

**Re-examining the impact of megaproject governance on  
project performance:  
A case study of the Afsluitdijk, The Netherlands**

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The Dutch coastline is longer than 400 kilometres, and today about a third of the country lies below average sea level (van Koningsveld, 2008). Hence, water security and management have always been crucial for the Netherlands, making the Dutch people a world leader in water technology and infrastructure (Krever & Black, 2021). Without its innovation and investments in water security infrastructure, such as a network of dykes, profound parts of the country would be flooded, as figure 1<sup>1</sup> illustrates. The vulnerability of the Netherlands to flooding has become strongly apparent in the impactful floods of 1916, which triggered a project to close the Zuiderzee lagoon: The enclosure dam of the IJsselmeer, formally known as the Afsluitdijk (van Koningsveld, 2008). The first plans for the dam with the main purpose of improving food supply by enclosing more land were already made in 1891. However, it took an immense flood disaster and a growing need for farmland during the first World War to convince the Dutch government to start constructing the Afsluitdijk. Initial project goals have therefore concentrated on protecting hinterlands against floods, enclosing new land from the sea, creating a freshwater reservoir, and creating a road connection between the provinces of Friesland and North Holland (Vogt, 2019).

The Afsluitdijk is a complex system constantly exposed to a changing physical and practical environment. For example, in 2006 assessment of the dyke showed that the Afsluitdijk would not be able to hold future flood risks due to the accelerating sea-level rise through climate change which led to the new planned constructions of building the dyke even higher. It is crucial for a project like the Afsluitdijk to anticipate change and be adaptive, meaning that it needs to be flexible in redefining current and future objectives that might differ from the original ones. To add another layer of complexity to this changing environment, the Afsluitdijk has evolved from something that was first and foremost a water barrier to a multistakeholder system that looks beyond the topics of sole water security or food supply but envisions the dam as an innovative project to make the Afsluitdijk and its surroundings future proof. This vision is supposed to be

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<sup>1</sup> Figure 1 can be found in Appendix A.

realised through the implementation of the programme “de Nieuwe Afsluitdijk” (DNA) by the regional governments, which showcases the Afsluitdijk as a “breeding ground for Dutch craftsmanship” (De Nieuwe afsluitdijk, 2018) in the field of energy transition, water and nature management (De Nieuwe afsluitdijk, 2018).

Widening the scope of the initial project in such a way comes along with new targets naturally evolving along the way, targets that are not only set by the programme but also by other key parties involved, such as Rijkswaterstaat (RWS) or other projects attached to the Afsluitdijk. Governing such a large, multistakeholder megaproject in terms of the integration of targets, communication, and cooperation between the different parties involved can be challenging, especially in a constantly exposed project to changing environments. Our research will focus on how such a task can be mastered by learning from the Afsluitdijk. Ultimately, we aim to answer how the governance of megaprojects with an interdisciplinary focus such as the Afsluitdijk takes shape in terms of cooperation, communication, target integration and the incorporation of diverse interests among the multiple stakeholders involved to re-examine the impact of megaproject governance on project performance.

## **Theoretical framework**

### **Governance**

In this section, we will define key terms, concepts, theories, and frameworks connected to the governance of a multistakeholder interdisciplinary project like the Afsluitdijk. While the topic of governance has become more prominent over time in the project management literature (Clegg et al., 2002; Atkinson et al., 2006), projects have also become more and more complex, making it difficult at times to distinguish whether a certain undertaking can be considered a project, a programme, or a portfolio. Furthermore, so-called megaprojects have been rising since the Second World War (Sanderson, 2012).

Thus, to study the complex Governance of multistakeholder settings in projects and initiatives around the Afsluitdijk, an important first step is to look at existing definitions in the realm of projects and programmes. For clarification, the table below shows common definitions of four terms.

<b>Project</b>	“a temporary endeavor undertaken by a company or organization (such as the creation of a new product, service, or result)” (Joubert, 2021)
<b>Programme</b>	“a group of projects that are similar or related to one another, and which are often managed and coordinated as a group instead of independently” (Joubert, 2021)
<b>Portfolio</b>	“a group of different programs and/or projects within the same organization, which may be related or unrelated to one another” (Jouber, 2021)
<b>Megaproject</b>	“large-scale, complex ventures that typically cost \$1 billion or more, take many years to develop and build, involve multiple public and private stakeholder, are transformational, and impact millions of people” (Flyvberg, 2017)

Terms such as “governance” or “project governance” can have multiple meanings or definitions as well, depending on specific research purposes (Yongkui, et al., 2019). The Oxford dictionary defines *governance* as “the activity of governing a country or controlling a company or an organisation” (Oxford Learner’s dictionary, n.d.). However, as the key aim of this report is to investigate governance in multistakeholder environments, we adopt a common definition by The Commission on Global Governance which defines governance as “*the sum of the many ways individuals and institutions, public and private, manage their common affairs. [Governance] is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action may be taken*” (Burger, & Mayer, 2003, p. 50).

Governance and management might differ depending on whether one is dealing with a project, megaproject, programme, or portfolio. Moreover, there is often confusion between the two terms. While “governance” is more associated with leadership, defining visions, setting goals, strategies and agendas, “management” is typically more concerned with the day-to-day duties of

carrying out those strategies and supporting the governance process (Tihanyi, Graffin, & George, 2014).

### **Megaprojects and megaproject governance**

Projects have become the preferred way of working in many private, public and not-for-profit organisations where they present primary work mechanisms (Maylor, et al., 2006; Pellegrinelli, 2011). **Project governance** refers to the “framework, functions, and processes that guide project management activities [...] to create a unique product [...] and meet organisational strategic and operational goals” (Project Management Institute, 2016, p. 81). **Project management**, in turn, is part of how a project is governed and traditionally contains the life cycle of a project which consists of stages ranging from initiation, planning, and execution to monitoring and closure (Maylor et al., 2006).

Nevertheless, not only have projects become a preferred way of working, specific types of projects, **megaprojects**, are on the rise (Flyberg, 2017). How megaprojects are defined and governed, as well as the associated risks, is of particular interest to our study. Apart from the definition of megaprojects in the table shown earlier, those large-scale projects often share features like having a substantial piece of physical infrastructure, the client often being the government or a public sector organisation, and a life span of decades (Sanderson, 2012; van Marrewijk et al., 2008; Flyberg et al., 2003). Megaprojects have become the preferred delivery model in fields like infrastructure, water, energy, and more. Examples of megaprojects are high-speed railways, airports, wind farms, or dams (Flyberg, 2017). Usually, megaprojects are shaped by higher complexity, risk and uncertainty, requiring a specific governance structure (Miller, & Hobbs, 2005). First, the decision making, planning, and managing processes are typically multistakeholder processes, involving public and private stakeholders with often conflicting interests. Second, megaprojects risk falling for a “uniqueness bias” where managers and planners see their projects as exceptional, which impedes the learning from other projects (Van Marrewijk,

2008; Flyberg, 2007). Finally, there is frequently a high risk of unplanned events happening that would often lead to cost overruns, delays, and benefit shortfalls. Over 90% of megaprojects run these risks (Yongkui, et al., 2019). The governance of megaprojects, therefore, requires careful planning of supply chain management, financing structures, target management, as well as conflict resolution and decision-making mechanisms to foster successful project implementation that is in the best interest of all stakeholders involved (Yongkui, et al., 2019)<sup>2</sup>. Additionally, megaprojects require flexibility and good communication, as, throughout the project, stakeholders might leave or join, which means that the project's structures and organisation are exposed to constant changes (Sanderson, 2012).

