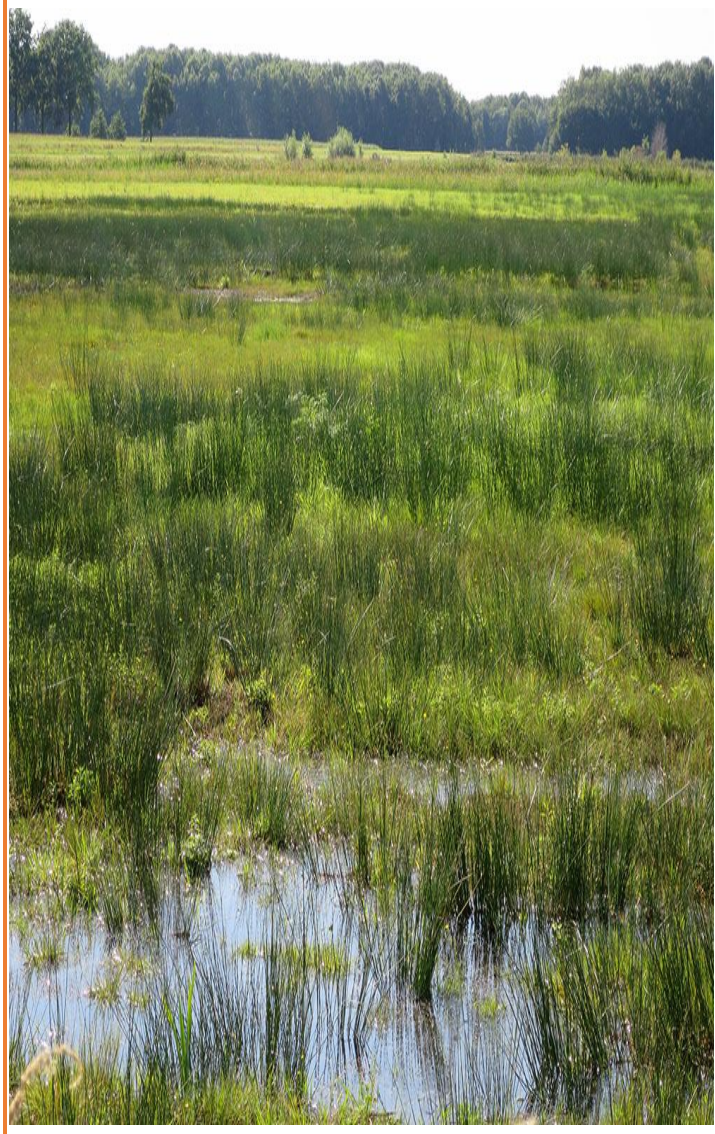
NATURE-BASED FLOOD RISK MEASURES IN THE REGIONAL WATER SYSTEM

A research into the influencing factors of the decision making process of the nature-based flood risk measure, the fourth storage basin.



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Introduction

Due to physical characteristics of The Netherlands, 59% of the country is liable to flood. As the Netherlands lies next to the North Sea and several large rivers flow through the country, there is a constant risk of flood. Throughout previous decades, changes to the climate have affected the global environment. The impact of climate change can be seen in the entire world by the raising level of seawater, and intensified precipitation. Flood risk in the Netherlands is not only increasing because of these climate changes but also by the cause of increasing economics and welfare. In order to cope with flood risk, the Netherlands have created considerable infrastructures like dykes and the Delta works. Around 1970 ecological values became more important in the national water policy. This initiated integrated water resource management (IWRM) as the basic philosophy at the Fourth National Water Policy. IWRM can be seen as an process that encourages the collaboration between on developments of land, water and other related sources.

After high water levels of 1993 and 1995 the National wide program Ruimte voor de Rivier was started where IWRM had an important role in the collaboration between stakeholders. In this program multiple nature-based flood risk measures were implemented in the great national rivers like the Rhine and the Waal in order to decrease the flood risk. Much research at these nature-based measures were done after the implementation of them. While these national flood risk measures did get a lot of attention, at the same time, regional nature-based flood risk measures were also realised. However at these regional measures, which are important in order to prevent floods in smaller areas, almost no research is done. Due to the fact that the regional water management works different then the national water management, and so little research at the regional system is done, a research gap is formed. The goal of this research is to analyse the decision making process of the implementation of nature-based flood risk measure in the regional water system. The case study that has been used in this research is the fourth storage basin in Breda. This case is chosen because of the fact that only one water authority was involved in the development. Moreover, the project is just finished which ensures that interviewee are still able to remember details of the development. The main research question that is joined to the research goal is as follows:

Which factors influenced the decision-making process that led to the development and implementation of a nature-based solution for the regional flood risk management at Breda?

Methodology

The decision making process would be researched using qualitative techniques. Seven different actors involved in the development of the fourth storage basin would be interviewed. The

information obtained from these interviews would be incorporated within a timeline. In addition, there would be an interview with an expert on projects within the local water authorities. The overall theory used within this research is Kingdon's stream model theory. Kingdon uses three different streams: problem stream, policy alternative stream and political stream. A problem can be seen if there is an undesirable situation. A Policy alternative is the creation of ideas and solutions by specialists, researchers or by other relevant parties. In the political stream, the political developments are described. The policy window is the moment when supporters of a plan can present their solution to a specific problem. This change is only small and can only be used when the three streams are linked. This theory of Kingdon has been implemented throughout this entire research.

Results

The results of the interviews show that several events have had a large impact on the decisions that were made during the development of the fourth storage basin. The events that influenced the decision making process the most occurred at the start of the high water levels of 1993 and 1995. As a result of these high water levels, which almost caused floods in Breda, the awareness of Waterschap Brabantse Delta and the municipality of Breda was raised. Some years earlier Victor Witter, Anton van Haperen and Jan Elsink came up with the idea of a nature-based storage basin in order to prevent Breda from flooding. After the 1993 and 1995 high water levels the idea became popular with other involved actors. Some years later, a new law was introduced which installed the reconstruction committee, The Baronie. This committee supported integrated projects that focussed on water, recreation and nature. Since the storage basin fitted within the required parameters, a subsidy was allocated to the project. This subsidy had a big impact on the overall development of the project and enabled the project to start.

During the development of the storage basin several other events, such as an active farmer who didn't want to sell his land, caused problems. However, thanks to the compensation payments arising from the 'Hogesnelheidslijn'(HSL), a high speed line from Amsterdam to Antwerp, extra funds became available to buy the land from the farmer. The HSL was obliged to create new nature areas because of the demolition of other natural areas in order to construct the train line. Other important factors that influenced the project were the policy change relating to the rules for the implementation of 'Ecologische hoofdstructuur' (EHS), a network of natural areas. With this change, it was possible to construct new parts of the network within the fourth storage basin, and this resulted in new funds that could be used to purchase specific plots of land in the area.

Another important factor of the development was the 'Aankoopstop' of Bleker. This was a nationwide policy whereby the national government would no longer support provincial purchases of

EHS land. As a result, the involved actors of the storage basin would have to part-finance the purchase of this land. Unfortunately, due to limited funds not all the required land could be purchased and have not been purchased even to this day.

Discussion

It has been found that the Kingdon theory can be applied well to the factors that influenced the fourth storage basin decision making process. Several events that occurred during the process can be linked to some of the streams of the theory. The problem stream can be related to the several problems that occurred within the development of the project itself and also prior to it. The policy alternative is linked with the idea of a fourth storage basin in order to solve the high water level problem in the Mark. The political stream is related to several decisions that have been made; for example, new laws, and also the adjustment of its policies. This research has focussed on one example of a nature based storage basin. Therefore, no comparisons are made with other similar developments of nature-based flood risk measures. However, potential follow-up studies may focus on comparing the development of several other nature-based flood risk measures on the regional water system.

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Chapter 1. Introduction

In the first chapter of this research, the subject of the thesis will be described by a critical literature discussion. The framework explains some background information for this research. With the project framework and research goal, the main research question of this bachelor thesis is explained. Followed by a research model and the main and sub questions that are related to this research.

1.1 Framework

The risk of floods in the Netherlands

Due to the fact that many great rivers like the Maas and the Rijn flow through the Netherlands and the North Sea is connected with many parts of it, the country can be seen as a coastal country. Large parts of the country lie below sea level. Because of these physical characteristics, 59% of the country is liable to flood (Kaufmann, van Doorn-Hoekveld, Gilissen & van Rijswick, 2016). As a consequence of these characteristics, the great flood of 1953 caused a national disaster with many casualties (Deltawerken, n.d.). Although the flood mainly affected areas of the county with low population, great economic damage was nevertheless caused. If floods of this nature were to happen today in highly populated areas, the potential casualties and economic damage could be catastrophic.

