is also stressed in section 2.3 of this study based on the study of Butt et al. (2016).

At Aanpak Ring Zuid the internal communication is generally perceived as good. The majority of the interviewees indicate that the communication is clear and open, people are willing to explain documents and there is an informal communication culture. Various informal and formal communication channels are used within Aanpak Ring Zuid. Next to the formal meetings and phone calls there are various Whatsapp groups. Interviewee 6 describes this as the following: '*Yes, in addition to that, of course, we call, we app each other when necessary. (…) But that also applies to, not only with the project organization, but also with the province and Rijkswaterstaat. And as far as that's concerned, we have very open lines of communication. If necessary, we speak to each other in 10 minutes, so to speak, or right now. So as far as that's concerned, it's very easy to organize.'* Interviewee 1 indicates that the internal communication improved over the years at the administrative level. Interviewees 3 and 6 indicate that it helps that people know each other for a couple of years. It helps with the communication and to know what you can expect from each other. Furthermore, abbreviations and jargon are understood by most people and need less explanation compared to 'new' relationships.
Interviewee 5 does not share the general consensus of the good quality of internal communication. According to interviewee 5, they get no reaction or feedback from the project organization and it takes a long time until anything is done with their input. This complicates the collaboration between them and the project organization.

The internal communication is stage dependent according to the majority of the interviewees. These stages are not planning related, but situational. Interviewee 3: *'Of course, when things are going well, it is much less exciting, but when there is a hiccup, it is more important that you are together.'* When asked whether this ever occurred, interviewee 3 mentioned the following: '*We have had periods when the project was very exciting and we had meetings almost daily, even at the administrative level. So it's situational, it depends on the phase the project is in.'* Several other interviewees mentioned this stage dependency of the frequency of communication. Currently the project is going quite smoothly, resulting in a lower urgency of communication compared to the tense periods mentioned by interviewee 3.

The external communication is focused on the communication between the project organization and the societal environment. At both cases the project organizations have set up a joint external communication team. At both cases there is one website for the entire project. In the case of Aanpak Ring Zuid this seems logical, as it is a joint project organization with all three public stakeholders. As stressed in one of the former paragraphs, the internal communication is generally seen as smooth and clear. However, this creates a potential hazard when it comes to the external communication. Interviewee 3 describes this hazard as the following: *'Certainly if the mutual cooperation in such an administrative network goes very well and if the layers (…) also run very smoothly. Yes, then the chance of a sort of in-crowd party becomes very high. And then it's quite a battle to make sure that it is understood in the outside world. I think we can still win on that score.'* In other words, the cooperation between the public stakeholders at different layers runs very smoothly at Aanpak Ring Zuid. However, the potential hazard is the unclarity of the communication towards the outside world.

To summarize, the formal communication channels are defined in multiple agreements. In general the informal communication is seen as good. One of the interviewees perceived the communication as poor, since they either get no feedback or have to wait for a significant period of time. According to multiple interviewees the frequency of communication is stage-dependent. Currently the project is running smoothly, resulting in a lower frequency of communication. The external communication is jointly executed among the three public stakeholders.

4.3.2 Communication in Afsluitdijk

As stressed in the former section, the formal communication channels are set by the administrative and realization agreements. The establishment of relationships can be achieved via informal communication, such as the 'coffee machine conversations'. Especially when issues arise or setbacks occur it helps to have an established relationship between stakeholders. According to interviewee 7, communication and collaboration are about investing in the conversations and relationship with other stakeholders. It is about having conversations about what drives you, and what are your values? Asking those questions can help in establishing a relationship and create an understanding of other stakeholders' perceptions on situations within the project. The same respondent addresses the need to keep in-depth conversations when it comes to informal communication. Informal communication should not solely be fun, it should also be about the values other people have.

The majority of the respondents believe it is important to be able to call people when you need information or have a talk about issues. Following formal communication paths would create a certain distance in the collaboration. Furthermore, interviewee 10 said the following: *'Well, no, not every day, but sitting together regularly to get a feel for each other. Once you have that in place, you can start doing a lot of things digitally. Because there are progress meetings and then you know the agreements and you know the frameworks. But before that, if you're really puzzling things out, it's good to do that together, to sit down together physically, because then you can quickly clear up any ambiguities.'* Thus, according to interviewee 10 virtual modes of engagement are useful when a relationship has been established. But it helps when people sit together physically when you want to establish a fruitful relationship.

When it comes to internal communication, interviewee 7 mentions the following: *'I actually experience this cooperation positively at the moment. It's always been positive, but more positive and better than it was. Because we have a lot of informal conversations. And fewer surprises for each other these days, so to speak. (…) And even if it does happen, we don't attack or blame each other. When it happens we call each other, because I see it happen in practice, we call each other and say, what was the reason that it was placed in this way? And then we explain it to each other and say yes,*

I understand. (...) So I think there is a lot of mutual understanding at the moment.' In other words, according to interviewee 7, it is important not to surprise each other. And when it happens, people should pick up the phone and call each other to clear these issues quickly. It is important to know each other's interests and perceptions on situations according to the majority of the interviewees. Therefore, the phone calls are mentioned several times as an indication of 'good' cooperation. Multiple interviewees indicated that when people find them approachable and they know that when issues arise they can contact the other stakeholders quickly, there is good cooperation.