### **Programmes and programme governance**

Besides megaprojects, programmes have also been on the rise over the last decades. Programmes have emerged as a way to fill the perceived need to coordinate, deploy resources effectively, and balance diverse interests and objectives to “develop new capabilities and infrastructure incrementally towards the achievement of strategic goals and aspirations” (Pellegrinelli, 2011, p. 233). This need originates from the extensive focus on (mega-)projects. Programmes can be a good addition to megaproject governance because they can serve as mechanisms for coordination and direction of several related projects by facilitating “managerial sensemaking and control in complex organisations where projects are the principal units of work” (Maylor et al., 2006, p. 671). Moreover, Programmes can help cope with the risk and uncertainty often associated with megaprojects. Because programmes are seen as a way to respond to changing environments, coping with ambiguity and risks by allowing for adaptability, flexibility, complexity and expandability (Pellegrinelli, 2011). Moreover, it has been argued that managing megaprojects are very similar to managing programmes (Pellegrinelli, 2011).

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<sup>2</sup> Yongkui, et al. (2019) have also identified a set of fifteen core factors that influence megaproject governance. Their conceptual model can be found in Appendix A under Table 1.

Therefore, we assume that programme governance compliments megaproject governance because it specifically addresses scenarios that involve a lot of risk, uncertainty and exposure to change, which is common for megaprojects. Pellegrinelli (2011) also notes that projects and programmes should always be regarded as complementary to each other and not seen as substitutes, a notion that we are taking seriously in developing our model. Finally, portfolios are already recognised as a good way of combining projects and programmes within complex organisational structures and big complex endeavours<sup>3</sup>.

### **Stakeholder management and stakeholder theory**

Megaprojects and programmes are usually governed and shaped by multiple stakeholders. In our investigation, we are particularly interested in the communication and interaction between stakeholders, as these factors are considered highly important for a project's success (Yongkui et al., 2019; Flyberg, 2011). According to the Oxford Dictionary of Business and Management definition, a stakeholder can be anyone interested in an organisation, such as employees, suppliers, customers, clients, and shareholders (Law, 2016). For our study, we will, however, only look at stakeholders as the key parties involved in the governance process of the Afsluitdijk, as well as their (possible) partners and other organisations that can influence the planning, implementation and visioning of the project.

**Stakeholder management** can be defined by assessing who is a stakeholder and their attributes and ability to influence the organisation (Savage et al., 1991). Companies are said to engage in two complementary types of stakeholder management: those that focus on their organisation's well-being (organisation-focused stakeholder management) and those that focus on an issue that affects their relationships with other societal groups and organisations (issue-focused stakeholder management). It has been established that issue-focused stakeholder

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<sup>3</sup> A conceptual overview of portfolio governance organisation can be found in the Appendix A, model 1.

management dominates multistakeholder networks because it allows firms to collaborate with stakeholders to handle complex problems and difficulties (Roloff, 2007).

Stakeholder management is closely related to **stakeholder theory**, a business strategy that considers the interests of all stakeholders in a company, as opposed to the belief that a company is only accountable to its owners (Benn, Dunphy, & Martin, 2009). As a result, it takes a broad rather than a restricted view of corporate responsibility. The restricted version of stakeholder theory is based on agency theory and individualism, whereas the broad version is based on stewardship theory and communal duties (Benn, Dunphy, & Martin, 2009). Stakeholder theory specifies five components of inter-organisational relationships, or in this case, relationships within megaprojects or programmes. The first one concerns the relational valence, which suggests the negative or positive influence between the stakeholders and an organisation. Secondly, the history of contact between organisations and specific stakeholders might allow for forming interaction structures and rituals. Thirdly, an organisation's assessment of stakeholder group's legitimacy, which talks about the reputation, expertise or recognizability of the stakeholders, is relevant to the organisation's core work. Fourth, the power of the stakeholders, namely the ability of a stakeholder to affect the organisation's success or failure, is important. Finally, there is the urgency of a stakeholder's interest in the organisation, which suggests how important it is for stakeholders' interests or influence to be time-sensitive or crucial to the organisation (Diers-Lawson, 2019).

We argue that stakeholder theory applies within the framework of a project governed by different stakeholders, such as the Afsluitdijk. The only difference is that instead of looking at the (power) relations between a core organisation and its stakeholders, one needs to look at the (power) dynamics between different stakeholders to assess structures and hierarchies within the multistakeholder setting. In the context of the Afsluitdijk project, we are specifically interested in the interests and objectives of stakeholders in order to understand how the governance of such interdisciplinary multistakeholder projects gets accomplished.

## **Stakeholder communication and managing diverse interests**

Complex and demanding multidisciplinary projects (or programmes) require strong communication to reach the desired contribution for successful execution. Ignoring a stakeholder is a primary cause of project failure (Carnall, 2007). Furthermore, clear and structured communication helps maintain trust and document project culture changes (Van Marrewijk, 2007). In this paper, we define *communication* not only as the necessary patterns of exchanging information and knowledge but also as the exchange of views, opinions and ideas between stakeholders in a project or programme; to create a basic mutual understanding, encourage goal alignment, and enhance comprehension of various standpoints (Diers-Lawson, 2019).

A project progresses through various distinct stages over time, thus creating an evolving dynamic for the management of the project stakeholders, who subsequently ought to adjust their communication practices for each distinct phase of the project and to prevent the development of a dysfunctional communication culture (Aaltonen, 2010; Bate, 1994). Only if these conditions are met productive, beneficial cooperation can emerge, in which stakeholders work, act and operate together to reach the needed targets of the project. The willingness to cooperate depends on various variables such as the interactions, competence, intention, and association between the project and its stakeholders (Roloff, 2008).

How exactly governing or managing the diverse interests, objectives and targets of different stakeholders in a multistakeholder project works, has not been addressed in literature so far, which is a gap that we aim to fill with our research. We argue that to successfully integrate targets of diverse stakeholders into the philosophy of a project, the philosophy or long-term goals should first be defined, which can be achieved by active communication of the stakeholders with each other. Then, through continuous communication and cooperation between the different parties involved in a project, interests and targets can more easily be identified, communicated, and integrated.

## The model

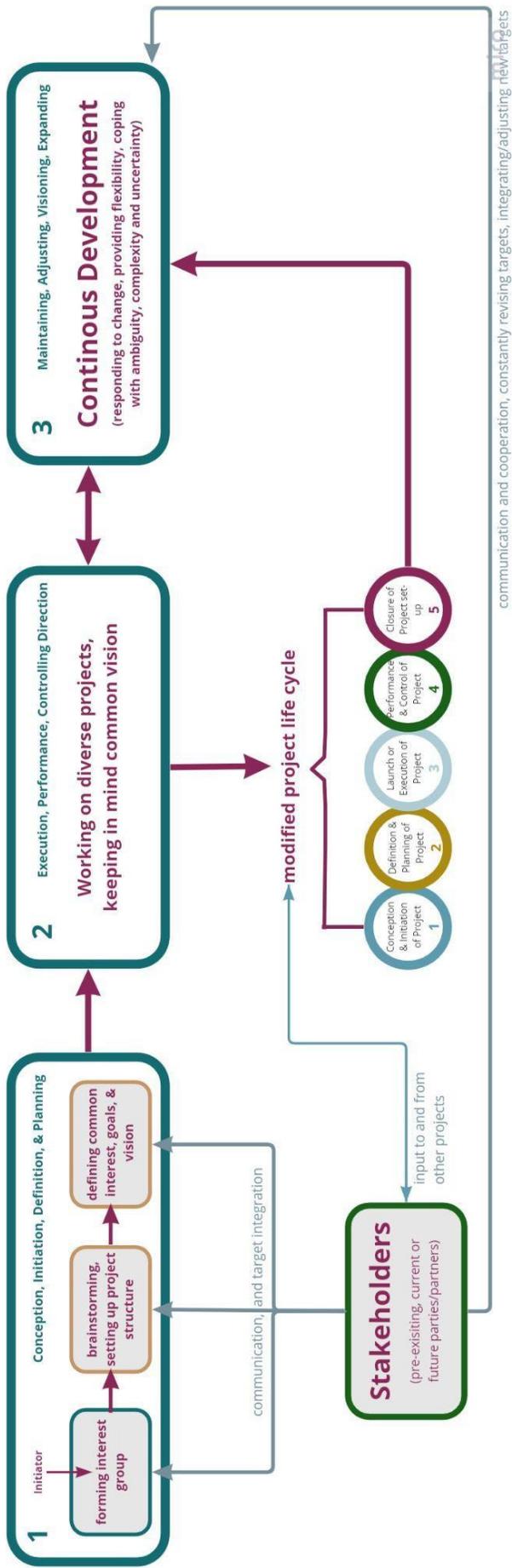
Drawing on these existing theories, we have created a model that displays how multistakeholder collaborative megaprojects could be governed in terms of communication, cooperation among stakeholders, and integration of targets in an interdisciplinary and continuously changing environment in general. Building on the model of the life cycle of a project, we added a layer that describes the life cycle of a multistakeholder megaproject. Additionally, we incorporated stakeholder theory and stakeholder management in terms of the processes between different model stages. Simultaneously, following the programme or portfolio governance characteristics, the model should consider governance in high risk and uncertain environments. There, complex governance and organisational structures are needed that exceed the boundaries of a single project or programme but move towards a stakeholder-focused approach that values good stakeholder communication, decision making, and target management.