Global climate changes & economic growth

As the Netherlands lies next to the North Sea and has several large rivers flowing through it, climate change is becoming more important. It is expected that by 2100, the sea level will have risen by 35 to 85 centimetres and that precipitation will become more intense (van Minnen, Ligtvoet, van Bree, de Hollander, Visser, van der Schrier, & Klein Tank, 2013). This is the result of radiative effects, whereby CO_2 output into the Earth's atmosphere is causing climatic change around the world. Several observations since 1970 show that these climate changes are related to human activity such as the operation of factories and the use of motorised transportation (Milly, Wetherald, Dunne & Delworth, 2002). 'Greenhouse' gases are according to the working group I Four Assignment, are the most important factors contributing to the global rise in temperature. Since 1750 the CO_2 level has risen exponentially from roughly 280 parts per million (ppm) to 367 ppm in 1999 (Solomon, 2007). As

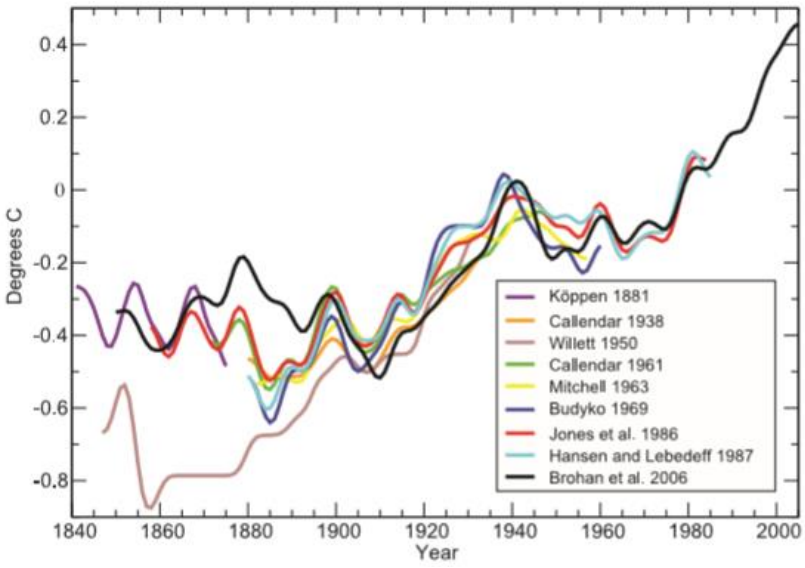


Figure 1 Globally rising temperature (Solomon, 2007).

a result, more solar radiation is being reflected back to earth. Energy from the radiation is warming the air and consequently the temperature is rising.

As can be seen in figure 1 many published records show roughly the same temperature changes. These changes are based on several items of research with different ways of analysing the temperature (Solomon, 2007). Well over 29,000 observations in 75 studies also show that the change in temperature is consistent with changing physical and biological systems (Change, 2011). It is therefore highly unlikely that these rising temperatures result from purely natural causes. There are several effects resulting from this temperature change: increased temperature of water in lakes, rivers and the sea, earlier and more melting snow from mountains and intensified precipitation as well as more time between precipitation (Meehl, Covey, Taylor, Delworth, Stouffer, Latif, & Mitchell, 2007).

Beside the global climate changes, another important factor within flood risk is the economic growth of a country. Flood damage in countries with a high economic welfare will probably be much higher than in countries with low economic welfare. If the economics of the Netherlands keeps rising, as it has in the past years after the crisis, the potential damage that can be caused by floods will also rise (CPB Netherlands Bureau for Economic Policy Analysis, 2016) (Kundzewicz, 2015).

The effect of rising temperatures and increasing welfare on flood risk in the Netherlands

The consequence of these climatic changes is a globally increasing level of flood risk (according to Milly, Wetherald, Dunne & Delworth). It is suggested that as temperatures rise, this trend will continue (Milly, Wetherald, Dunne & Delworth, 2002). Where in the past, flood risk was often measured by reducing the probability of floods, these days a risk-approach is often used in the Netherlands (Rijkswaterstaat VNK Project Office, n.d.). The risk-approach is a combination of the probability of flooding and the consequences resulting from floods, as can be seen in figure 2. This methodology indicates that highly urbanised areas are at higher risk because of the potential consequences when a river floods. This is in contrast to less urbanised areas where only a few houses are located; the consequences and therefore the risk is much lower in these areas. This method fits with the latest developments on climate change and welfare. As a result of the changing climate, the probability of a breach in a dyke is increasing as, for example, river water levels rise (Bouwer, Bubeck & Aerts, 2010). As said earlier, an important factor influencing the flood risk is economic welfare. As the economic welfare of the Netherlands is rising, so does the overall flood risk.

Figure 2 Risk-approach (Rijkswaterstaat VNK Project Office)

How did the Netherlands cope with flood risk?

Many inhabitants of Europe live in areas at risk of flood. This is especially the case in the Netherlands where 59% of the population live in flood risk areas (Kaufmann, van Doorn-Hoekveld, Gilissen & van Rijswick, 2016). Considerable infrastructure has been created in order to prevent the Netherlands from flooding. After the great flood in 1953, dykes were reinforced and plans were made for the construction of the Delta works. Rijkswaterstaat made these plans in order to create a higher level of protection of the Netherlands from flooding (Mostert, 2006). In order to develop these measures, the Delta commission was formed (Deltawerken, n.d.). This committee recommended the construction of the Deltaworks and supported the idea of creating more defensive structures to provide protection from flooding (Rijkswaterstaat VNK Project Office). These measures focussed on the protection against water through the construction of dykes and other infrastructure, as can be seen in the First National Water Policy of 1968.

Around 1970 ecological values became more important because the elections of 1973 were won by a central-left government (Mostert, 2006). This resulted in the Second National Water Policy in 1985 (Ministerie van verkeer en waterstaat, 1985). In this policy more attention for the water quality was an important aspect. The Third National Water Policy was published in 1989. The main goal of this policy was to maintain a safe country and healthy water systems. At the same time, a shift took place from a fight against water to coping with water. Therefore the subsidiary goal of this policy was to focus on integrated water management based on a water system approach (Ministerie van verkeer en waterstaat, 1989). In this policy integrated water resource management was introduced (Kaufmann, van Doorn-Hoekveld, Gilissen & van Rijswick, 2016). The essence of this approach was the collaboration of actors from several policy parties. The Fourth National Water Policy was active from 1998 till 2006 and introduced integrated water resource management (IWRM) as the basic philosophy behind the policy (Mostert, 2006). IWRM can be summarised as a process that encourages coordination between the development of water, land and other related sources, in

order to maximise economics and social welfare without compromising ecological values such as sustainability and ecosystems (Mitchell, 2005) (Global Water Partnership, n.d.). This plan resulted in measures that were based on an environmental friendly approach and provide additional space for water (Ministerie van Verkeer en Waterstaat, 1998).

The use of integrated water resource management in the Room for the river program

In 2007 the implementation of the National wide program Ruimte voor de Rivier (Room for the river) was started. This program is developed after the high water levels of 1993 and 1995 (Commissiemer. n.d.). Several measures had to be taken to protect the land from flooding. Protecting the land from flooding could have been done by raising the height of dykes. However, since some dykes had already raised as high as they could in certain places, they could not have been improved much more (Commissiemer. n.d.). Besides this, the idea of water management was changing from building dikes to providing the river with more space. This new way management can be seen as integrated water management (Wiering & Driessen, 2001). The national politics at that time preferred the solution to provide the river with more space to flow instead of improving the already existing dikes. Room for the river is the national wide plan which evolved from this decision. This program focussed on 39 places at important rivers in the Netherlands like the Waal and Rhine (Rijksoverheid, 2010). For each place specific measures were conceived in order to meet the required safety levels which was the main goal of Room for the river. One of the measures is for example the Overdiepse Polder (Roth & Winnubst, 2009). In this polder, terps (dwelling mounds) were made for farmers. By doing this, the land around the terps could flood without flooding the farms in the area. The second goal of the program was to improve the spatial quality of the river areas. IWRM has played an important role within the realisation of these project goals. To accomplish the safety and spatial quality goals of the program, many stakeholders had to work together (Commissiemer. n.d.). This process required a new way of policies and decision making processes in which there was a less top down hierarchy from the government and more interaction with the local community (Wiering & Driessen, 2001). The co-operation of the stakeholders that were involved at the program relates to the process of IWRM (Knight & Shamseldin, 2005).

The difference between the national and regional water management

The minister of infrastructure and environment and the provincial governance can, in the national water management, be seen as the controlling managers. In the waterplannen (waterplans), which are controlled and set up by the minister for the whole Netherlands and by the provincial governances for each province, the strategic goals for water management are defined (Kaufmann, van Doorn-Hoekveld, Gilissen & van Rijswick, 2016) (Ministerie van Infrastructuur en Milieu & Ministerie van Economische Zaken, 2015). The measures that are formed in order to comply to these

strategic goals are then implemented by beheerplannen (management plans). These plans are made and conducted by the regional water authorities. Rijkswaterstaat carries out the national goals that are made by the minister (Ministerie van Infrastructuur en Milieu & Ministerie van Economische Zaken, 2015). The Room for the river program has been a large project with an important role for Rijkswaterstaat. In the last years, since the start of the Room for the river program, many studies have been done at it. These studies focussed on several aspects of the program, such as the measures that have been used in order to improve the rivers (van Stokkom, Smits & Leuven, 2005). Other studies focused on the success and failures of governance with the introducing of this new program (Warner & van Buuren, 2011). Wiering and Driessen focussed more on the interactive policies of the Room for the river program.