Overall, the consensus among the interviewees of the project Afsluitdijk indicates that there is an informal communication culture and the interviewees are satisfied with the current form of communication. The informal communication channels of phone calls and Whatsapp are indicated as important factors to establish well-working cooperation. However, regional stakeholders indicate that it can be difficult to find the person responsible within the State. Interviewee 11 indicates this as the following: *'We are always well informed and that is informal. So we are always in a good discussion about where our interests lie and how the State can help us. That does not always mean that the result will be there immediately. But we do talk about it and we are honest with each other about whether or not there is room to do something with it. So I think that is an open dialogue. The national government is a very large organization, so the project organization of the Afsluitdijk reinforcement is one thing, but on the other hand, when it comes to lock complexes, we are dealing with the organization of the central Netherlands and therefore not directly with the project organization. Well, that's division two. In addition, we have to deal with the nature conditions, and the water conditions, in all sections. And, then we have to deal with yet another club within Rijkswaterstaat. Well, it's quite difficult to bring all those different sections together and for other aspects we have to deal with the Ministry again. So it's yet another club other than Rijkswaterstaat. So if you add it all up, quite a search now and then to find the right people. But then again, we've known the organization for a while. So, generally speaking, it works.'* Interviewee 12 agrees with this argumentation by saying that Rijkswaterstaat can be seen as a *'multi-headed monster'* because of its several departments. In other words, it can become confusing and difficult for regional partners to communicate with the people from the State because of the organizational structure of the State.

In the case of the Afsluitdijk project, it had been decided to launch one message into the societal environment instead of having two or more separate websites. This communication team exists of employees of Rijkswaterstaat and De Nieuwe Afsluitdijk. According to some of the respondents, this joint external communication team experiences some tensions when it comes to collaboration. One of the reasons this tension exists is the differing interests between Rijkswaterstaat and DNA when it comes to the Afsluitdijk. Rijkswaterstaat has the interest of water defense and connectivity and wants to communicate technical facts about the Afsluitdijk. Whereas DNA is focused on the economy, ecology, and energy and wants to communicate about these subjects.
Another reason for this tension might be the cultural differences between Rijkswaterstaat and DNA. According to DNA, the procedures that are needed to send a message into the world are relatively heavy at Rijkswaterstaat compared to DNA. Several people have to check the message before it is released into the world resulting in rather bland messages, according to DNA. Another cultural difference concerns the regular working week and FTEs available between the different communication teams. At Rijkswaterstaat there are 4 FTEs available for the communication team, at DNA this is much lower. A third cultural difference, mentioned by interviewee 9: *'(…) Then it often has to do with culture. So it's really a different culture looking at work differently. At Rijkswaterstaat, I also work with a lot of self-employed people. They don't have office hours, they don't have Wednesdays or Fridays off. And in the cooperation with the region, we work with many people who are employed by the province. And there, time off is time off and that's fine too. But very often tasks*

are shifted to us and this does cause friction from time to time.' Thus, cultural differences between public stakeholders can cause friction regarding the collaboration between the public stakeholders. As described in section 2.3, cultural differences are not only related to ethnicity or nationalities (Butt et al., 2016; Eskerod & Jepsen, 2013). In the Afsluitdijk project, the cultural differences are about work ethic and the differences in job positions.
At the beginning of the Afsluitdijk project, one project organization with Rijkswaterstaat and De Nieuwe Afsluitdijk was proposed. The idea of one project organization was eventually not implemented. Interviewee 12 argues the following: *'In retrospect, I am very happy with it. Partly as a result of a number of reflections and conversations with others. (…) The cultures are, and the work processes are so different that it wouldn't have worked otherwise. So I think we now have got the maximum strength out of each other.'* According to interviewee 12, the separate project organizations work better because of the cultural differences between Rijkswaterstaat and the regional partners.

To summarize, informal communication channels are seen as a crucial factor when it comes to fruitful relationships and cooperation. In general, the communication between the public stakeholders is perceived as good, since all stakeholders are rather well approachable via informal communication channels (i.e. phone calls and Whatsapp). The State has various departments that are involved in the Afsluitdijk project and the Verruiming Sluizencomplex Kornwerderzand project. In some situations, this causes unclarity of responsibilities among the regional stakeholders. Finally, there are several cultural differences between the State and the regional stakeholders. The cultural differences do not relate to ethnicity or nationality, but to work ethic and job positions.

4.4 Trust

This section will discuss the indicator trust and the sub-indicators satisfaction, involvement, experiences, instruments, transparency, continuity, and calculative/normative trust. First in the case of Aanpak Ring Zuid. After discussing Aanpak Ring Zuid, the case of the Afsluitdijk project will be discussed.

4.4.1 Trust within Aanpak Ring Zuid

The feeling of being taken seriously is a factor that was often mentioned during the interviews. Interviewee 4 formulates this as follows: *'But that also has something to do with building relationships, that you take each other seriously in the interests you represent or the professionalism you are supposed to display and that you dare to be fair and open about it so that you build up a bit of trust. That is something between, yes it is not yet intangible, but it is something between people. There has to be some chemistry and trust between people.'* Multiple factors of relationships and trust are mentioned in this quote of interviewee 4. First, it is about taking the interests of other stakeholders seriously. Second, it is about daring to be fair and open to each other. Third, there has to be some chemistry between people. Multiple interviewees came up with these factors by using other words.

Interviewee 5 indicates that they had some moments in the realization phase of the project where they felt as if they were not taken seriously. Other interviewees did not mention anything similar. The feeling of being taken seriously can also be expressed by the willingness to listen to each other and respect each other's interests. According to interviewee 3, it is not only about listening to others, eventually, you should do something with it or at least show that you considered their interests when making a decision. According to interviewee 2, the sharing of each other's interests could have been better in the past. Currently, the project organization provides the Stuurgroep with a joint memo containing all facts and interests of the public stakeholders, making it easier to understand and respect each other's perceptions. This joint memo should have been introduced earlier in the project according to interviewee 2.