Generally, the model is supposed to depict multistakeholder collaborative governance in megaprojects with programme-like characteristics. As figure 1 shows, the model consists of five different components. The model's first stage, indicated by the number in the right upper corner, represents the set-up stage in a megaproject before the actual launch. There, the interest group of different stakeholders forms, which together brainstorm about and decide on a common vision of the project and divide tasks and areas of responsibility among the different stakeholders. In stage two, which takes place after the megaproject has been launched, the different stakeholders work on their respective targets and projects. Because different stakeholders are working on different parts of the megaproject or working on separate additional projects that add value to the overall megaproject agenda, our model has some characteristics of programme management.

Regarding this, connected to stage two, the modified project life cycle zooms in on how such smaller projects within the overarching megaproject take shape. Mainly they follow the traditional project life cycle. However, there is the exception of those projects not having an end-

stage to the projects. Because as Maylor et al. (2006) put forward, constantly changing environments require projects to be flexible, expandable and adaptable in their visions and targets in communication with other stakeholders. This could be done by extending the timescale of the project life cycle model so that it continues beyond the closing/handover stage. Therefore, we exchanged the common fifth step of the project life cycle, project closure, with the closure of project set-up. Therefore, stage three also displays this continuous development due to megaprojects' required expandability and flexibility. The continuous development of the megaproject can always lead to emerging new projects that follow the modified project life cycle and add their value to the megaproject. Overall, our model has a cyclic nature through focussing on the continuous development and improvement of megaprojects. Therefore, we see megaproject governance as an ongoing process. Lastly, the variable of stakeholders has been added to the model as they serve as the decision making, controlling, (project) initiating and, above all, as the main governing body.

We took the Afsluitdijk as a case study to explore whether such an ideal process described in our model can inform real-life scenarios. We hypothesise that *the Afsluitdijk is a good foundational example of complex megaproject management in the context of changing environments and stakeholder collaboration*. We believe that the Afsluitdijk, including the projects that revolve around it, represents a complex system that fits within the definition of a megaproject while showing characteristics of a programme or even portfolio, with the diverse projects operating in a very independent fashion. In the discussion section of this report, we will elaborate more on why we think the Afsluitdijk fits certain definitions and characteristics of megaprojects, programmes, or portfolios.



## Research question

With our research project, we want to unravel the complexity of such a governance undertaking and investigate how contemporary theories/models on (mega-)project and programme governance and stakeholder management play out in the real world, taking the Afsluitdijk as a case study. This translates into the following research question: ***How does the governance of megaprojects with an interdisciplinary focus such as the Afsluitdijk take shape in terms of cooperation, communication, target integration and the incorporation of diverse interests among the multiple stakeholders involved?*** Consequently, we are concerned with how current megaproject governance models and theories play out in real-life, and whether the Afsluitdijk might lead us to new findings and ideas that add to the existing literature on the impact of megaproject governance on project performance.

## Methods

### Participants

Having identified our supervisor from the DNA programme, Tjalling Dijkstra, as a gatekeeper, we contacted eleven potential participants for our research, out of which ten agreed to participate. Contact was established together with our gatekeeper. The participants were all representatives of key stakeholder groups that are or have been involved with the Afsluitdijk megaproject. These parties included, for example, our host organisation, DNA, people working on projects within DNA, Rijkswaterstaat, as well as provinces and municipalities (the province of Friesland and the municipality of South-West Friesland). All participants were 40 years or older, and apart from one participant, all were male. Most of the participants have had managerial roles around the Afsluitdijk, most of them with university backgrounds, and one of the participants is still working in academia.

## Procedure

For our analysis, we will focus on a directed literature review, database research, and in-depth interviews. Firstly, we did a thorough literature review using smartcat and google scholar to look for pre-existing theories and concepts on the topics of project and programme governance and management, megaproject governance, governance theories, stakeholder management and governance, and stakeholder theory and communication between stakeholders. Informed by these existing theories, we have created a model that incorporates the successful governance of a multistakeholder megaproject, as elaborated in the previous section. As a next step, we conducted a database research and in-depth interviews to answer our research question and explore how well the Afsluitdijk programme fits the established model. For the database research, we looked into the archives of the Afsluitdijk website. We drew from reports, interviews and other material that was considered to be of help for answering our research question. During the interviews, interview partners referred to the information contained in certain foundational documents of the project and the DNA programme, which we incorporated into our results and analysis.

The main focus of the research, however, lies in the in-depth interviews. The 45-60 minutes long in-depth interviews were designed to be semi-structured so that certain questions were posed to all participants and to ensure the comparability of results. We also ensured that our interviews were directed at our research question while still leaving room for further input and elaboration from the interviewees' sides. Before the interviews, we sent out a formal invitation accompanied by the interview guide, information on the interview, and a consent form to every participant. Furthermore, we allowed every participant to conduct the interview in Dutch. Since two of the researchers in our team are Dutch native speakers, and the third researcher has a working understanding of Dutch, we could provide this opportunity, and nine out of ten interviews were held in Dutch. This was done to ensure that no important information or details got lost in

translation and that the interviewees felt comfortable and could describe everything in their own words without having to translate professional jargon. All of the interviews, once finalised, were then first transcribed, and later coded and analysed with our research question in mind.

## **Materials**

Since our study was qualitative, not many additional materials were needed. In the desk research phase, we used online accessible resources and the archives and documents from and about the (Nieuwe) Afsluitdijk. When doing interviews, we used recording devices, possibly in the form of an integrated recording app on our cell phones and laptops, to document the interviews. For transcribing interviews, transcribing platforms that are accessible online were of good usage. Under Appendix B, an outline of the interview guide in Dutch can be found.

## **Research design (ethical considerations)**

Throughout our research, we were mindful to remain professional, respectful, and ethical since we were conducting research across various organisations, companies and stakeholders of the Afsluitdijk. Before every interview, we shared the interview guide, information sheet, and a consent form to adhere to the ethical standards of all parties involved. All data gathered and used from the interviews are kept confidential and anonymous. After the research is finalised, all recordings shall be deleted, and additionally, we will share our findings with the interviewees for review. The disclosed information will be treated objectively and will be carefully sorted. To prevent bias, we must be wary that we are all from a similar background. Therefore, our way of posing questions, including our language and interpretation of the interviews, could be skewed. We strive to provide research that is just and mutually beneficial. Lastly, to guarantee the anonymity of the participants, we avoid referencing them or their organisation in connection with specific things they said and the viewpoints they hold throughout the report. Findings will be put in general language, and quotes will not be referenced to a specific person.