Research gap in the literature

Despite the fact that integrated water measures, such as in the Room for the river program, are also realized in the regional water systems by local water authorities, few research is done at these measures. Regional water systems do however work different than the national water system because they must adhere to the strategic goals of the ministers and provinces. Besides that, collaborations with for example a municipality and other stakeholders occur more in regional systems than within the national system. Today, few information about the implementation of nature-based flood risk measures by the regional water systems is known. Due to the fact that, as said, the regional system is not the same as the national system, a research gap in information is formed. It is important to understand the decision making process of the regional government in order to manage regional flood risk effectively. With this research, new information about the establishing of these nature-based measures in regional water systems will researched which will reduce the current gap in information.

1.2 Research goal

The main research goal is to analyse the decision making process within the fourth storage basin that lead to the implementation of a nature-based flood risk solution in the regional water system.

This research focusses on nature based flood risk measures in the regional water system because almost no research is done at this subject. While in the national water system many research is done at the Room for the river project, where similar nature-based solutions are used such as in the regional system, the two systems work different from each other. As said earlier, the difference is that regional water authorities has to follow the strategic goals which are set by the province and minister in the national water system. To understand the decision making process at the development and implementation of flood risk measures in the regional water system, it is necessary to research the stakeholders, such as the municipality, that are involved in it. In order to analyse the

decision making process, Multiple Streams Framework (MSF) of Kingdon is used (Kingdon, 1995). The theory of Kingdon is specifically used because the with the MSF information of the decision making process can be easily researched and analyzed.

This research is necessary because trough climate changes it is important that the regional water authorities know how to effectively implement nature-based flood risk measures in order to protect the land from flooding. Because of the fact that in the Netherlands there is a high density of urban areas, it is more difficult to make well organized decisions in large scale flood risk measures projects, without disadvantaging several actors (Niemans, 2015). This research can give insight in how to effectively make decision in the process of implementing flood risk measures in the regional water system.

The case study that is used in this research is the Vierde Bergboezem (Fourth storage basin) in Breda. This nature-based flood risk measure is implemented into the river the Mark, in order to prevent Breda from flooding. The implementation of this measures by Waterschap Brabantse Delta, the regional water authority, required a collaboration between several stakeholders. With the MSF of Kingdon, the decision making process is researched.

The social relevance of this study lies in the fact that the regional water system is important for the protection against floods. When there is a greater knowledge about the decision making process of the implementation of nature-based flood risk measures in the regional water system, measures against floods can possibly be build more efficient. It is therefore also important to research the relationship between the government and stakeholders as is done at the Overdiepse Polder Roth & Winnubst, 2014).

1.3 Research model

To accomplish the research goal, a research model has been made which is shown in figure 3. This model visualises the research process, which involves interviews and policy documents.

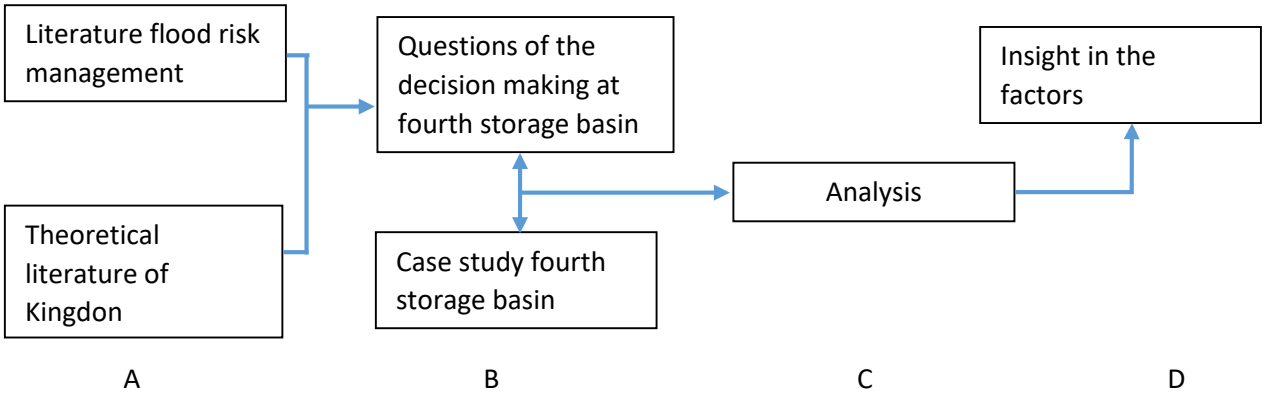


Figure 3 Research model

In the first phase of this research, literature will be gathered to obtain information on the subject. This will be literature about flood risk management in the Netherlands, climate changes and the consequences it has and theoretical literature about the theory of Kingdon (A). After this, questions are formed regarding the decision making process of the case study the fourth storage basin (B). To analyse to process, the information of the interviews will be gathered and compared. This information can be linked with the theory of Kingdon. To visualize the important factors a timeline will be made (C). When this research is complete, it gives insight in the factors that have influenced the decision making process (D).

1.4 Research question and sub-questions

The main research question of this research is as followed: *Which factors influenced the decision-making process that led to the development and implementation of a nature-based solution for the regional flood risk management at Breda?*

This research question will be supported by several sub questions. These sub questions are:

- How was the problem put on the political agenda by the actors? (Problem stream)

- Why is chosen for a storage basin and what alternative flood risk measures where available at the time of the decision making process? (Policy stream)

- How did the political climate of the national and local government influence the decision making process? (Political stream)

- Which events caused a window of opportunity to open in which the fourth storage basin was presented as a solution? (Policy window)

Chapter 2. Theory

In the second chapter, the theoretical framework is described. In this framework, first a summary of the MSF (Multiple Stream Framework) is given that will be used in the bachelor thesis. This is followed by the operationalisation of the theory supporting the case study. The research strategy, research material and further information about the case study are also described.

2.1 Theoretical framework

In the late seventies the American political scientist Kingdon executed empirical research on agenda- and policy-making of healthcare and transport. At the time of this research Kingdon wondered how political issues received attention and placed on the governmental agenda (Kingdon, 1995). Central to these thoughts was the overall question of how to decide when the time is right to effect new policy arrangements. After his research Kingdon developed the multiple stream framework (MSF) theory. His theory was strongly influenced by the garbage model of Cohen, March and Olsen (Cohen, March & Olsen, 1972). Kingdon's Theory is similar to the garbage model in that the theory consists of separated streams in a system. Moreover, the results of these streams are dependent on the coupling of the streams themselves. Where the garbage model consisted of four streams (Stout & Stevens, 2000), the MSF is reduced to three different streams: problems, policies and politics. The participants are not linked with a specific stream but can occur on any of the three streams (Kingdon, 1995).

Problem stream

In the problem stream, problems are defined and recognized by actors. To understand this process, it is important to know why certain problems receive more attention than others. Not all undesirable situations can be seen as problems. A problem can be described as a situation where actors are convinced that a solution has to be conceived in order to solve a certain undesirable situation. According to Kingdon there are three different ways by which a problem is defined (Kingdon, 1995).

First: when different values between the current and the optimal state are present.

Second: when two organizations are aiming for the same result, and one them hasn't achieved it, it can be seen as a problem.

Third: a problem is determined when an issue is placed in a certain category such as crisis or disaster. Policymakers often recognize a problem when indicators, such as feedback messages, for example when the evaluation of a policy mentions a problem. Policymakers can influence the political agenda by recognizing these problems. The agenda can be seen as a list of subjects and problems where politicians spend time and money (Kingdon, 1995).

Policy alternatives stream

According to Kingdon, the policy alternatives stream serves as a way in which proposals for alternative policies are being made. Policy entrepreneurs can be seen as the party that is convinced of a certain proposal of a policy alternative (Kingdon, 1995). It is imported that good arguments are made to support a proposal for a policy alternative in order to receive collaboration from other parties. It is however possible that numerous actors, which are not seen as policy entrepreneurs, are influencing the political agenda of a governmental organization. When this collaboration is achieved, it is possible to set the proposal on the governmental agenda, which then can be implemented (Verduijn, 2014). In order for an alternative to maintain, it has to be meet to three criteria according to Kingdon. The alternative has to be technological acceptable, which means that it has to be logical and technical enforceable. Second, the policy proposal has to connect with the current values and norms of experts. And third, the policy proposal has to be enough prepared against impediments like the effect of climate changes. In a selection process the best alternatives will be chosen.

Political stream

The political stream is independently developed from the problem and policy streams. Kingdon distinguishes between different elements: the national political climate, organized political strengths, and interchange between members of the government and the senior officials and the division of powers between different administrators (Kingdon, 1995). The national political climate provides a base for ideas. This isn't only decided by public opinion but also by views within government. The need to influence political strengths provides an insight into how much effort has to be made to get support from other interest groups for the implementation of a new policy proposal on the agenda. There is also a possibility that division between civil servants in governmental services may lead to competition between them. In the political stream, consensus is achieved through negotiation and not through attempting to persuade others.