The second factor which is mentioned by interviewee 4, daring to be fair and open to each other, is mentioned by multiple interviewees. The factor of daring to be fair and open can also be seen as daring to be transparent. All interviewees that mentioned the factor of daring to be transparent to each other are satisfied with the way it is currently done. Interviewee 6 connects the factor of daring to be fair and open with the last factor mentioned in the quote of interviewee 4. *'And another important aspect, say in the cooperation, is of course the human relationship. To what extent do you relate as a person to the other people involved in the cooperation? (...) And especially when things get complicated, it's nice to have cooperation on a human level. Then you can tell each other the truth and then pat each other on the back and carry on.'*, according to interviewee 6. Multiple interviewees stress the importance of continuity when it comes to relationships on a human level. Interviewee 4 addresses, as was noted by interviewee 9 of the Afsluitdijk, that Rijkswaterstaat gets a lot of expertise from outside the organization. According to interviewee 4, these freelancers in the project organization negatively influence the continuity, and therefore the collaboration, of the project. A second argument against the use of freelancers, given by interviewee 4, is the awareness of the administrative consequences. Interviewee 4 describes this argument as the following: *'It's not just about continuity, it's also about the quality of the provision of information, for example, ultimately by the Gedeputeerde Staten and subsequently by the Provinciale Staten. Or to the Minister and then the Tweede Kamer. (…) And this creates additional noise, because it just doesn't get through to people at an early stage, even though it is a very essential factor for the acceptance of the final product by the ultimate client, the ones who holds the purse strings, the Gedeputeerde Staten.'* In other words,

according to interviewee 4, the use of freelancers and external knowledge by Rijkswaterstaat inside the project organization leads to a decrease in continuity and could have administrative consequences.
The importance of continuity regarding the establishment and maintaining of relationships is addressed by multiple interviewees. In general, these respondents are satisfied when it comes to the continuity of people in the project organization.

When it comes to instruments all interviewees indicate that there have been no workshops to enhance trust or relationships. Instruments that were mentioned by the interviewees are festive activities (e.g. BBQ), field trips, and network discussions. These are all instruments that stimulate informal conversations. Interviewee 3 indicates that during the complicated periods when there was tension between the contractor and the project organization, a third party was asked to perform process management.

The experiences with other projects matter to the current collaboration, according to multiple respondents. Interviewee 2 states: *'And we have the advantage that (…) I see the Chief Engineer Director on fifteen other projects and I see the Municipality of Groningen on twenty other projects as well. So you often bump into each other, and making use of that is, of course, part of the communication.'* The difference with other projects, according to interviewee 6, is the joint project organization. This is not common in regular municipal projects. However, all interviewees agree that the experience of other projects helps with the current organization because people know each other and each other's work ethic.

Regarding the calculative/normative trust, interviewee 2 mentions the following *'So you often meet each other and making use of that is of course also part of the communication and you never write that down in a ROK, you don't say uh the coffee machine talks should also be used. But ultimately they are used. They are perhaps the most effective in preventing problems.'* In other words, the formal communication and values are stated in the realization agreement. However, informal communication methods (or normative trust) are probably more valuable when it comes to the establishment of relationships and the prevention of problems. These informal communication methods are not stated in the realization agreement but ultimately are used in the project Aanpak Ring Zuid.

In general, the respondents indicate that they are satisfied with the current way of cooperation. However, a few interviewees indicate that cooperation with the Ministry of Infrastructure and Water Management (Ministry of I&W) can be quite problematic. Regarding the cooperation with the Ministry of I&W interviewee 4 mentions the following: *'There is no question of cooperation there.'* When asked to provide an example regarding this statement interviewee 4 indicates: *'It is a matter of we have to keep the Minister out of the wind. And everything else is secondary to that. (...) I find that such a narrow and scary way of seeing things. That there is no such thing as a very constructive overall fruitful relationship.'* However, when it comes to the cooperation with the other public stakeholders, including Rijkswaterstaat, all interviewees indicate that they are satisfied with the current way of cooperation.

To summarize, the feeling of being taken seriously is mentioned as a crucial factor when it comes to relationships and collaboration. The feeling of being taken seriously can be seen as the feeling of being involved in the project. One of the interviewees indicated that this feeling was missing at some moments during the realization phase. None of the other interviewees indicated anything similar. All interviewees agreed on the satisfaction with the daring to be transparent factor in the project. Furthermore, the importance of continuity and the experiences at other projects is acknowledged by

several interviewees. When it comes to the instruments, all interviewees indicate that there have been no workshops. Instruments that were mentioned during the interviews are festive activities, field trips, and network discussions. Regarding the calculative/normative trust, the formal communication and values are stated in the realization agreement. However, informal communication methods are equally important and not stated in the realization agreement. Finally, all interviewees are satisfied with the current way of cooperation between the public stakeholders. However, some interviewees experience a problematic relationship with the Ministry of Infrastructure and Water Management.

4.4.2 Trust within Afsluitdijk

The factor of being transparent to each other is often mentioned during the interviews. You should not be afraid to be honest about perceptions. According to interviewee 10, you should map the differing interests and move this map upwards in the administrative chain. In other words, you should prevent these differing interests become discussions at the operational level. Interviewee 11 describes the need to be able to communicate openly: *'In principle, everything must be open for discussion, otherwise you will not make any progress. You have different plans and different views. You have different political constituencies. Look, if our Gedeputeerde Staten says something about what they want to achieve and it is, contrary to what the State wants to achieve. And then I have a point of discussion and there is no point in hiding it. You have to be able to talk openly and honestly with each other about it. My view is that that is possible.'* In other words, interviewee 11 agrees that the communication is open and honest.

When it comes to being involved and being taken seriously, interviewee 10 mentions the following: *'We are taken very seriously. We are also included, we are questioned and if we say something, it is acted upon. Even if they don't always agree or think differently.'* Interviewee 10 further argues that it is important to show that you thought about someone's perspective or interests and that you considered it. This transparency helps to establish a relationship and it might also help when setbacks occur. All interviewees indicated that their input is being taken seriously by the other public stakeholders and in most cases, there is given feedback on whether the input is used. In other words, all interviewees feel involved when they provide other stakeholders their input or ideas.

Interviewee 8 acknowledges the fact that a regular infrastructure project takes 10 years from design to completion. They acknowledge there are very few people that work on the same project for 10 years. This brings us to the factor of continuity. Interviewee 8 indicates that because of the high chance of employee changes during the several phases of the project, you should make arrangements to guarantee the progress of the project. According to interviewee 8, this organizational structure has been established in the administrative and realization agreements. In other words, according to interviewee 8, the administrative and realization agreements do not only determine the formal communication routines as indicated in section 4.3. It also guarantees the progress of the project in case of employee exchanges. This relates to calculative trust, where the administrative and realization agreements are in place to ensure that you can always fall back on the agreements no matter who ends up in the job position.