## Results

### Governance structure

The Afsluitdijk is a massive, multifaceted megaproject with grand budgets that needs strong collaboration, clear communication and, above all, good governance. Whilst conducting the interviews, we found an overall consensus about the Governance of the Afsluitdijk being perceived as a very layered and rather complex undertaking, partly due to many different stakeholder interests, two of which are of particular interest to this research. Combined with previously conducted research, we identified two key stakeholders, namely: “Rijkswaterstaat” (RWS) and “De Nieuwe Afsluitdijk” (DNA). RWS is, simply put, the directorate-general for public works and water management and can be regarded as the executive force of the Ministry of Infrastructure and Waterstaat (I&W), which is concerned with the safety, accessibility and habitability of the Netherlands. RWS is responsible for implementing the policies and projects of the ministry, such as renovating and maintaining the dyke. The counterpart of RWS in this large-scale operation is DNA. DNA is a programme administered by a collaborative effort of the province of Friesland, the province of Noord-Holland, the municipality of South-West Friesland, and the municipality of Hollandse Kroon. DNA's mission is to establish a sustainable future for following generations, as well as new possibilities and career prospects for the region. The predominant focus of the programme is to recruit and coordinate a variety of projects and initiatives that add value to the dyke in targeted areas such as sustainable energy, supporting the ecology and boosting the regional economy<sup>4</sup>.

From our research, we concluded that how the renewal and improvement of the Afsluitdijk are labelled as ambiguous and how it is referred to (e.g., as a programme, megaproject, or system) framed different perceptions of the governance structure. Some see the Afsluitdijk as a

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<sup>4</sup> An organisational chart that depicts the governance of the Afsluitdijk can be found under Appendix A, model 2.

system in which separate projects and initiatives are interconnected yet autonomous. In contrast, others valued the renovation of the Afsluitdijk as a collaboration of two separate programmes. One programme, run by RWS, mainly deals with infrastructure and safety, and a second programme, led by DNA, that makes efforts to extend the function and purpose of the Afsluitdijk beyond protection. Additionally, we found that the intricate dynamics and distinct roles of the stakeholders result in a tense and close collaboration that sometimes makes it difficult to understand who is in charge, emphasising that there is not one central governing body. In essence, all stakeholders are equally important. However, the Afsluitdijk is managed by I&W; therefore, RWS has a significant power position over all other stakeholders, making them dependent on RWS for scheduling, funding, and approval of projects.

*"Rijkswaterstaat, being a part of the state, is highly determinative in everything that is done, what can be done and what is allowed to be done"*. Although this is seen as a limitation by some, others consider it necessary to have a set division in the hierarchy to maintain a clear goal and stay on track, given mutual respect.

Another vital difference between RWS and other stakeholders such as DNA is that RWS has concrete set guidelines and access to larger funds that they can allocate. In contrast, DNA has been mentioned as an "additional programme" with many ambitions that are flexible and adaptive to support novel ideas. However, since it is not a formal organisation, they neither have any legal decision power (DNA rather coordinates) nor much budget. To get funding for the projects, stakeholders with diverse interests must unite to establish communal interfaces and raise enough money, as objectives are often intertwined or overlap. It became apparent that most stakeholders need to make significant nuances to realise targets outside of the initial scope of the Afsluitdijk, which can cause conflict and confusion because of the many cultural differences (procedures, visions, methods).

Drawing on the responses gathered, we noticed some critics of the current governance structure of the Afsluitdijk. Although the interplay between stakeholders is seemingly doing

considerably well for a project of this magnitude, improvements can be made. Concerns were raised about the complexity of and (physical) distance of the government to the dyke. A gap between their knowledge and real-time events causes miscommunication and -coordination. Moreover, we found that because there is no overarching organisation or one executive board, there emerged a lack of maintenance once a project is done. This was said to occur because no one feels directly responsible or has any interest, budget or time to look beyond their original tasks. Lastly, it has been argued among some interviewees that it would be best to change management after some time to get fresh ideas and overcome old disputes. Yet this would also mean losing valuable experience and connections.

### **Interaction between stakeholders (collaboration, synergy, communication)**

As previously said, the Afsluitdijk is a vast complex megaproject with several stakeholders who must interact, collaborate, and communicate. During the interviews, we discovered an overwhelming consensus that the relationship between the many stakeholders of the Afsluitdijk was regarded as a synergistic collaboration; most of the respondents believed that the Afsluitdijk project could not be administered independently. In other words, while the stakeholders have various aims for the Afsluitdijk, they all strive for the same mindset regarding the Afsluitdijk. According to the interviews, the stakeholders wish to contribute to a beneficial outcome for the Afsluitdijk by meeting the various targets and placing the Afsluitdijk on the map.

The different stakeholders pointed out in the interviews that *“by working together but all within their own responsibilities,”* the Afsluitdijk project succeeded in maximising the possibilities for reaching their targets on the Afsluitdijk. However, as seen by the interviews, this creates a working atmosphere in which the various stakeholders only operate within their constraints, which ultimately inhibits the project's efficacy. Working just within their bounds, for example, might result in the obligations of the many stakeholders on the Afsluitdijk not always being obvious. As seen by the interviews, it is difficult to determine who is responsible for certain dyke concepts, such as

Afsluitdijk maintenance. Furthermore, interviewers stated that working alone in their duties makes it difficult to incorporate new ideas into the existing contract since there is no shared desire to work on it. This is all connected to what has already been said, namely that stakeholders have their priorities and only work within their own constraints.

Overall, communication among the many stakeholders is regarded well. The many stakeholders' interests are being taken seriously, and there is sufficient support inside the project. The respondents stated that a stakeholder gathering is held every 3-4 months. For example, if there is a conflict of interests, they will arrange a 'participation table' with the various stakeholders to settle the dispute. Furthermore, the interviewees agreed that external or public communication could be seen as good. "*The Afsluitdijk project has a single front office, address, newsletter, and website*". They did this to communicate under a single brand name, the Afsluitdijk, to seem like a unified communal enterprise rather than multiple stakeholders working together on different initiatives. However, it must be stated that the mutual communication between stakeholders differs significantly since the stakeholders differ greatly. Therefore it is simply more vital for certain stakeholders to meet more frequently than others. For example, it has been said in the interviews that communication on a local level is considerably more intensive simply because they have a closer relationship. Several interviewees also note that communication is typically limited to when it is essential or when your organisation is involved in the situation; as a result, you may not hear everything going on.

Stakeholders also point out cultural differences between the organisations, making communication and collaboration difficult. These cultural variations can also lead to conflicting objectives, stakeholder disputes, and the advocacy of specific views. As a result, some respondents noted that communication among stakeholders could sometimes be complex and frustrating. As a result, numerous respondents suggested that good communication would involve thinking as an entire team that collaborates to get the greatest results. In other words, it is critical to raise awareness of the shared duties and foster mutual trust.

## Managing and integrating diverse interests and targets

The Afsluitdijk is home to several stakeholders, each with its own interests and goals. However, we identified a broad agreement over the Afsluitdijk project's fundamental goal. RWS's primary goal for the Afsluitdijk project is to maintain water safety. This comprises dyke and sluice strengthening, as well as water drainage. Another key goal is to make the Afsluitdijk sustainable. With the support of new inventions and ideas, the objective is to make the Afsluitdijk the model of hydraulic engineering in the twenty-first century. This goal is based on a bearing principle, an I&W water regulation specifies what standards the Afsluitdijk must follow. The value behind it is making the Netherlands the safest delta to live in while making it more attractive.

Aside from the primary aims on which many stakeholders agree, there are variances in targets among stakeholders. While RWS has strict targets, which are determined by legislation, the region and DNA also have ambitions and ideas to better the Afsluitdijk and the regional situation. For example, DNA allows for adding a number of new projects to the Afsluitdijk to enhance the region. These initiatives are organised around three major pillars. These are the economy (constructing new bridges and sluices), ecological (constructing a fish migration river), and energy (incorporating blue energy initiatives).

Different stakeholders have similar mindsets but different interests and goals, which can lead to competing objectives. However, as seen by the interviews, the stakeholders cherish collaboration. This implies that stakeholders seek suitable ideas between opposing aims and attempt to support each other by identifying interfaces, but this is a complex task. *“The Afsluitdijk is so complicated, but you come across so many people and so many interests and so much hassle, so it is quite a task”*. Several respondents stated that to establish good collaboration, stakeholders must see beyond their own sector, making it more simple to identify interfaces. Additionally, some interviews proposed that at weekly meetings, they should discuss what is vital for the various interests/objectives/targets and discuss this with the other stakeholders. However,

many interviewees also mentioned that they were unsure if this would be efficient or if it would take too much time.