Policy windows

The policy window can be seen as a 'window of opportunity', the moment at which the proponents of a specific policy proposal can present their solution to a problem (Stout & Stevens, 2000). It is the opportunity upon which an alternative can be presented. However, these moments are rare and become accessible only at certain irregular times. The opening of a policy window depends on sudden changes of a problem in the political stream. In the problem stream this can, for example, happen when there is an acute change or a crisis. In the policy stream it may occur when a new government takes office. The linkage between the three streams can create a policy window through which the decision agenda may be influenced. A policy entrepreneur who can be seen as an actor who links solutions to problems, is used to link these streams and to make sure that problems are connected with solutions. Kingdon also uses the concept of 'spillovers'. According to Kingdon, when a

subject receives attention, it is likely that similar projects will also attract attention and therefore develop. The creation of new policies is important because when participants get used to the new policies, these can be established as the new standard for decision-making in future situations (Sartorius & Zundel, 2005).

2.2 Operationalisation

In the operationalisation the theory is made applicable in order to apply it to the selected case study. The multiple stream framework is divided into several streams as described above.

Problem stream

The problem stream represents the problem-facing actors in a specific situation. In the case of the fourth storage basin, it was important to understand how the problem was perceived by the different actors who were linked to the project. Kingdon also speaks about a comparison between the circumstances of the problem in relation to other similar problems. Therefore, it is interesting to see how actors, like Waterschap Brabantse Delta and the municipality of Breda evaluated the problem and if they used comparisons with other similar cases. All the actors had their own opinion as to what the optimal solution to the problem should be. For example, Staatsbosbeheer had solutions that were based more on nature, while the municipality of Breda gave priority to its people (Wouter Schuitema (Gemeente Breda), personal communication, 2016). These diverse opinions were therefore researched (. The positioning of a problem within a specific category is influenced by the perception of it being small or large. By categorising these problems, the importance of the problem for each actor will become known. This knowledge could influence the decision making process of the project.

Policy alternatives stream

In the policy stream, policy alternatives are discussed and evaluated. To apply this part of the theory to the case study in this bachelor thesis, several sub-questions are raised to facilitate answers to questions about the policy stream. In this case, the active policies applied during the decision making process for the fourth storage basin will be analysed. The construction of the questions was researched to establish if all the alternatives would be thoroughly considered, by questioning what other possible measures were and why these were not implemented. These are policies on national as well as local levels. To be able to research this, interviews would be held with the responsible actors such as Staatsbosbeheer and the province of Noord-Brabant. In addition, research would be undertaken to establish what other alternative measures were in place to protect the Mark from flooding. Some actors have more resources and these might have a greater influence on the decision making process and how a particular measure was chosen. Therefore, the resources of all parties will also be researched in order to find out if that is the case.

Political stream

Kingdon identifies several elements in the political stream such as the national political climate. This could refer to the governmental ratio at the time of the construction of the fourth storage basin. Because political influence might have affected the choices that were made during the process of choosing an alternative, it is important to research the several levels of political climate that existed at that time. Therefore, certain political parties in the Province of Brabant, Waterschap Brabantse Delta and the municipality will be researched. By answering these questions, insight can be given into the process. At the same time, insight into the decision making process will reveal which decisions were influenced by the active political climate at that time. For example the

Policy window

Several entrepreneurs made it known that they were willing to start with the development of the fourth storage basin project. This was done at the moment at which the three streams of the theory came together. Therefore, interviews were held with all the actors in order to understand which actor had been an entrepreneur in the project. To understand what caused this window of opportunity to be opened in the fourth storage basin, actors would be asked what the most important events or other factors were that caused this. Once it was understood what these windows of opportunity were, it would be possible to research if these moments were also used. The first Policy Window opening might indicate that there were no problems. However, if several windows of opportunity had passed, then it is likely that problems appeared during the process. It is possible that the development of the fourth storage basin created 'spill over' effects. The actors will be interviewed and asked if the creation of this storage basin had caused the development of new measures.

Features of the case study related to the MSF

This schedule gives an overview of the operationalization with the related features from the case study to one of the three streams of the theory of Kingdon. In the problem stream the flood risk in Breda is a local problem, while the climate changes which are causes flood risk to increase is an global problem. The related features of the case study to the policy alternative stream are the alternative flood risk measures that were available at the time of the development of the fourth storage basin. The features that are linked with the political stream are the influences of the national-wide policies on water management. These policies may have influenced the decisions that were made in the development of the storage basin. The political climate of the municipality of Breda and the Province of Noord-Brabant can also have influenced the decisions that were made during the development. Changing laws may also have played an important role in the development. Because these features have been relevant for the development of the storage basin, it is important to use the MSF of Kingdon to research these features.

Stream	Features of case study
Problem Stream	- Flood risk Breda (Local) - Climate change (Global)
Policy alternatives Stream	- Alternative flood risk measures
Political Stream	- National-wide policies - Political climate municipality Breda/ Province Noord-Brabant - Changing laws

Figure 4 Overview of the features of the case study related to the MSF of Kingdon.

2.3 Conceptual model

The conceptual model will give a greater outline of how the theory is going to be used in this research. The most important criteria are included in this model as can be seen in figure 5. In the first part, the multiple streams framework is used which leads to the three main streams of the theory. By using this theory in the case study, more information is acquired. The three separate streams come together, with the use of policy entrepreneurs, in the window of opportunity. The window of opportunity of the case study of the fourth storage basin is analysed. This analysis includes interviews from actors as can be seen in the model. This analysis enables discussion about policy changes in similar flood risk measures.

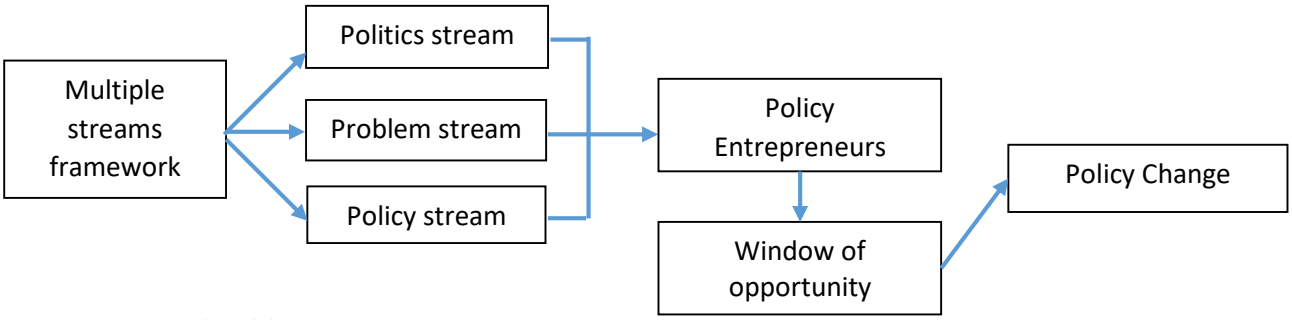


Figure 5 Conceptual model

Chapter 3 Methods

The third chapter provides insight into the methods that were used during this research. The research methods will give insight into the fact why is chosen for a qualitative research. Besides that, the choice for this particular case study is explained, as are the materials that have been used in order to carry out the research.

3.1 Research Methods

This research will be qualitative oriented because detailed information and data about feelings, emotions and other perspectives can be attained more easily by this method than by quantitative research (Saldaña, 2011). Interviews enable different perspectives of actors to be obtained such as body language, voice and intonations (Opdenakker, 2006). Extra information gleaned from the behaviour of the interviewee himself should ideally be obtained by face to face interviews. Research using documentary information will also be used to gather information about the main elements of the different streams of Kingdon's Theory, and of the storage basin. This research includes scientific articles, policy documents of the actors and books on the subject of flood risk management and decision making processes. The combination of these two data research sources will provide answers to key questions and to the decision making process relating to the fourth storage basin. In this respect it is necessary to select only the most important actors who have the best connection with the fourth storage basin. By undertaking these interviews, knowledge about the fourth storage basin can be expanded in addition to gathering more information about the actors and how they became an important component in the decision making process. With the help of this additional information an evaluation of the decision process can be made, which in turn should answer the main question arising from the research. The interviews will preferably be done by face-to-face contact as this provides deeper insight into the reactions and appearance of the interviewee. This can result in a better understanding of the responses provided by the interviewee (Saldaña, 2011). However, if this is not possible, the interviews will be conducted by phone. An interview guide will be created that lists diverse questions. Once the guide is created it will be possible to better evaluate the statements provided by the several actors in the decision making process, and any new information gathered from the interviews will reveal other perspectives about the actors. Perspectives that are formed from interviews with a certain actor may change after new perspectives are identified following interviews with other actors. The detailed information that can thus be acquired from qualitative research will have great advantages over quantitative research. However, the disadvantage is that interviews are time consuming so only a few actors can be interviewed. Information from many more actors can be obtained using quantitative research surveys but this information will be less detailed because the same questions will be put to all the actors. Nevertheless, triangulation of the research

information will create more thorough knowledge. Using Kingdon's Theory, the knowledge of experts, information from articles and interview results will create knowledge to form a reliable basis for discussion about policy change.