When asked about the use of instruments for collaboration, the majority of the interviewees argued that informal conversations are the most valuable. Within the Afsluitdijk project festive activities (e.g. Dag van de Bouw) and field trips were mentioned as cooperation instruments. Other cooperation instruments were not mentioned during the interviews. Interviewee 7 argues the informal 'coffee' conversations are the most crucial when it comes to collaboration: *'Because you can then do these cooperation sessions, so to speak. You can do PSU and you can get team coaches involved. (…) I had a lot of conversations in the beginning, just informally, like, What's your angle on*

this? I also sat down with (…) several times for a simple coffee, but then for a whole afternoon. So we know each other pretty well. I think it helped in that respect, we really invested in each other and the relationship. Who are we? Why are we doing this? What do we want to achieve? We had a lot of conversations like that and we still have them now. So I've been thinking about whether we should have another team coach. I don't think so. We also had a session in which we asked two external people from the province and Rijkswaterstaat to map out the complexities and the steering relationship. That's what they did. But I don't think it made a difference. I think the difference came from the coffee drinking.' In general, the interviewees agree that informal conversations are the best instruments to establish a relationship. Solely focusing on formal communication methods would create a distance in the cooperation, according to interviewee 8.

The majority of the interviewees did not work with one of the other public stakeholders before. Interviewees 11 and 12 worked with Rijkswaterstaat before and acknowledge that it influenced the current cooperation between the public stakeholders. Interviewee 11 mentioned that the prior positive experiences concerning the collaboration with employees of Rijkswaterstaat influenced the current collaboration with Rijkswaterstaat positively. Interviewee 11 indicates that when you know people well and you already had a pleasant cooperation with people before, it becomes easier to continue this pleasant cooperation. Furthermore, when you already established some trust at the prior projects this will help with the current cooperation, according to interviewee 11. Interviewee 12 indicates that the experiences of prior projects with Rijkswaterstaat educated them on the organizational structure of Rijkswaterstaat. Interviewee 12 mentions that when assignments weren't clear at the Afsluitdijk project, they went to the top of the administrative chain to discuss how the situation could be resolved. In the end, this helped a lot concerning the development of certain projects. Without this prior experience concerning the organizational structure, interviewee 12 might not have been able to change the development of these certain projects. In other words, experiences at other projects do matter when it comes to current or future collaboration with the same stakeholders.

In general, all interviewees indicate to be satisfied with the current cooperation between the public stakeholders. Multiple interviewees indicate that they are not always satisfied with the outcome, but that they are satisfied with the way in which there is a cooperation between the public stakeholders. When asked why the interviewees are satisfied with the current way of cooperation, interviewee 10 summarizes it quite well: *'(…) people are honest and people understand each other, want to cooperate and want to do good things together.'*

To summarize, in general, the respondents are satisfied with the current way of cooperation between the public stakeholders. People are transparent and honest, which helps to establish a relationship. Besides, all interviewees experience that their input is being taken seriously. The crucial instrument, according to the majority of the interviewees, are informal conversations. Other cooperation instruments do not work as well as the informal 'coffee' conversations according to the interviewees. Finally, the majority of the respondents did not work together before the Afsluitdijk project. The interviewees who did work together with a public stakeholder before indicated that their prior experiences did influence the current cooperation with the public stakeholder.

5. Analysis and discussion

This chapter will entail the analysis and discussion of the findings in Chapter 4. First, an analysis is done per case. This analysis exists of the description of trends and patterns per indicator. Second, a cross-analysis between the cases is provided. Finally, the analyses are compared to the findings in the literature.

5.1 Analysis Aanpak Ring Zuid

The first indicator discussed in the results section is the institutional setting of Aanpak Ring Zuid. The opinions about the joint project organization differ. Some of the respondents argue the joint project organization works well and should be served as an example for future (infrastructure) projects. Others argue that it increases the complexity of the project. One of the results of the joint project organization is a division between the one who pays for the project and the one who has the lead in the project. Because of budget- and time overruns this created a conflict between the State and the Province of Groningen at the administrative level. Remkes et al. (2022) consider the choice to divide the management responsibility and the financial responsibility as a 'weeffout' (i.e. a mistake in the organizational structure). All respondents indicated that all public stakeholders made an effort to prevent the conflict from trickling down the administrative chain.

Besides the organizational structure of the project, the PPP contract was discussed. About half of the respondents argued that the choice of contract (PPP or traditional) does not matter when it comes to the cooperation between the public stakeholders. The interviewees that argued that the choice of the contract does not influence the cooperation between the public stakeholders are government officials of the municipality of Groningen. The government officials of Rijkswaterstaat and the Province of Groningen all argued that the choice of contract does matter when it comes to the cooperation between the public stakeholders. This leads to the discussion whether the conflict at the administrative level, in other words who pays for the cost-overruns, might have affected the opinions on whether the choice of contract does influence the cooperation between the public stakeholders.

The second indicator discussed in the results section is communication. The internal communication can be divided into formal and informal communication. The formal communication has been defined in the realization agreement. The informal communication concerns phone calls, Whatsapp, and 'coffee machine' conversations. The communication is open and clear and there is an informal communication culture. The frequency of communication is dependent on the progress of the project. Interviewees indicate that when the project experienced issues, the frequency of communication increased. The external communication of the project is executed jointly among the public stakeholders.

The final indicator is trust within Aanpak Ring Zuid. One of the interviewees indicated that they did experience the feeling of not being taken seriously during the realization phase of the project. None of the other interviewees felt this way. All interviewees indicate their satisfaction with the current way of cooperation and the current transparency when it comes to sharing ideas and input. Interviewee 4 indicates that the continuity can be negatively influenced by the hiring method of Rijkswaterstaat. The amount of external personnel threatens the continuity of the project according to interviewee 4. When it comes to continuity, it helps when people have experience or know each other from other projects. The familiarity with each other's work ethic contributes to better cooperation.
It is important to stress that continuity is not only dependent on internal factors, like hiring policies of Rijkswaterstaat. The continuity of a project at the administrative level can be influenced by elections. At Aanpak Ring Zuid, an example of the municipal elections is provided. As indicated by

one of the interviewees, a change of aldermen might take another 1 to 2 years to establish a relationship and to convince them of the project goals.