### **Future of the Afsluitdijk**

The Afsluitdijk, in our interviews, was generally described as an icon of dutch water management and aspiration for other water infrastructures. A beautiful, historic and unique collaborative project which offers plentiful opportunities to go beyond the mere function as a dyke. *“The Afsluitdijk should be more than just only an infrastructure”*. Yet, at the same time, we found that different stakeholder representatives agreed that in today's world, the dyke would not have been built in the same fashion and would not be a good example for other megaprojects due to its complexity. *“It has given a lot to the Netherlands (in terms of safety), but we also lost a lot (in terms of ecology)”*. One stakeholder representative also admitted that when planning the future and renewal of the Afsluitdijk, a helicopter perspective had been missing that looked at other projects and initiatives with similar scale to learn from their approaches to governance, management, and innovation.

When asked about the future of the dyke, we recognised a similar overall vision. Although there are still many things that can be done or expanded upon, the projects are seen to be ending. *The “Afsluitdijk has a function, for the future it has to meet these demands, the Afsluitdijk has several projects to be realised. When they are done the project is finished”*. It is seen to be important to have an end goal to stay focused on other targets. Besides, the future is regarded as unpredictable, and it would be dangerous to *“rule beyond the grave”*. The project is a snapshot of contemporary ideas and plans, but the renovation is a timely process that must be adaptive and pursue novel possibilities.

Moreover, we noticed that there are ambitious projects that go beyond the scope of those already being realised and involve different targets (especially concerning tourism and expanding the ecology) but not a lot of them are being generalised so that others could incorporate those

targets as well. Targets are adjusted as the external environment of the Afsluitdijk changes due to, for example, innovations and rising sea levels. However, many interviewees stated that there is a shortage of anticipation for change, resulting in regrettably missed opportunities/unused potential due to a lack of funding or knowledge.

## **Discussion**

### **Afsluitdijk fits definition of megaprojects**

Our theoretical model on megaproject governance assumed that the Afsluitdijk fits the definition of a megaproject as well as showing characteristics of programmes/portfolios and multistakeholder governance. After conducting our research, we concluded that this assumption holds. The Afsluitdijk fits the general definition of a megaproject because, firstly, it is a large-scale project with the complex venture of building a huge dyke, and it took many years to develop it, with the first plans of the Afsluitdijk dating back to 1891 (Vogt, 2019). Secondly, the Afsluitdijk involves multiple public and private stakeholders and is transformational as it needs to respond to a constantly changing external environment, which is sea-level rise due to climate change. Finally, the first estimations for five years of building time (2018-2023) for the renewal of the dyke counted for costs of around 850 million euros only for the strengthening of the dyke itself, not counting the additional projects evolving on and around the dyke, by DNA and private partners (de Afsluitdijk, 2018). Considering the costs of the initial building of the dam that started in 1932, the Afsluitdijk, the dyke itself, and the additional projects surrounding it, the criterion of megaprojects typically costing \$1 billion or more has been met as well.

### **Risk associated with megaproject governance**

The Afsluitdijk also shows several characteristics of phenomena, risks, and difficulties often associated with megaproject *governance*. Firstly, some of the stakeholder representatives

might have shown tendencies of what Flyberg (2017) referred to as uniqueness bias, as several interviewees described the Afsluitdijk as a unique project and a once-in-a-lifetime opportunity. However, it also has to be noted that with the Netherlands being the world's leading country in water technology and infrastructure, the Afsluitdijk represents a quite unique and outstanding project in this area. Another feature of megaproject governance that we identified in the interviews was the tendency for cost overruns and delays in the project. Not only has the initial time of the end of the construction been moved to 2025, but the initially estimated costs have also changed to more than twice the amount. It could be argued that with this money, the government could have followed the original plans of: *“dijk en meer - eindrapportage verkenning toekomst afsluitdijk”* (Lammers, 2009) and even have more initiatives and projects instead. Additionally, there have not only been delays in the main initiative of building the dyke higher, but these delays ultimately affect other projects and initiatives connected to it, such as renovating the sluices or building the fish migration river project. This is because many of the different projects around the Afsluitdijk, apart from the main construction, are interconnected.

### **Programme governance as a good addition to megaprojects**

While megaprojects are associated with high risks and very complex governance, programmes and portfolios are often regarded to ease the governance of complex projects by coping with ambiguity and risk by allowing for adaptability, flexibility, uncertainty and expandability (Pellegrinelli, 2011). Overall, we see the Afsluitdijk as a megaproject with characteristics of programmes and portfolios through the collaboration of RWS and DNA, with DNA contributing a lot to integrating other targets and initiatives to the main undertaking go beyond safety. We perceive that this way of organising governance of such a huge project is a good step towards dealing with the high uncertainty, risk and the tendency for cost overruns and delays. Because it fosters a decision-making process and target management, where responsibilities are divided

clearly among two main stakeholders, which fosters effective communication, especially to the outside.

### **Stakeholder communication and integration of targets**

Stakeholder communication and collaboration naturally play a significant role in a project's success. In the relevant literature, project and multistakeholder governance are often attributed to one dominant steering group or supervisory body that oversees governance. However, such a set-up has not been found at the Afsluitdijk to the same extent. This might be due to how responsibilities, focuses and tasks are divided among the two key stakeholders, with a clear division between the key focus of RWS on water safety and maintenance and, thinking beyond this, mainly along the lines of energy, ecology and economy, the focus of DNA. However, our research showed that a clear division of responsibilities and targets might not be enough for the smooth sailing of a project and, more specifically, not enough for reaching the full potential of a project. Certain factors stand in the way of this, such as hierarchical barriers between the different stakeholder groups, monetary issues, and a hierarchy of targets. With safety and maintenance of the dyke being the top priorities, any other targets apart from that ultimately are subordinate. Government funding goes into RWS's goal of building the dyke higher, while DNA is on its own to find funding for the projects it supports.

On the one hand, having this hierarchy of targets and power division might be a good strategic move to ensure that the target given priority gets realised without major delays. On the other hand, these divisions might also lead to delays in the projects that serve other targets and leave potential unexplored because there is only a limited number of different projects that can be funded. Initially, important targets must be dropped due to insufficient funding. Therefore, we conclude that prioritising targets for efficiency comes at the cost of thinking out of the box and incorporating diverse interests and targets. Still, we tend to believe that with having a body like

DNA the Afsluitdijk as a megaproject already follows a more interdisciplinary, sustainable, and broad approach than many other projects of the same scale.

### **Final evaluation of the model**

Both megaproject and programme governance literature suggest that the traditional project lifecycle with a specific end-stage should no longer be considered a contemporary approach. Because external environments are loaded with uncertainties, and changes require projects and programmes to be flexible, expandable and to look beyond their usual scope (Pellegrinelli, 2011). In the interviews, stakeholders involved in and around the megaproject mostly shared the viewpoint that with the finishing of building the dyke higher, around 2025, their jobs and hence the megaproject and all projects surrounding it would come to an end. This was against our initial expectations; in this case, our case study does not align with the model we created based on theoretical concepts. However, we would argue that this “job done attitude” inhibits the flexibility, usage of opportunities, and expandability of the project.

We believe that an anticipatory approach compared to an adjusting approach would benefit the success of megaprojects overall, especially in environments exposed to constant change and climate change. In the case of the Afsluitdijk, for example, climate change and sea-level rise will always be impacting the construction and its environment. Dynamic anticipation is needed to adapt to the future instead of adjusting to changes when needs become pressing. Moreover, we believe that after the closure of the latest constructions at the dyke, there is still potential for initiatives and projects to be added to improve the dyke and the region, especially regarding making it sustainable.