3.2 Case study

In this research, a single case study was selected: the fourth storage basin. This choice was made because of the benefits arising from the use of a single case study as opposed to multiple case studies. The main advantage of this particular case study is that this project is almost complete. Accordingly, the actors involved in it would be easier to find and able to remember the events that occurred during the development of the project. The second advantage is that the storage basin is not located on the boundaries of several governmental organisations. Therefore, multiple organisations are not involved in the decision making process. Only one province, municipality and water authority is involved within the decision making process namely the province of Noord-Brabant, the municipality of Breda and the water authority Waterschap Brabantse Delta. Because only one case study is being used, information is not spread between numerous organisations and it is therefore easier to obtain information from the concerned parties. A slight disadvantage arising from a single case study is that no comparisons can be made with other studies. However, by focussing on a single case study, thorough information about the fourth storage basin can be acquired.

The city of Breda lies in the province of Noord-Brabant in the Netherlands. The rivers Mark and Aa of Weerrijs, which flow from Belgium, pass through the town that has a canal around the centre. Although Breda is not very sensitive to flooding, heavy rainfalls can cause the canal to trigger floods (Advies- en ingenieursbureau DHB, n.d.). This is because the incline of the Mark between Breda and the Mark estuary is only 20 centimetres, whereas the freefall from the source of the river to Breda is more than 20 meters (Janse, Keizer, Blaas, Schuitema & Meerman, 2013). Because the river has so little incline in Breda, it's difficult for the water the flow through the city. As the water can't easily flow downwards to the Mark estuary which then flows into the Maas, the water will accumulate and rise in the channels within the city.

As a consequence of the aforementioned climate changes, the risk of flooding is increasing. However, in recent years several precautionary measures have been taken to reduce the risk of flooding in Breda. Four storage basins, named Weimeren, Rooskensonk, Terheiden and the fourth storage basin, have been realised to prevent the Mark from flooding (Provincie Noord-Brabant, 2005). A storage basin is a system to provide a higher flow capacity of a river by holding water in a specific area that has been specifically developed for this purpose. By allowing water to flow into this area, the water height of the river will drop, thus reducing the risk of flooding.

The fourth storage basin is the last of four storage basins that have been created to make Breda safer from possible flooding by the Mark. Before the realisation of these measures the risk of flooding was once in 50 years. After completing the construction of these actions the risk of flood has been reduced to once in 100 years (Advies- en ingenieursbureau DHB, n.d.) (Hell & Schellekens, 2006). The fourth storage basin is located along the Mark, as can be seen in figure 6. The construction of the fourth storage basin took place in three different phases. In the first phase, which was completed in 2010, the capacity of peak flows in the Mark was extended. With the second phase, the groundwater level was raised to enable more water to be contained within the area. In addition, a nature reserve was created. With the third phase, the potential for recreational activity was provided. The total growth of area is 320 hectares (Janse, Keizer, Blaas, Schuitema & Meerman, 2013).

Figure 6 Division of the Fourth Storage Basin (Janse, Keizer, Blaas, Schuitema & Meerman, 2013)

The construction of the fourth storage basin was a Brabantse Delta water authority project. This project fitted within the framework of the Natuurlijke Klimaatbuffers subsidy arrangement by the department of VROM. Almost 1 million euros were contributed to the project which covered part of the total cost amounting to 20.1 million euros. Following the completion of the fourth storage basin some parts of the area were still used for agricultural purposes. While the project was completed around 2014, some of the land is still being used which may indicate that the decision making process did not occur seamlessly (Janse, Keizer, Blaas, Schuitema & Meerman, 2013).

3.3 Research material

Interviews

Eight interviews were held with key actors involved in the fourth storage basin. Jan Janse from Staatsbosbeheer was interviewed because of his role in creating and preserving nature. Hans Leermakers from the then Dienst Landelijk Gebied had been the project manager for a large part of the project. He had good insight into the cooperation between all the parties. Hans Blaas from Waterschap Brabantse Delta had worked on the project for a long time and understood the

importance of the storage basin for the safety of Breda. Wouter Schuitema from Gemeente Breda was also interviewed. The local municipality had the important role of delivering the required zones each with a specific function in the area. Peter Jannsen from the Province of Noord-Brabant knew more about the decisions that were made, and which influenced the fourth storage basin on both the national and the provincial scale. Victor Witter and Anton van Haperen were the founders of the project and had important knowledge about the option of building a fourth storage basin. In order to obtain a deeper level of research it was also important to interview an expert in order to compare the results of this research with his knowledge. Leo Santbergen is an expert on integrated area development with water. In figure 7, an overview of the interviews with the actors is given.

Name	*Organization*	*Date*	*Place*	*Duration*
Wouter Schuitema	Gemeente Breda	13/4/2016	Gemeente Breda. Breda	1:21:19
Jan Janse	Staatsbosbeheer	18/4/2016	Staatsbosbeheer. Tilburg	0:51:26
Hans Blaas	Waterschap Brabantse Delta	26/4/2016	House of Hans Blaas. Arnhem	1:38:22
Hans Leermakers	Dienst Landelijk Gebied	2/5/2016	Province of Noord-Brabant. Den Bosch	1:34:27
Anton van Haperen	Staatsbosbeheer	9/5/2016	House of Anton van Haperen. Koudekerke	Estimated: 1:10:00
Victor Witter	Waterschap Brabantse Delta	11/5/2016	House of Victor Witter. Breda	Estimated: 1:05:00
Peter Janssen	Province Noord-Brabant	13/5/2016	Waterschap Brabantse Delta. Breda	0:51:26
Leo Santbergen	Waterschap Brabantse Delta	14/6/2016	Waterschap Brabantse Delta. Breda	1:08:28

Figure 7 Interviewees

Timeline interviewee

When interviewing an actor, that person might disclose much interesting information about the decision making process, but sometimes not in chronological order. This creates an obstacle to the correct understanding of the overall process. To help better understand the decision making process, the interviewees all generated timelines that included the most important milestones occurring in the process. The seven timelines of the seven actors were overlaid to create one large timeline. The

milestones from the different actors were then evaluated. The timeline was also linked with the Kingdon's Theory and made clearer with the help of color coding.

Analyses of the interviews

The interviews that were held are transcribed using Atlast.ti. After the transcriptions were completed they were coded to represent the words and thoughts of the interviewees. This helped to structure the interviews and also make it easier to collate the data. The coding enabled selective collection of the most important processes of the fourth storage basin. The color coded data was evaluated and comparisons made. In case of a failure of the recording equipment the interview would, if possible, be repeated. Otherwise, a summary of the interview was made and checked by the interviewee. The information gathered and used in this research to create the timeline, was considered reliable since it was based on the knowledge of seven actors who were all involved in the decision making process of the project. Since the project started over fifteen years ago, information gathered from a single actor could not be entirely relied upon. However the combined information received from seven actors directly involved in the project would be very reliable.

Documents

In this research documents were, besides the use of interviews, used to obtain information about the fourth storage basin. By having access to documents about the project itself, much information concerning the relevant plans and funding was available. In addition, scientific articles were used to obtain more information about the Kingdon Theory. Information obtained from these articles helped to implement the theory into the research. Documents published by the government were used to help see what the vision of parties like the municipality and province was for the area of the fourth storage basin.

Chapter 4 Results

The results of the interviews are presented in this chapter. The development of the fourth storage basin was during the project divided into four phases. In this research, those phases are mostly held the same. However the preparation phase is added in order to make an clear overview of the development process of the storage basin. Accordingly the research results are also divided into phases and reflected using Kingdon's Multiple Streams Framework.