5.2 Analysis Afsluitdijk

The project governance of the Afsluitdijk exists of three different project organizations. One of them is focused on water safety measures and is led by the State (Rijkswaterstaat). The second project organization is focused on regional ambitions and is led by De Nieuwe Afsluitdijk with its project director from the Province of Friesland. The third project organization is focused on the widening of the sluices and the replacement of the bridges at Kornwerderzand. This project organization is led by the Province of Friesland. Several departments of Rijkswaterstaat are involved in these different project organizations. According to the majority of the interviewees, the choice of contract has made the project Afsluitdijk more complex. The number of stakeholders increased and the operational field of the contractor and the Province of Friesland has 150 interfaces. Furthermore, the regional stakeholders do not have the authority to contact the contractor of the project Afsluitdijk directly.

The formal communication is defined in several administrative and realization agreements. Informal communication is seen as crucial when it comes to the establishment of fruitful relationships. It is important not to surprise each other and to be able to call each other when issues arise. Solely focusing on formal communication would create a distance in the cooperation, according to the interviewees. Furthermore, the involvement of multiple Rijkswaterstaat departments increases the complexity when it comes to communication between the State and the regional stakeholders.

The external communication is executed jointly among the public stakeholders. However, some cultural differences arise when looking at the joint communication team. The procedures at Rijkswaterstaat and the work ethic of the regional stakeholders are both mentioned as cultural differences that can cause friction in the cooperation between the public stakeholders.

The communication at the Afsluitdijk is honest and open according to multiple interviewees. This is important because the majority of the interviewees argued that the informal communication is the most valuable when it comes to the establishment of trust and relationships. Other instruments are used during the Afsluitdijk project, but the informal ‘coffee’ conversations are crucial when you want to establish a fruitful relationship. All interviewees indicated that their input is being taken seriously and that they all feel involved. Although not all interviewees are satisfied with the outcomes of the cooperation between the public stakeholders, they are all satisfied with the cooperation itself.

5.3 Cross-analysis Aanpak Ring Zuid – Afsluitdijk

The institutional setting between Aanpak Ring Zuid and the Afsluitdijk differs at multiple factors. First, the organizational structure between the projects is completely different. At Aanpak Ring Zuid, one of the interviewees argued the joint project organization should serve as an example for future (infrastructure) projects. At the Afsluitdijk, one of the regional partners argued that he/she was glad that the joint project organization was not implemented. Cultural differences and work processes were mentioned as factors that would have complicated the cooperation in a joint project organization.

Besides the difference in organizational structure, the contracts at both projects differ. The D&C contract at Aanpak Ring Zuid, according to some interviewees, does not influence the cooperation between the public stakeholders. However, the respondents of Rijkswaterstaat and the Province of Groningen agree that the contract did influence the cooperation between the public stakeholders. The DBFM contract at the Afsluitdijk project increased the number of stakeholders and has an extra maintenance component compared to the D&C contract of Aanpak Ring Zuid. The majority of the

interviewees argue that these factors increase the complexity of the contract at the Afsluitdijk project. It is even be named a bad contract by one of the respondents due to its complexity.

The cases show several similarities when it comes to the internal and external communication. The formal communication is in both cases defined in the administrative and realization agreements. The importance of informal communication is mentioned in both cases. Although some cooperation instruments (e.g. festive activities and network discussions) are used in both cases, the consensus among all interviewees is that the informal conversations at the coffee corner are the most valuable. Finally, the external communication is executed jointly at Aanpak Ring Zuid as well as the Afsluitdijk. However, the experiences with the joint communication team are different. At Aanpak Ring Zuid, there are little disputes within the communication team when it comes to the message to the societal environment. Interviewees at the Afsluitdijk indicated that there is tension on the cooperation within the joint communication team. The communication teams of Aanpak Ring Zuid and the Afsluitdijk both consist of employees of Rijkswaterstaat, Provinces and municipalities. Cultural differences were argued as causes for this tension by interviewees of the Afsluitdijk. However, the difference between the communication teams of Aanpak Ring Zuid and the Afsluitdijk might be in the organizational structure of the projects and the interests of the public stakeholders. At Aanpak Ring Zuid, there is a joint project organization that has one common goal (i.e. one interest to the outside world). At the Afsluitdijk, there is a joint communication team of two separate project organizations (Rijkswaterstaat and DNA), with differing interests. Rijkswaterstaat has the interests of water safety measures and connectivity. DNA has interests related to economy, ecology and energy. This may manifest itself as tension between the communication team members.

As discussed in the former paragraph, cultural differences between the public stakeholders were more apparent at the interviewees of the Afsluitdijk than at Aanpak Ring Zuid. The interviewees of Aanpak Ring Zuid did not indicate cultural differences evidently. At the Afsluitdijk project, multiple cultural differences were indicated by the national stakeholders as well as the regional stakeholders. The cultural differences often focused on differing perceptions of job positions, work ethic and work processes.

The importance of continuity is mentioned by multiple interviewees at both projects. According to one of the respondents at Aanpak Ring Zuid, the hiring policy of Rijkswaterstaat threatens the continuity of the project. One of the interviewees at the Afsluitdijk acknowledges that continuity is a volatile factor in an infrastructure project, but they blame the time span of the project and not the hiring policies of authorities. This does not alter the fact that continuity is in both projects seen as a crucial factor when it comes to the establishment of relationships and the progress of the project.