Generally, we think the Afsluitdijk fits the model we created in many ways. However, we would argue that, as proposed in our model, megaprojects and programmes in changing environments should not follow closure-maintenance governance but instead a closure-maintenance-visioning/expanding governance procedure that allows for the integration of diverse

targets and visions of different stakeholders over a long period to guarantee for the sustainability and positive impact of the project. To achieve this, we would suggest a governance approach that provides a transition from management and transactional leadership (associated with maintenance and interference by exception (Aalateeg, 2017) to transformational leadership, associated, among other things, with visioning (Aalateeg, 2017). However, it is questionable if such leadership can even exist in a multistakeholder collaboration without a central steering group coordinating everything. It might be an option to have two to three transformational leaders dispersed among key stakeholders, but whether this would prove effective should be investigated in future research.

### **Limitations**

While our research method was effective, it is important to keep in mind that there are limitations to our method that have the potential to have influenced our results. Firstly, as already stated before and also by the different stakeholder representatives, the Afsluitdijk is a very complex and big system, and it takes long to understand the complete working mechanisms. With our research, we contributed well to bringing some clarity and reflection to the Governance of the Afsluitdijk. However, with the limited time we had to work on this research project, we are sure that there are still many aspects of the megaproject's functioning that have not yet been analysed enough. Next, having decided to interview representatives of key stakeholders within the Afsluitdijk collaboration system, we accepted that a certain bias came with the personal perspectives and agendas that the interviewees had regarding the Afsluitdijk. Therefore, this research could not guarantee complete objectivity. However, as researchers, we did our best to stay neutral, even though we were working for DNA, to uphold objectivity and neutrality as best as possible. Finally, we opted to conduct the interviews in Dutch because every stakeholder we questioned spoke Dutch, and we discovered that a majority of the respondents preferred to be

able to speak Dutch. However, the language of our research paper is English, which might have resulted in a loss of nuance in some cases.

## **Conclusion**

This research has focussed on answering the question of how the governance of megaprojects takes shape in terms of cooperation, communication, target integration and the incorporation of diverse interests plays out in multistakeholder environments, using the Afsluitdijk in the Netherlands as a case study. Doing a thorough literature review, we identified key definitions and theories that we found crucial for our study. Overall, megaproject and programme governance, as well as stakeholder theory, have served as a foundation for developing our model on multistakeholder collaborative governance in mega projects with programme-like characteristics. By doing in-depth interviews with ten different stakeholder representatives of parties involved in the Afsluitdijk megaproject, we aimed to investigate how well the model we created based on theory fits a practical, real-life scenario.

According to data-based and interview-based research, the Afsluitdijk matches the description of a megaproject while exhibiting features of a programme or portfolio and multistakeholder governance. Furthermore, our results have shown that, in general, the model we developed based on theory matches with the Afsluitdijk. Those attributes concerning megaprojects, programmes, stakeholders and their governance, collaboration and communication have mostly been met at the Afsluitdijk, apart from a few exceptions. A key exception we identified, for example, is that the open-ended, expandible and flexible nature of megaprojects that we suggested in our model has not been met in the Afsluitdijk. Apart from this, we found that the Afsluitdijk exhibits certain features of phenomena, risks, and difficulties commonly associated with megaproject governance. For example, there is a potential risk of uniqueness bias and a vulnerability to cost overruns and delays.

Furthermore, the results have demonstrated that stakeholder communication and collaboration play a crucial part in the success of a project. However, it has also been indicated that a clear division of responsibilities and targets may not be enough for a using project's maximum potential. Certain elements, such as hierarchical barriers between stakeholder groups and targets and monetary concerns, stand in the way of this, which is why we suggested that prioritising targets for efficiency comes at the expense of thinking outside the box and embracing varied interests and targets.

We argued that megaprojects and programs in changing environments should follow a governance approach that does not move towards fixed and final closure of the project but looks at maintenance and visioning about/expanding the project in the future. In doing that, megaprojects allow for the integration of diverse targets and visions of different stakeholders over a long time period to ensure the project's sustainability, positive impact and usage of its full potential. Moreover, we argue that having a governing body like the DNA as a programme that adds value apart from the main focus/targets of the project (safety and maintenance) and thinks outside the box is highly important for making a project future-proof, adapting to external changes, and being flexible. Finally, we suggest that future research should compare the effectiveness of programmes as a supplement to megaproject governance, as well as successful target integration and multistakeholder governance, to megaprojects with a central governing body. Determining the most dominant variables that lead to megaprojects' delays and cost overruns would also be worth exploring to increase the efficiency and performance of megaprojects.

## Appendix

### Appendix A - Figures, Tables and Models

**Figure 1**



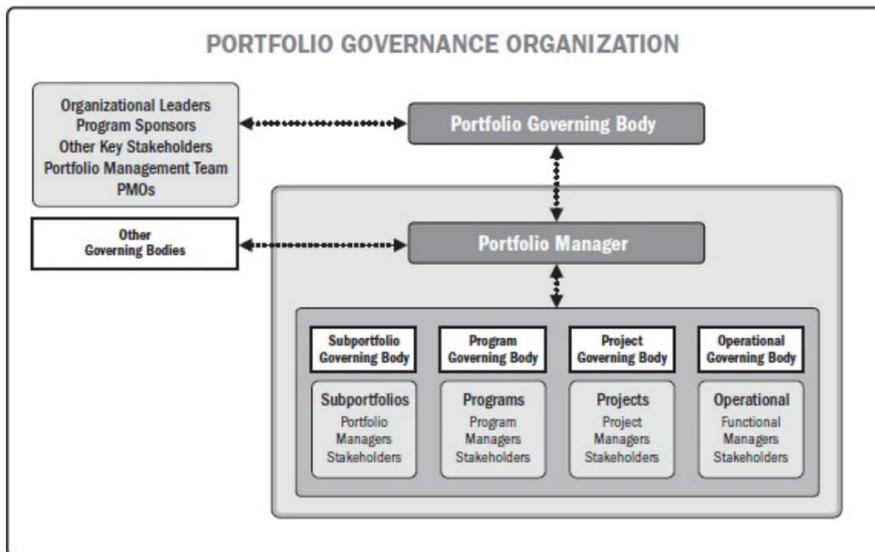
Area flooded if there were no dykes (van der Ven, 1993)

**Table 1**

**Table 1.** Conceptual megaproject governance model

Key dimensions	Core indicators
Governance structure	Organization structure Stakeholder role Supply chain management Project financing structure Target management system
Governance mechanism	Communication mechanism Coordination mechanism Conflict resolution mechanism Incentive mechanism Supervision mechanism Decision-making mechanism
External environment	Organization culture Market environment Government regulation Social supervision