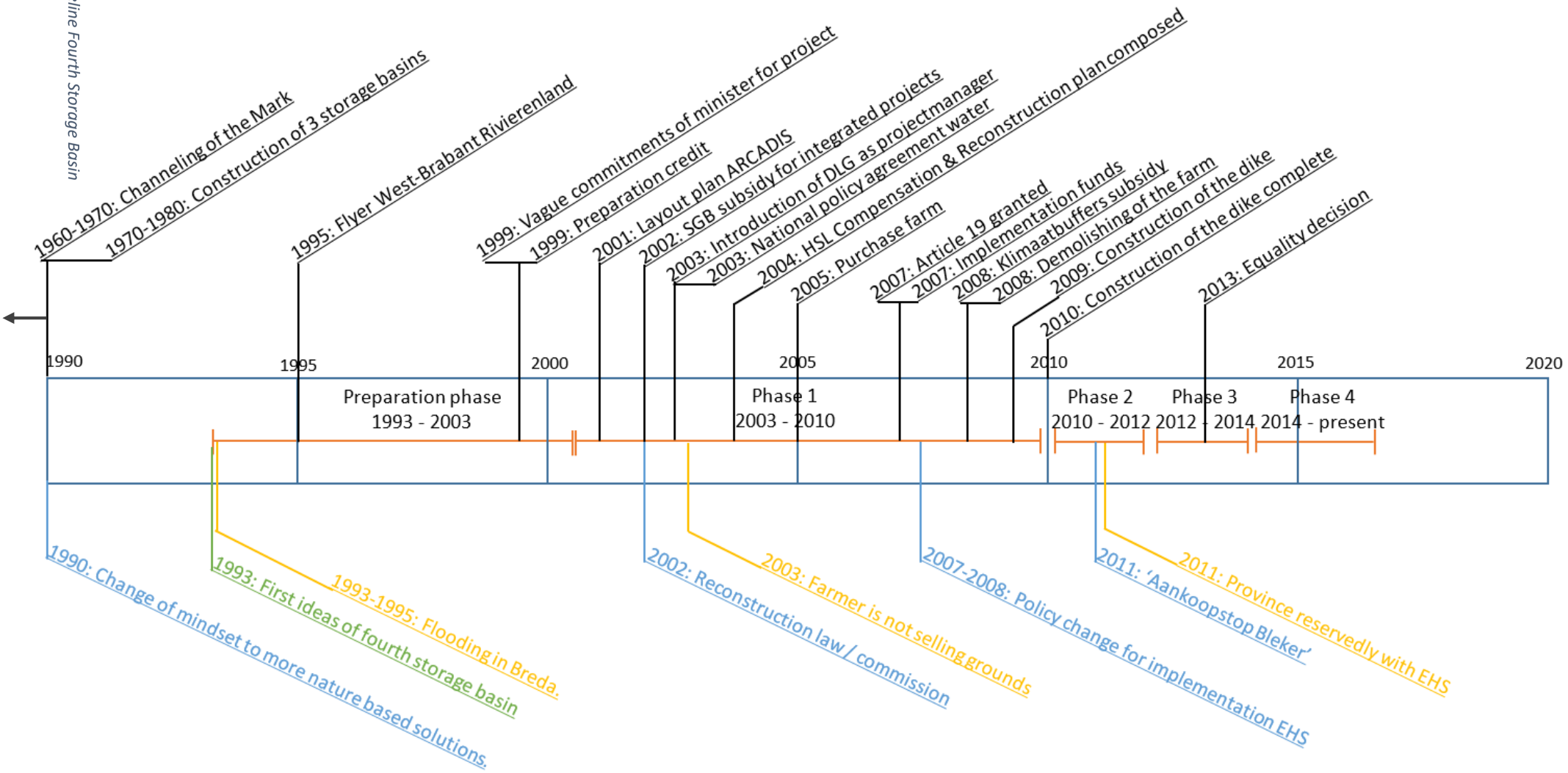
4.1 Timeline

During the course of the interview process, all the actors created a timeline illustrating the most important steps in the decision-making process of the fourth storage basin. This timeline can be found in figure 8 and is based on documents relating to the fourth storage basin and the interviews with the relevant actors (ARCADIS, 2006). The project group divided the project into four different phases as can be seen in the timeline. The first project phase placed emphasis on land acquisition and dyke construction. The aim of the second project phase was the development of nature. In the third project phase, recreation was the most important part. The fourth and current project phase comprises project completion. In between the timeline several points are marked. These points represent important steps in the overall decision-making process of the project. The most important elements, which can be related to the Kingdon theory, are highlighted using specific colours. Problems are highlighted in orange, whilst the political alternatives are in green and political developments are coloured blue.

4.2 Preparation phase

During this phase the overall idea for the project was created. Between 1950 and 1955 great parts of the Mark had been canalised to improve the discharge capacity of the river. Although it led to a greater discharge capacity, the river had no room to flood anymore because of the disappearing floodplains (Natuurlijke Klimaatbuffers). To enable flooding again, the storage basins of Weimeren, Rooskensdonk and Terheijden were realised around 1970. After the great floods in 1953 much attention was given to *'primary flood defence structures'* according to Victor Witter from Waterschap Brabantse Delta. However *'secondary flood defence structures'* were less important at that time and this resulted in less funding. Due to climate change and the earlier canalisation, the third storage basin had barely enough capacity to prevent Breda from flooding (Victor Witter (Waterschap Brabantse Delta), personal communication, 2016). This was the case until the high water levels of 1993 and 1995, where cities almost flooded in several parts of the Netherlands. These high water levels also threatened to flood Breda. At this point the importance of *'secondary flood defence structures'* and additional measures became evident. Therefore more funds were reserved for a

Figure 8 Timeline Fourth Storage Basin



project (Victor Witter (Waterschap Brabantse Delta), personal communication, 2016). There is in fact an difference between the current and optimal state. Therefore the problem of the high waters in Breda can be seen as the most important issue in this case study, related to Kingdon's problem stream.

Flood problems resulted in the first Idea for the storage basin

The first ideas for creating a storage basin emerged between 1993 and 1995. This idea of a storage basin was setup by Victor Witter from Waterschap Brabantse Delta, Anton van Haperen from Staatsbosbeheer and Jan Elsink from the municipality of Breda (Victor Witter (Waterschap Brabantse Delta), personal communication, 2016). Before the high waters in 1993 and 1995 the three actors had invented this alternative in case new measures against high water were needed. They can be seen as the policy entrepreneurs of Kingdon's 'policy stream' because they introduced an alternative to the problem (Kingdon, 1995). The idea for a storage basin was based on several facts according to Victor Witter from Waterschap Brabantse Delta. First of all, Waterschap Brabantse Delta became worried about the regional flood defences in and around the Mark, especially after the high water levels in 1993 and 1995 which almost flooded the city of Breda. Secondly the mind-set of Waterschap Brabantse Delta was slowly changing to a more ecological way of working (Staatsbosbeheer, Integraal Waterbeheer West-Brabant). This mind-set changed was used in the *'Management plan'* of the West-Brabantse water authorities. This ecological mind-set stood at the base of the construction of new flood risk measures and influenced the decision making process of them. Therefore a storage basin fitted well into this mind-set because a nature area would be created that also had the capability to flood. This change of mind-set is one of the political changes, in accordance with Kingdon's Theory, that supported the implementation of the storage basin. This type of collaboration between actors from several parties is, according to Leo Santbergen (Specialist on projects of regional water authorities), an example of how the common struggle against climate change is handled now and into the future. At that time, this plan was a really progressive concept to cope with the high water levels in the Mark. Other alternatives, such as increasing the height of dykes were considered by Waterschap Brabantse Delta, but since the mind-set changed to more nature-based solutions, these were not considered to be better than a new storage basin (Anton van Haperen (Staatsbosbeheer), personal communication, 2016).

How the funds for the project were gathered

As a consequence of these political developments, the management of Waterschap Brabantse Delta enabled funding for water projects such as the fourth storage basin. It is worthy of note that, according to Anton van Haperen (Staatsbosbeheer), vague commitments were made in 1999 by the Minister for financial support to the construction of the storage basin. These commitments were not

honoured but caused other actors, such as Waterschap Brabantse Delta and the Province, who believed in the project to provide funding support. This funding from the province of Brabant enabled to launch the project. Due to this political decision, which in the end enabled funds for the project, the political stream of Kingdon is connected to the start of the project. The actors involved at this time were Waterschap Brabantse Delta, Staatsbosbeheer, Province of Brabant and the municipality of Breda. The actors employed the services of the consultancy firm ARCADIS to design a draft plan for the fourth storage basin (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). In this design, the interests of all parties were considered and as many good features as possible were incorporated into the plan. There was however disagreement between the actors as to whether or not the storage basin should be regulated. When the storage basin should be regulated, the water authorities could decide when and how much the storage basin would flood. According to Anton van Haperen, Staatsbosbeheer wanted precedence to be given to nature and that would mean no regulation. However, Waterschap Brabantse Delta wanted to control the storage basin. Finally, a regulated storage basin was agreed upon, which meant that it could be opened when the Mark's water level was high, and closed when the Mark's water level was normal. A location had to be selected in order to draw up a draft plan for the storage basin. The three other existing storage basins were situated around the area in which the fourth storage basin could be sited. It was, according to Victor Witter (Waterschap Brabantse Delta), logical for the new storage basin to be located adjacent to the other basins. However, a more important consideration was the incline of the Mark which is much lower only after it has passed Breda. Upstream and around Breda water accumulates, creating high water levels with inherent flood risk. The location of the storage basin was therefore sited just after the Mark leaves the city where the land is lower, thus drawing out any accumulation of water. There was unanimous agreement and approval to this location by the concerned actors because all their interests were being served (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). Staatsbosbeheer had the opportunity to create a large nature area with the storage basin in this location whilst Breda had a new nature and recreation area which, being adjacent to the city, was easily accessible. The alternative that was introduced by the policy entrepreneurs Victor Witter, Jan Elsink and Anton van Haperen meets the three criteria of the policy alternatives stream of Kingdon. The storage basin was technical enforceable, the storage basin complied to the values and norms of the stakeholders, and the storage basin was prepared for future climate changes. Because of this the alternative and the location of it was approved.