To summarize, the institutional settings of Aanpak Ring Zuid and the Afsluitdijk differ. Aanpak Ring Zuid has a joint project organization, whereas the Afsluitdijk has three project organizations. Secondly, the Public-Private Partnerships differ between the two cases. Aanpak Ring Zuid used a D&C contract and the Afsluitdijk used a DBFM contract.
The communication showed several similarities between the cases. The formal communication is in both cases defined in the administrative and realization agreements. This entails official meetings and decisions structures. The ‘coffee’ conversations are defined as the most valuable form of informal communication in both cases. The external communication is in both cases executed jointly. However, at Aanpak Ring Zuid there were little comments made about cultural differences during the interviews. The comments about cultural differences were often mentioned during the interviews at the Afsluitdijk.
Continuity appeared to be an important factor within the indicator trust. Several interviewees of both cases had opinions on why continuity is important and how this can be done better.

5.4 Discussion

Dietrich et al. (2010) argued that collaboration is about pursuing a common goal in a project. According to some of the respondents in this study, the pursuing of a common goal is not a crucial factor when it comes to collaboration. According to these respondents, collaboration without a common goal is possible as long as the interests or goals of one stakeholder do not harm the interests or objectives of other stakeholders. However, these respondents agree with Ayegba et al. (2018) and Dietrich et al. (2010) that in order to collaborate it is crucial to know other stakeholder's interests and objectives.

As stressed in section 4.2.2, the fact that some of the interviewees at Aanpak Ring Zuid indicate that the choice of contract does not influence the cooperation between the public stakeholders is noteworthy. Especially, since PPP literature argued otherwise. De Schepper et al. (2014) argue that Public-Private Partnerships increase the complexity of stakeholder dynamics and the stakeholder environment. This led to the assumption that public stakeholders would agree that the choice of contract influences the public stakeholder dynamics.
At the Afsluitdijk project the consensus among the interviewees was that the contract does influence the cooperation between the public stakeholders. Multiple reasons are provided what causes the increased complexity. The unique situation at the Afsluitdijk is the existence of three project organizations. The three different project organizations at the Afsluitdijk cause two issues, according to the interviewees. One, there are over 150 interfaces between the operational and maintenance areas of the Afsluitdijk project and the Verruiming Sluiscomplex Kornwerderzand. Second, the regional stakeholders are not the client and therefore cannot communicate directly with the contractor. This might complicate the maintenance phase of the project, since the contractor will maintain the majority of the Afsluitdijk for 25 years and therefore has to apply for permits at the regional stakeholders. The unique situation of having three separate project organizations at one location cannot be found in PPP literature. However, the third argument for the increased complexity of a DBFM contract, the large number of stakeholders, has been mentioned multiple times in PPP literature (e.g. Demirel et al., 2017; De Schepper et al., 2014). The large number of stakeholders creates a dynamic stakeholder environment resulting in a higher chance of changes during the project. Therefore, resulting in a more complex project (Demirel et al., 2017; De Schepper et al., 2014).

The importance of a combination of formal and informal communication is stressed by Butt et al. (2016). The study of Butt et al. (2016) agrees that informal conversations contribute to the establishment of trust and relationships as was found in this study. Further, Butt et al. (2016) studied project cultures and acknowledges that cultural differences in work ethic and education can create tension on the collaboration between stakeholders. This is also stressed by some of the interviewees of the Afsluitdijk, who argued that tensions within the communication team is caused by cultural differences between the organizations.

The discontinuity of management was acknowledged by Greiman (2013). The argument for the discontinuity of management given by Greiman (2013) was the time span of regular infrastructure. This complements with the statement by interviewee 8, who stated that the cause of the continuity issues was the time span of the Afsluitdijk project. However, Greiman (2013) also stated that some scholars argue that the discontinuity of management leaves room for creativity which benefits the project. This statement is not shared with the interviewees. All interviewees that mentioned continuity saw discontinuity as a threat to the establishment and maintaining of relationships. According to Greiman (2013), other scholars argued discontinuity would lead to a loss of institutional knowledge, which is exactly what one of the respondents at Aanpak Ring Zuid fears due to

Rijkswaterstaat's hiring policies. According to this interviewee, the freelancers of Rijkswaterstaat underestimate the importance of the provision of knowledge to the Gedeputeerde Staten, and this can cause additional noise.

6. Conclusions and recommendations

This chapter will discuss the answers to the main research question and its sub-questions. First, concise answers to the sub-questions will be provided, ending with lessons learned and recommendations for current and future infrastructure projects.

What are indicators for collaboration?

The systematic literature review resulted in five indicators: institutional setting, communication, trust, commitment and stakeholder management strategies. The first three indicators were chosen in this study. The indicators consist of deductive and inductive factors or sub-indicators that make the indicator more measurable. The institutional setting consists of the maintenance, administrative consequences, project governance, and contracts. By project governance we mean the organizational structure of the project. The contract describes the contract between the project organization and the contractor. Both cases chose to use a Public-Private Partnership, where some of the risks are transferred to the private stakeholders. The second indicator is communication and exists of the factors: communication channels, formality, culture and internal/external communication. The third and final indicator is trust and exists of the factors: continuity, satisfaction, involvement, experiences, instruments, transparency, and calculative/normative trust.

What does the public-public partnership currently look like in the context of Rijkswaterstaat?

The public-public partnership at Rijkswaterstaat differs per case. This study focused on the cases of Aanpak Ring Zuid and the Afsluitdijk. All stakeholders indicated to be satisfied with the current way of cooperation. The respondents all agreed that in order to effectively collaborate it is necessary to know other stakeholder's interests and objectives. Some of the respondents argued that these interests or objectives can be complementary to each other, but do not necessarily have to be complementary. These respondents argue that a common goal is not crucial to collaboration, although project management literature argues it is crucial to collaboration.

Are there differences and/or similarities in the public-public partnership between Aanpak Ring Zuid and the Afsluitdijk?

The institutional setting differs between Aanpak Ring Zuid and the Afsluitdijk. Aanpak Ring Zuid has a joint project organization with all three public stakeholders. The contract at Aanpak Ring Zuid is a Design & Construct contract. The Afsluitdijk has three different project organizations. Rijkswaterstaat, De Nieuwe Afsluitdijk and the Province of Friesland all have a leading role in one of the project organizations. The contract at the Afsluitdijk is a DBFM contract which is seen as a factor that increases the complexity of the project.