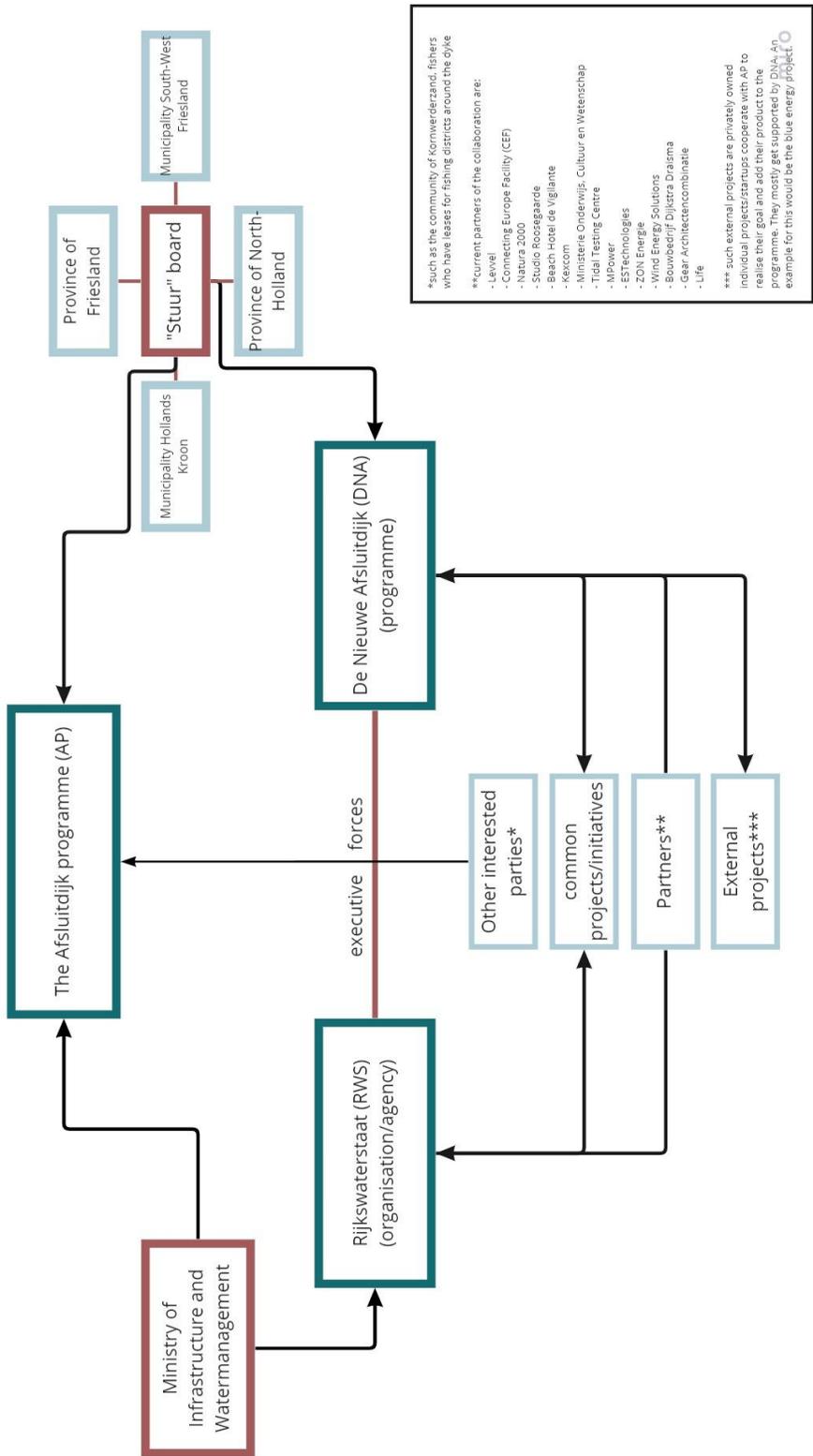
(Yongkui, et al.,2019)

**Model 1**

**Figure 3-1. Example of Portfolio Governance Organization**

Example of Portfolio Governance Organization Model (Joubert, 2021).

**Model 2 - Organisational chart**



\*\*such as the community of Komwerdzand, fishers who have leases for fishing districts around the dyke

- Leivel
- Connecting Europe Facility (CEF)
- Natura 2000
- Studio Roosegaarde
- Beach Hotel de Vigilante
- Kexcom
- Ministerie Onderwijs, Cultuur en Wetenschap
- Tidal Testing Centre
- MPower
- ESTechnologies
- ZON Energie
- Wind Energy Solutions
- Bouwbedrijf Dijkstra Dralsma
- Gear Architectencombinatie
- Life

\*\*\* such external projects are privately owned individual projects/startups cooperate with AP to realise their goal and add their product to the programme. They mostly get supported by DNA. An example for this would be the blue energy/project.

## **Appendix B - Interview guide (Dutch)**

Definition of key terms after introduction of research team: For the purpose of our research, we want to define certain key terms so that we are on the same page for the course of this interview. When we speak of the Afsluitdijk or the Afsluitdijk programme we mean all the organisations, parties, interest holders and projects involved within the framework of the whole Afsluitdijk programme. So, we do not only mean the dijk itself or the DNA as a programme but rather we speak of it in terms of the network of stakeholders involved. When speaking about stakeholders, we mainly mean the key parties involved in the programme. Lastly, when we speak of governance, we refer to how the whole afsluitdijk programme is organised, how are stakeholders working together to make the whole system running. How it is controlled and operated. Later, when we speak of targets, goals and visions, we, on the one hand, mean concrete plans or short-term goals (goals with a specific end date), but also the motivation and guiding principles, the bigger visions behind it.

### **Introduction/Opening questions**

1. Kunt u ons een kleine introductie geven over uzelf?
  - a. Wat is uw positie en voor wie werkt u/wie is u opdrachtgever?
  - b. Wat zijn uw dagelijkse werkzaamheden en kern verantwoordelijkheden?
2. Kunt u ons een korte introductie geven over uw organisatie/compagnie/project waarvoor u werkt?

### **Key questions**

3. Waar moet u aan denken als we het over het Afsluitdijk programma hebben?
4. Wat zou u zeggen is de filosofie van het hele afsluitdijk programma? (vanuit u persoonlijke perspectief en vanuit het perspectief van u organisatie?)
5. Hoe zou u het bestuur van het Afsluitdijk programma beschrijven?
6. Wie beschouwd u als de meest belangrijke stakeholder binnen het Afsluitdijk programma?
  - a. Hoe zijn de verantwoordelijkheden verdeeld? Welke stakeholder is verantwoordelijk voor wat?

7. Welke rol denkt u dat uw organisatie/compagnie/project heeft binnen het hele Afsluitdijk programma?
8. Wie zijn u belangrijkste medewerkers/collaborateur?
9. Wat zijn de belangrijkste (eind)doelen van uw organisatie in relatie met het Afsluitdijk programma?
10. Wat zijn de motivaties/interesses/objectieven achter deze doelen? In andere woorden, wat zijn u dragende principes, u belangrijkste focuspunten en visies?
11. Waarom en hoe zet u deze doelen/interesses/objectieven binnen uw eigen organisatie? (waarom heeft uw organisatie gekozen voor deze specifieke doelen en niet voor andere?)
12. Worden deze doelen toegepast in het hele afsluitdijk programma? Zoja, hoe wordt dit gedaan?
13. Waren er doelstellingen die u aanvankelijk had, maar die u op een bepaald moment hebt laten vallen en waarom hebt u daartoe besloten?
14. Communiceert u (uw organisatie) deze doelen, motivaties en interesses naar andere stakeholders die betrokken zijn in het afsluitdijk programma en zoja hoe doet u dit?
  - a. Hoe ervaart u deze communicatie met andere stakeholders?
  - b. Hoe reageren andere stakeholders op uw interesses, doelen en motivaties?
  - c. Heeft u ook kennis over de doelen van de andere stakeholders en komen deze overeen met die van u (uw organisatie)?
15. How do you deal with conflicting targets?
16. How often do you generally communicate with other stakeholders. How often do you communicate about targets?
17. Wat is volgens u succesvol in termen van:
  - a. communicatie tussen stakeholders
  - b. De integratie van doelstellingen en belangen tussen stakeholders
18. Wat zijn volgens u de sterke punten van de wijze waarop het Afsluitdijk-programma wordt beheerd?
19. Wat zijn volgens u de zwakke punten in de wijze waarop het Afsluitdijk-programma wordt beheerd?
  - a. Wat zijn mogelijke manieren om die zwakke punten te verhelpen?
  - b. Vindt u dat dit een collectieve uitdaging is of een verantwoordelijkheid voor één partij/bedrijf/organisatie?
20. Hoe tevreden bent u in het algemeen over de samenwerking en communicatie van de belanghebbenden binnen het programma?
  - a. Wat zijn eventuele verbeter punten?
21. Wanneer een van uw projecten is opgezet, wat gebeurt er daarna? (wanneer de plannings-, initiatie- en uitvoeringsperiode voorbij is)

22. Hoe gaat uw organisatie om met continue veranderende landschap?
23. In welk gebied ziet u potentie voor de afsluitdijk en wat wilt u op de lange termijn bereiken?  
(visie van uw organisatie en persoonlijke visie)
24. Kan het bestuur van de Afsluitdijk worden gezien als een voorbeeld voor andere projecten en/of programma's met vergelijkbare doelstellingen en structuren?
25. Waar ziet u het programma van de gehele Afsluitdijk op de lange termijn naar toe gaan?