Formation of the reconstruction committee The Baronie

Between 1990 and 2000, swine fever became a major problem in Noord-Brabant. The national reconstruction law was introduced in 2002 (as evidenced in government documents Rijksoverheid,

n.d.) to deal with this. The law enabled the possibility of freeing specific zones from swine fever and several committees were established with the task of identifying solutions to the problem. The government had, according to Peter Janssen from the province of Noord-Brabant, stated that measures to eradicate swine fever were going to be so far reaching that it would be necessary to reorganise the whole rural area. The province of Brabant invested a lot of time and energy implementing this national law. Several committees were installed that focussed on specific areas of Brabant. The committee that focused on Breda was named 'The Baronie'. The members of this committee comprised the municipality, nature parties, agricultural parties, regional water authorities etc. and had the objective of not only finding solutions to the swine fever problem but also of addressing several other governmental tasks in the region. These tasks included, amongst others things, resolving issues relating to water, recreation and nature. The province saw the establishment of this committee as an opportunity to integrate several parties' projects and supported this with subsidies. This subsidy was named 'Subsidieregeling gebiedsgericht beleid' (SGB) (Peter Janssen (Provincie Noord-Brabant), personal communication, 2016). This was an important part of the budget for the project due to the high subsidy of more than 3 million euros as can be seen in appendix 4. In the theory of Kingdon, these political developments can be seen as an example of the influence of the political stream. Because of these new developments in the political stream, the reconstruction commission supported the overall creation of the project together with high subsidies.

Policy window of the preparation phase

The project was started after the problem was clear, the funds were gathered and the reconstruction commission was introduced. Because these events happened within a short period of time the three streams of the theory could be linked. These events in which the high water levels, political changes and funds came together can be seen as the policy window of the theory of Kingdon that started the project.

4.3 Project phase 1

After the project group was established in the preparation phase, the first phase of the project itself began. During this phase several steps had to be taken in order to realize the storage basin. These steps comprised land acquisition in the area and the construction of the dyke. But before these steps could be taken, a new actor was involved in the project in 2003. Waterschap Brabantse Delta, in common with the other actors, had multiple interests in the project and therefore had difficulty in being the overall manager of the project. Because Waterschap Brabantse Delta was mainly focused on floodrisk, Staatsbosbeheer on Nature and the municipality on providing the citizens of Breda with an area which could be used for recreation as well as providing safety (Wouter Schuitema (Gemeente Breda) & Hans Blaas (Waterschap Brabantse Delta) Personal communication, 2016). Therefore,

according to Hans Leermakers from Dienst Landelijk Gebied (DLG), they appointed DLG as overall project manager. DLG had no conflicts of interest with regards to the project and could therefore independently lead the process. DLG was an national wide organization which had the goal of supporting the realization of collaborative developments in the rural area (Kennisbankherbestemming, n.d.)

The active farmer caused a large problem in the development

In order to construct the storage basin in the chosen location, a large area of land had to be acquired. Together the involved parties owned several hectares of land in this area. However, this was not nearly enough to accommodate the storage basin (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). Therefore, land belonging to several farmers in the area had to be purchased. The land belonging to small farmers was not much of an issue and most of it could be bought. However, there was one large problem which can, in project phase 1, be seen as a new process-problem in Kingdon's problem stream. This problem was that there was an active farmer in the area who did not want to sell his land that comprised 50 hectares, to the project in 2003 (Hans Blaas (Waterschap Brabantse Delta), personal communication, 2016). There were several 'work around' options if this farmer's land was not available. The solution would involve the construction of a dyke around his farm and the payment of compensation in the event that his land flooded when the storage basin was used. However, the farmer's land was located in the middle of the storage basin area and all parties felt that it would not be appropriate to build a dyke around the farmer's house (Wouter Schuitema (Gemeente Breda), personal communication, 2016). Waterschap Brabantse Delta believed that it would be ideal if the farmer's land could be acquired because then there would be no compensation liability when the basin flooded. Staatsbosbeheer and the province agreed that acquisition of the farmer's land would be ideal because of the potential benefits to nature in the area (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). It was therefore decided that the farmer should be 'bought out' and his 50 hectare thus acquired. The total area of the storage basin comprised 300 hectares. Negotiations between the farmer and the actors took a long time and much more money was needed (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016).

Funding because of the introduction of the HSL

With the project on hold, solutions had to be found to finance the cost of the farmer's land. At the same time, the national government was developing the 'Hogesnelheidslijn'(HSL), a high speed train line from Amsterdam to Antwerp. This provided a great solution for the overall project and can be seen as a 'political change' from the 'political stream' in Kingdon's theory. The HSL line would run through several areas of natural beauty and this would involve financial compensation. This

represented a great change for the project because considerable funding was made available to pay compensation for not only the HSL project but also the A16 highway that was to be constructed (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). The process of buying out the farmer was nevertheless a long process and the negotiations between the project group and the farmer led to a high degree of tension. The farmer wanted more compensation money than was available and this almost led to the HSL committee cancelling the project (Hans Blaas (Waterschap Brabantse Delta), personal communication, 2016). In the light of the fact that it was so important to be able to use some of the HSL funding, the chief of Waterschap Brabantse Delta initiated fresh negotiations. In the end, more money was made available by the HSL committee and the farmer was *'bought out'* in 2005. Since the HSL committee made the farmer's land acquisition possible, they remained in the project as were the funds to compensate the natural value as told by Hans Leermakers.

Important political decision with article 19

In order to change the *'Bestemmingsplan'* (Development Plan) *,* Waterschap Brabantse Delta had called on article 19 at the municipality. The municipality was involved in the project and for this reason the request did not create too many issues, the development plan was therefore approved as can be seen in appendix 2. This also represented an important political decision of the political stream of Kingdon that enabled the construction of the storage basin. Otherwise it would have been possible to stop the development of the storage basin completely (Hans Leermakers (Dienst Landelijk Gebied) & Wouter Schuitema (Gemeente Breda) personal communication, 2016). Following this assignment, a provincial implementation credit was committed to the project in 2007. This implementation funding became available from a subsidy that the province had freed for integrated projects by the reconstruction committees (Peter Janssen (Provincie Noord-Brabant), personal communication, 2016). Comprehensive preparation work before a project receives final funding is something that is seen more frequently these days according to Leo Santbergen (Specialist in projects at Waterschap Brabantse Delta). Integrated projects involving several parties require more effort during the preparation phase but in the end they can provide the parties with additional value. This means that risks need to be taken by the involved parties as exemplified by the fourth storage basin project.

Political decision caused appointment of EHS

In 2007 large areas of land were purchased from land owners. However, there were several areas of land that weren't purchased because the owners didn't want to sell. Unfortunately, most of this land had high potential natural value (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). As a consequence, a solution to the issue was found in the form of the

'Ecologische Hoofdstructuur' (EHS). This is an instrument by which important areas with natural value were designated and controlled by the province. This tool has also been used to connect separate natural areas; the storage basin lies between two EHS areas and it presented a great opportunity to connect these by making parts of the storage basin part of the EHS. This idea was conceived by the storage basin project group and can be seen as an example of a 'policy alternative'. This is an alternative that is introduced by a policy entrepreneur who, in this case, is represented by all actors of the project group (Kingdon, 1995). This plan was presented to the province of Brabant that reacted very positively. However, in order to make the plan possible, other EHS areas had to be removed so that no more land was incorporated as EHS. This was possible by removing the EHS status on areas that no longer had much natural value. However, despite the removal of several areas, this was still insufficient to enable the assignment of EHS status to the storage basin area (Hans Leermakers (Dienst Landelijk Gebied) & Anton van Haperen (Staatsbosbeheer), personal communication, 2016). This led to an adjustment of the policy in the province whereby the province agreed to the assignment of the area as EHS. With this assignment, new subsidies became available to purchase more land. This assignment is a good example of the political stream of the theory of Kingdon in which the management of a large governmental organization cooperates with the implementation of a measure. In this case politics supported the plan and therefore changed the policy which enabled the use of EHS.

The fourth storage basin as example project of 'Klimaatbuffers'

The '*Klimaatbuffers'* organization supported projects that involved the sustainability of the climate. Nationally selected, the fourth storage basin became one of the five projects that were supported by subsidy mainly because of the combination of a water storage basin with the development of nature. The amount of subsidy that became available was almost 1 million euros as can be seen in appendix 3. Because the total cost for the project were calculated on 12,7 million euros, this subsidy had an important part in the budget. Because of nationwide attention to this project, it may have become an example or precedent for other projects (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). In this case we can, according to Kingdon, speak about a spillover effect: the fourth storage basin project enables other projects to start because the storage basin is seen as an example.

Construction of the dike

An agreement with the active farmer was made after the farm had been bought whereby the farmer could continue to use his farm for three years after the purchase. Three years later, in 2008, the farm was demolished after which Waterschap Brabantse Delta wanted to start work on the fourth storage basin. However, Staatsbosbeheer and the municipality of Breda were not ready at that time. Hans

Blaas from Waterschap Brabantse Delta believed that this was probably due to the lack of funds at that time. However, the management of the water authorities were pushing Hans Blaas to start with the project and so they did. According to Anton van Haperen from Staatsbosbeheer it is possible that between 2003 and 2005 there was less involvement by Staatsbosbheer in the project (Anton van Haperen (Staatsbosbeheer), personal communication, 2016). This may have been due to a change of the person responsible for the project on behalf of Staatsbosbeheer. Despite the fact that the other actors were not ready, Waterschap Brabantse Delta started in 2009 with the construction of the dyke, and tension arose between them (Hans Blaas (Waterschap Brabantse Delta), personal communication, 2016). By the time the dyke was completed in 2010 the other parties had their funds ready and could start the second phase of the project. However, the delay caused the parties to deviate from the original plan which was to establish nature during the first phase of the project.