The formal and informal communication is similar in both cases. The formal communication is defined in the administrative and realization agreements. Some instruments (e.g. festive activities or network discussions) are used when it comes to informal communication, but according to the interviewees the most crucial communication factor for collaboration are the 'coffee' conversations. This helps with getting to know each other and understand other stakeholder's perceptions on issues.

The external communication is jointly executed at both cases. However, the cooperation between stakeholders in the communication team of the Afsluitdijk can sometimes be experienced as tense. This is not mentioned when discussing the communication team of Aanpak Ring Zuid. This study argues that it is a combination of cultural differences and differing interests that cause the tension at the Afsluitdijk.

What lessons can be drawn related to the public-public partnerships from both projects?
The first lesson is to acknowledge the importance of continuity and the factors that can influence this continuity. Multiple interviewees and scholars acknowledged the importance of continuity for the establishment of relationships and the progress of a project. Continuity can be affected by different factors on different levels. Elections can influence the continuity of people at the administrative level. One of the interviewees indicated that a change of aldermen might result in 1 to 2 years of relationship building. Another interviewee indicated that the hiring of freelancers by Rijkswaterstaat threatens the continuity at other levels of the project organization. The danger of discontinuity is the loss of institutional knowledge and the establishment of shallow relationships. Both factors might harm the progress of the project.

The second lesson is to focus on informal communication when it comes to the establishment of relationships. Multiple interviewees indicated that physical 'coffee' conversations are a crucial factor to establish relationships, especially in the beginning of the process. The respondents indicated that the informal 'coffee' conversations contribute to a relationship on a personal basis and an understanding of each other's perceptions. Multiple respondents argued that a focus on only formal communication would create a distance in the collaboration between stakeholders. Furthermore, cooperation and communication are situational in a project and issues might arise quickly in a complex infrastructure project. It is important to have an informal basis to prevent these issues from escalating.

The final lesson of this study is the need to understand other stakeholder's interests. The feeling of being taken seriously has been mentioned several times during the interviews. However, the real question is: do the other stakeholders know what my interests are and do they make decisions with respecting my interests? One of the interviewees indicated that a joint memo containing all the facts and interests of stakeholders makes it easier to understand and respect other's perceptions. According to this interviewee, this memo should have been implemented in the project earlier. It can be an essential tool to understand perceptions and to safeguard the involvement of other stakeholders.

To conclude, this study found five indicators for collaboration. Of these five indicators, the institutional setting, communication and trust were chosen to be used as indicators in this study. The public-public partnership in the context of Rijkswaterstaat differs per case. The cases of Aanpak Ring Zuid and the Afsluitdijk showed several differences when it came to the institutional setting, but they also showed similarities when it came to communication and trust. In the end, we formulated three lessons that can be drawn from the results of this study. First, the acknowledgement of the importance of continuity is crucial. Second, there should be a focus on physical informal communication from the start of the project. Finally, the knowledge and understanding of stakeholders' interests make it easier to understand and respect other stakeholder's perceptions.

7. Reflections and limitations

This research contributed to the scientific debate by providing knowledge on the cooperation between a project organization and other public stakeholders. Several scholars studied the cooperation between public and private stakeholders, but knowledge on public-public partnerships was missing. Therefore, this research bridged that gap and provides project managers insights on the current cooperation between public stakeholders in Dutch infrastructure projects.

This research also has several limitations. First of all, this research is based on two case studies. This limits the generalization of the research. To get a more generalized understanding of the collaboration between public stakeholders, future research could focus on more case studies. Second, this research is based on 13 interviews. Six of these interviews were conducted at Aanpak Ring Zuid and seven of these interviews were conducted at the Afsluitdijk. The relatively small number of interviewees per case increases the impact of interviewee's opinions. A larger set of interviewees will create a more generalized view on the cooperation between the public stakeholders. Therefore, future research could conduct a larger set of interviews at each project to provide a more generalized view of the cooperation within Aanpak Ring Zuid and the Afsluitdijk. Third, the research used three indicators, whereas the systematic literature review resulted in a total set of five indicators. Three indicators were chosen because of the limited time frame of the research. The analysis of interviews with five indicators would have taken too long. Therefore, the choice was made to focus on three indicators to show what the current cooperation at the Dutch infrastructure projects looks like. Instead of focusing on three indicators, future research can focus on the five indicators as provided in Table 2 of this research.

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Appendices

Appendix 1: Informed Consent Form

Ik

(naam participant)

stem toe mee te doen aan een onderzoek dat uitgevoerd wordt door

Simon Pot / 0651737613 / s.h.pot@student.rug.nl

Ik ben me ervan bewust dat deelname aan dit onderzoek met als titel

Collaboration within infrastructure projects: What lessons can be drawn from the partnerships between the project organisation and public stakeholders?

geheel vrijwillig is. Ik kan mijn medewerking op elk tijdstip stopzetten en de gegevens die verkregen zijn uit dit onderzoek terugkrijgen, laten verwijderen uit de database, of laten vernietigen. De onderzoeker draagt zorg voor een veilige dataopslag.

1. Het doel van dit onderzoek is

Om te onderzoeken in hoeverre samenwerking tot stand is gekomen tussen de project organisatie en de maatschappelijke omgeving, in dit onderzoek te weten gemeente en provincie.

Deelname aan dit onderzoek zal meer inzicht geven omtrent

De huidige samenwerking tussen de projectorganisatie en de gemeente en provincie.

2. Het hele interview zal ongeveer 45-60 minuten duren. Voorafgaand aan het interview zal de onderzoeker uitleggen waar het onderzoek over gaat.

3. De gegevens die verkregen zijn uit dit onderzoek zullen vertrouwelijk worden behandeld. De gegevens zullen anoniem worden gerapporteerd en zijn alleen voor de onderzoeker beschikbaar.