**Closing questions**

26. Is er nog iets dat u zou willen toevoegen of delen?
27. Heeft u nog vragen voor ons?

## References

- Aaltonen, K. (2010). Stakeholder management in international projects (Doctoral dissertation,
- Aalateeg, S. (2017). Literature Review on Leadership Theories. *Journal of Business and Management*, 19, 35 - 43.
- Aalto University School of Science and Technology, Department of Industrial Engineering and Management, Espoo, Finland, Doctoral dissertation series 2010/13)
- Atkinson, R., Crawford, L., Ward, S., 2006. Fundamental uncertainties in projects and the scope of project management. *International Journal of Project Management* 24 (8), 687–698.
- Benn, S., Dunphy, D., & Martin, A. (2009). Governance of environmental risk: new approaches to managing stakeholder involvement. *Journal of Environmental Management*, 90(4), 1567–75. <https://doi.org/10.1016/j.jenvman.2008.05.011>
- Brown, G. W., McLean, I., & McMillan, A. (Eds.). (2018). *The concise oxford dictionary of politics and international relations* (4 ed. /, Ser. Oxford quick reference). Oxford University Press. Retrieved March 27, 2022
- Burger, D., & Mayer, C. (2003) *Making Sustainable Development a Reality: The Role of Social and Ecological standards*, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Eschborn
- Butt, A., Naaranoja, M., & Savolainen, J. (2016). Project change stakeholder communication. *International Journal of Project Management*, 34(8), 1579-1595.
- Carnall, C. A. (2007). *Managing change in organizations*. Pearson Education
- Clegg, S.R., Pitsis, T.S., Rura-Polley, T., Marosszeky, M., 2002. Governmentality matters: designing an alliance culture of inter-organizational collaboration for managing projects. *Organization Studies* 23 (3), 317–337

- Diers-Lawson, A. (2019). *Crisis Communication: Managing Stakeholder Relationships* (1st ed.). Routledge. <https://doi-org.proxy-ub.rug.nl/10.4324/9780429437380>
- De nieuwe afsluitdijk. (2018). *Ontdek de nieuwe afsluitdijk - Waar energie, water, ecologie en economie samenvloeien*.  
<https://deafsluitdijk.nl/wp-content/uploads/2014/05/DNA-druk-30april.pdf>
- Flyvbjerg, B., Bruzelius, N., Rothengatter, W. (2003). *Megaprojects and Risk: An Anatomy of Ambition*. Cambridge University Press, Cambridge
- Flyvbjerg, B. (Ed.). (2017). *The oxford handbook of megaproject management* (First, Ser. [oxford handbooks]). Oxford University Press.
- Green, A. O., & Hutton-Clarke, L. (2003). A typology of stakeholder participation for Company environmental decision-making. *Business strategy and the environment*, 12(5), 292-299.
- Hemmati, M. (2002). *Multi-stakeholder processes for governance and sustainability : beyond deadlock and conflict*. Earthscan Publications.
- Joubert, S. (2021). *Project, Program, and Portfolio Management: What's the Difference?* Northeastern University Graduate Programs. Retrieved May 21, 2022, from <https://www.northeastern.edu/graduate/blog/project-management-vs-portfolio-manageet-vs-program-management/>
- Krever, M., & Black, P. (2021). *Climate change: The Dutch are masters at taming water. The crisis is teaching them to let it flood*. CNN. Retrieved March 25, 2022, from <https://edition.cnn.com/2021/11/05/world/netherlands-flooding-strategy-germany-climate-cop26-intl/index.html>
- Lammers, J. (2009). *Dijk en meer*. Rijkswaterstaat.
- Law, J. (Ed.). (2016). *A dictionary of business and management* (Sixth, Ser. Oxford quick reference). Oxford University Press.
- Maylor, H., Brady, T., Cooke-Davies, T., Hodgson, D., (2006). *From projectification to*

- programmification. *International Journal of Project Management* 24, 663–672.
- Miller, R., & Hobbs, B. (2005). Governance regimes for large complex projects. *Project Management Journal*, 36(3), 42–50.  
<https://doi.org/10.1177/875697280503600305>
- Naqvi, I. H., & Aziz, S. (2011). The impact of stakeholder communication on project outcome. *African Journal of Business Management*, 5(14), 5824-5832.
- Oxford Learner's dictionary. (n.d.). governance noun - Definition, pictures, pronunciation and usage notes | Oxford Advanced Learner's Dictionary at OxfordLearnersDictionaries.com. Retrieved March 14, 2022, from <https://www.oxfordlearnersdictionaries.com/definition/english/governance>
- Pellegrinelli, S. (2011). What's in a name: Project or programme? *International Journal of Project Management* 29(2):232, 10.1016/j.ijproman.2010.02.009
- Project Management Institute (2016). Governance of portfolios, programs, and projects (Ser. Global standards). Project Management Institute. Retrieved 2022, from <https://public.ebookcentral.proquest.com/choice/publicfullrecord.aspx?p=4603812>.
- Roloff, J. (2007). Learning from Multi-Stakeholder Networks: Issue-Focussed Stakeholder Management. *Journal of Business Ethics*, 82(1), 233–250.  
<https://doi.org/10.1007/s10551-007-9573-3>
- Roloff, J. (2008). Learning from multi-stakeholder networks: Issue-focussed stakeholder management. *Journal of business ethics*, 82(1), 233-250.
- Sanderson, J. (2012). Risk, uncertainty and governance in megaprojects: a critical discussion of alternative explanations. *International Journal of Project Management*, 30(4), 432–443. <https://doi.org/10.1016/j.ijproman.2011.11.002>
- Tihanyi, L., Graffin, S., & George, G. (2014). Rethinking governance in management research. *Academy of Management Journal*, 57(6), 1535–1543.  
<https://doi.org/10.5465/amj.2014.4006>

- Turkulainen, V., Aaltonen, K., & Lohikoski, P. (2015). Managing project stakeholder communication: the Qstock festival case. *Project Management Journal*, 46(6), 74-91.
- Van De Ven, G.P. (1993). *Man-Made Lowlands: A History of Water Management and Land Reclamation in the Netherlands*. Utrecht, The Netherlands: Matrijs.
- Van Koningsveld, M., Mulder, J. P. M., Stive, M. J. F., Van Der Valk, L., & Van Der Weck, A. W. (2008). Living with sea-level rise and climate change: a case study of the netherlands. *Journal of Coastal Research*, 242, 367–379.  
<https://doi.org/10.2112/07A-0010.1>
- Van Marrewijk, A. (2007). Managing project culture: The case of Environ Megaproject. *International Journal of project management*, 25(3), 290-299.
- Van Marrewijk, A., Clegg, S.R., Pitsis, T.S., Veenswijk, M. (2008). Managing public-private megaprojects: paradoxes, complexity and project design. *International Journal of Project Management* 26, 591–600
- Verba, Y. S., & Igor', N. I. (2015). Sustainable development and project management: objectives and integration results. *Economic and Social Changes: Facts, Trends, Forecast*, 5(41), 135–146. <https://doi.org/10.15838/esc/2015.5.41.9>
- Vogt, B. (2019). The afsluitdijk as a complex system. *Insight*, 22(1), 32–36.  
<https://doi.org/10.1002/inst.12235>
- Woldesenbet, W. G. (2020). Analyzing multi-stakeholder collaborative governance practices in urban water projects in Addis Ababa City: procedures, priorities, and structures. *Applied Water Science*, 10(1), 1-19.
- Yongkui, L., Yilong, H., Mingxian, L., & Yan, Z. (2019). Impact of Megaproject Governance on Project Performance: Dynamic Governance of the Nanning Transportation Hub in China. *Journal of Management in Engineering* (Vol. 35, Issue 3). [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000681](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000681)