4. De onderzoeker maakt alleen opnames van het interview als hier mondeling en schriftelijk toestemming voor is gegeven aan het begin van het gesprek.

5. De onderzoeker zal alle verdere vragen over dit onderzoek beantwoorden, nu of gedurende het verdere verloop van het onderzoek.

Ik geef toestemming dat het interview wordt opgenomen (graag omcirkelen wat van toepassing is):

JA / NEE

Datum:	Handtekening onderzoeker:

Datum:	Handtekening participant:

Appendix 2: Interview guide

Research question: *In what way has collaboration been established between the project organization and the public stakeholders in the realization phase of infrastructure projects?*

Sub-questions:

1. *What are indicators for collaboration?*
2. *What does the public-public partnership currently look like in the context of Rijkswaterstaat?*
3. *Are there differences and/or similarities in the public-public partnership between Aanpak Ring Zuid and the Afsluitdijk?*
4. *What lessons can be drawn related to the public-public partnerships from both projects?*

Translation sub-questions:

1. *Wat zijn indicatoren voor samenwerking?*
2. *Hoe ziet de publieke-publieke samenwerking er momenteel uit in de context van Rijkswaterstaat?*
3. *Zijn er verschillen en/of overeenkomsten in de publieke samenwerking tussen Aanpak Ring Zuid en de Afsluitdijk?*
4. *Welke lessen kunnen worden getrokken met betrekking tot de publieke samenwerking uit beide projecten?*

Indicators collaboration:

1. Institutional setting
2. Communication
3. Trust

I Introduction

1. Introducing myself

My name is Simon Pot, I am 23 years old and I am from Groningen. I am studying the master Environmental and Infrastructure Planning at the University of Groningen. Since March, I have been working as an intern at Rijkswaterstaat on the Southern Ring Road and Afsluitdijk projects. I am mainly concerned with communication during my internship.

2. Why is this interview conducted?

This interview is conducted to support my research into the cooperation between the project organisation and the social environment. This research looks at the representatives of the social environment, namely the municipality and provinces.

3. What happens with the information/results?

The interview will be written out and it will be examined what information from the interview can help me answer my research question. The results of the collected data will be used to answer my main and sub questions of my master thesis.

4. What happens with the data?

Your answers within this interview will be handled with care. Only I will know that you have given me these answers, and I will process your answers and information anonymously within my Master's thesis. You can also stop the interview at any time and have the collected data deleted.

5. Ask for consent to record the interview

May I record the interview? This way I can transcribe the interview afterwards and process it within my master's thesis. Only I will be in possession of this recording. (Let the respondent sign the 'Informed consent form')

6. Ask for consent to start the interview

I have checked all the important aspects, do I have your permission to interview you?

II Opening questions
Ask opening questions to introduce the subject 1. Could you briefly describe your position within (Rijkswaterstaat, Province, Municipality, DNA)? 2. To what extent are you involved in the project? 3. With whom do you have the most contact/co-operation?

III Sub-question 1: Concept collaboration
Sub-question 1: What are indicators for collaboration?
1. What do you understand by the term cooperation? - *Indicators within my research: institutional setting, communication and trust*
2. How do you experience the cooperation between the project organisation and your organisation? - How do you measure whether this is going well or not? (try to extract indicators) - A feeling? But what makes this feeling?
3. What tools are used for cooperation? - Example instruments: workshops, space for informal discussions, drinks, open atmosphere, addressing one another, etc. - What are you doing to promote cooperation? - How does your organisation facilitate cooperation?
4. Which tools work better and which tools work less well? - And why is this?

IV First indicator: Communication
Indicator 1: Communication
1. What is the communication like between your organisation and the project organisation? - How often contact? - Through which communication channels? - Mainly formal or informal? - Purpose of the communication (informative, decision-making, ...)
2. What do you think of the communication between you and the project organisation? - Frequency: enough/too little?

3. Is the project organisation communicating with you in a clear and transparent way? - Professional jargon? - Abbreviations?
4. Does this way of communicating also have an effect on cooperation? - How big is this effect? - Where do you see that it does (not) have an effect on it?

V Second indicator: Trust
Indicator 2: Trust
1. Are you satisfied with the way they work with you? - If yes, why? → Examples? - If not, why not?
2. Do you feel that something is done with your input when you present it to the project organisation?
3. Have you been involved in Rijkswaterstaat projects before? - Your experience of cooperation in previous projects - Your experience of cooperation in the current project - Influence of previous experience on your approach to the current project - Does your involvement in this project differ from previous projects?

VI Third indicator: Institutional setting
Indicator 3: Institutional setting
1. To what extent do the agreements made (governance, risk, financing) affect the cooperation between the project organisation and your organisation?
2. Does the contractor contract affect the cooperation with you and the project organisation? - If so, how can you tell? - If not, why do you think not?

VII Concluding questions
Do you have any further comments on this interview? Do you have any questions about my research? *I hereby conclude the interview. Thank you very much for your cooperation. When the research is finished, I will send it to you. (+informing about the mini-symposium).*

Appendix 3: General information on participants

Interviewee	Governmental institution	Project
Interviewee 1	Rijkswaterstaat	Aanpak Ring Zuid
Interviewee 2	Province of Groningen	Aanpak Ring Zuid
Interviewee 3	Province of Groningen	Aanpak Ring Zuid
Interviewee 4	Province of Groningen	Aanpak Ring Zuid
Interviewee 5	Municipality of Groningen	Aanpak Ring Zuid
Interviewee 6	Municipality of Groningen	Aanpak Ring Zuid
Interviewee 7	Rijkswaterstaat	Afsluitdijk
Interviewee 8	Rijkswaterstaat	Afsluitdijk
Interviewee 9	Rijkswaterstaat	Afsluitdijk
Interviewee 10	Rijkswaterstaat	Afsluitdijk
Interviewee 11	Province of Friesland	Afsluitdijk
Interviewee 12	De Nieuwe Afsluitdijk	Afsluitdijk
Interviewee 13	De Nieuwe Afsluitdijk	Afsluitdijk