4.4 Project phase 2

During the period 2010 till 2012, new political decisions forced the project that was to enter its second phase, to a stop. Following the construction of the dyke during the first phase, it was time to implement the rehabilitation of nature in the area during the second phase. However, in 2011 a nationwide policy came into effect. This was called the '*Aankoopstop Bleker*' which was a new policy introduced by State Secretary Bleker (Hans Leermakers (Dienst Landelijk Gebied), personal communication, 2016). This new policy resulted in the national government halting the provision of provincial funds to help purchase EHS land. Consequently, the land became too expensive for the province alone to finance and therefore it did not proceed. However, the province didn't cancel construction on EHS land in the storage basin, but in order to realize the EHS the project group would have to finance a part of the cost. Because of the additional cost some of the land was not purchased at that time and has still not been purchased to this day. This is a good example of how a nationwide political policy can greatly influence a project. This also shows how important the political stream of the theory of Kingdon can be in the development of a nature-based flood risk measure.

4.5 Project phase 3 & 4

The process during the last two phases of the project involved far fewer decisions. The period of the first phase was from 2012 till 2014. Phase 4 started in 2014 and is still in progress, however no decisions were made in the this phase which influenced the development of the storage basin.

Equality decision caused new problems

In 2013 a new nationwide policy was introduced that had a great impact on the finalization of the project. As the project approached completion, someone had to maintain and manage the area. Staatsbosbeheer had proposed to do so and undertake this task. In order to do this, the land belonging to all parties would be donated to Staatsbosbeheer. However, before this transaction

could be realized a new policy process was introduced. This policy prevented the parties from donating land to Staatsbosbeheer for free (Jan Janse (Staatsbosbeheer), personal communication, 2016). As a consequence, Staatsbosbeheer had to pay 15% of the agricultural land value to the province in return for the land (Provincie Noord-Brabant, 2013). This was an unexpected additional cost and no money was available to enable the transaction to proceed. Due to this political policy change, which can be linked to the political stream of Kingdon, there is still as of today no solution to the problem and the storage basin is not maintained by any actor.

Chapter 5 Discussion

In this chapter, several conclusions arising from the research will be made and the main research question will be answered. In the discussion Kingdon's Theory is linked with the results of the interviews, with a critical reflection on the research itself. The future of nature-based flood risk measures is discussed in the final paragraph.

5.1 Conclusion

Obtaining an insight into the factors that influenced the decision-making processes, development and implementation of the nature-based fourth storage basin has been the overall goal of this research. The research question that was linked with this research goal was: *Which factors influenced the decision-making process that led to the development and implementation of a nature-based solution for the regional flood risk management at Breda?*

First, the problem that led to the construction of the fourth storage basin and how this problem became part of the political agenda of the involved parties was researched. Second, the alternatives to a storage basin and why eventually Breda was chosen for a storage basin. Third, whether decisions made in the process of the fourth storage basin were influenced by the political climate of involved governments was researched. Finally, the events that caused the window of opportunity to open and therefore introduce the fourth storage basin as a solution to the problem. All findings are based on documentary evidence and eight interviews that took place during the course of this research.

Flood risk problems in Breda most important factor for developing storage basin

By answering the sub-questions, the principle question of this research can be answered. For the first sub-question an overview was presented describing the overall problem that existed before the realisation of the fourth storage basin. The problem itself was examined as well as the way this problem came to be on the political agenda of involved actors. It transpired that, primarily, the canalisation of the Mark had led to the essential construction of three storage basins in case the river flooded. Due to climate change high water levels were becoming more common. Following the great flood in 1953 much more funding was invested in primary defence structures but much less in secondary defences. In 1993 and 1995 this underfunding led to high water levels in Breda that almost flooded parts of the city. This eye-opener caused the revival of previously conceived ideas from Victor Witter, Anton van Haperen and Jan Elsink for the implementation of a fourth storage basin to be included into the political agenda of Waterschap Brabantse Delta and the municipality of Breda. The flood risk which led to the high water levels was recognized by all the involved actors of fourth storage basin. In the problem stream of Kingdon, this can be seen as the initiative problem, which led to the development of the storage basin.

On base of several factors was chosen that a storage basin was the best alternative

By answering the second sub questions the choice of a storage basin and available alternative measures were looked into. The storage basin was chosen for several reasons. Firstly, Waterschap Brabantse Delta wanted a solution to the problem, but at the same time the general mind-set was changing to a more ecologically-friendly approach. For Waterschap Brabantse Delta the choice of a nature-based solution and in this case a storage basin was quickly made. The other actors were also positive because of the potential high values for nature and recreation which was not possible with other alternative measures. The alternatives, such as increasing the height of dykes or dredging the Mark, didn't fit with the ecological mind-set of Waterschap Brabantse Delta. The location downstream from Breda was also chosen because the flowrate of the Mark rapidly increases after it passes Breda. Otherwise water would accumulate around Breda thus increasing the potential for flooding. The theory of Kingdon is in line with this development in the process. In the policy alternative stream, the alternatives are reviewed and a best alternative will be chosen. This is consistent with the decision of the implementation of a storage basin and the specify chosen location. With the construction of a storage basin just past Breda, this problem is solved.

The factors in the political climate which influenced the development of the storage basin

Whether or not the political climate in local and national government influenced the decision making process is researched with the third sub-question. It transpired that the political climate did influence many of the decisions that were made during the development of the fourth storage basin. The most important political decision was the introduction of the reconstruction committee, the Baronie. With the introduction of this committee, integrated projects such as the fourth storage basin were supported by the province of Noord-Brabant. The objectives of the committee were, amongst other things, focussed on developing water, recreation and nature resources. Therefore, the implementation of the fourth storage basin fitted well within these objectives. As a consequence, subsidies became available to enable the construction of the fourth storage basin. This shows that the political stream of the theory of Kingdon has been one of the most influencing factors in the development of the fourth storage basin.

The opening of the policy window

The events that eventually caused the policy window of the theory of Kingdon to open were the high water levels in 1993 and 1995 which emphasised the overall problem that existed. The concept of the fourth storage basin, which came as an alternative solution to the problem, was important for the policy alternative stream. However, the main event from the political stream was the introduction of the reconstruction committee that awarded high subsidies for the development of the project. These three elements took place at the same time, and opened the policy window.

5.2 Discussion

The results arising from this research have provided insight into the events that influenced the decision making process of the fourth storage basin. As described in the conclusion, there were several events that have done so. Kingdon's theory was used to help design the interview guide, (see appendix), which was used in the several interviews that were held as part of this research. By using this theory we now know that the elements which influenced the decision making process of the fourth storage basin are not stand-alone but are all inter-connected. Almost all the events that occurred during the decision making process can be related to one of the three streams of the Kingdon Theory.

Problem stream

With the problem stream, Kingdon explains that a problem can arise if there is a difference between the current and optimal state. In this research that difference can be clearly seen within several phases of the research. These problems are highlighted in orange on the timeline. The high water levels of the River Mark in 1993 and 1995 almost caused Breda to be flooded. This is far from an optimal situation and the high water levels that threatened Breda and nearby cities can be regarded as the initialling problem facing the overall project. Kingdon explains that problems are often revealed only after a crisis or a disaster. This was exactly the case for this problem (Kingdon, 1995). After the high water levels, the problem got highlighted and the need for a solution became urgent. Beside this initialling problem, during the implementation of the project there were several elements that caused problems within the process itself. The following two problems can be seen as the 'sub-problems', problems that influenced the implementation of the storage basin itself. Firstly, there was an active farmer in the area who did not want to sell his land. Moreover, this farmer owned a relatively large area of land and this itself was a problem because the area was larger than the optimal size that farmers would be happy to sell to the project group. The second sub problem was that after Bleker's change of policy, which resulted in the national government halting the provision of provincial funds to help purchase EHS land, the province had reservations about the EHS's implementation and associated subsidy. The actors now had to assist with the purchase of the land for the *'Ecologische Hoofdstructuur'* (EHS). This was a far from the optimal state for the project group because more money would be needed in order to realise the EHS.

Policy alternatives stream

Another aspect of Kingdon's theory is the policy alternative stream. This stream focuses on particular parties who generate ideas and alternatives in order to solve a problem. The actors who are confident about a certain plan and who invest time, energy and money in it can be seen as the policy entrepreneurs. The main policy alternative of this research was introduced by Victor Witter, Anton

van Happeren and Jan Elsink. Even though the problem wasn't highlighted before the high water levels of 1993 and 1995, they had already come up with alternative solutions for high water levels that might occur in the future. It is important, as Kingdon describes, to ensure that powerful arguments are developed in order to secure acceptance of a particular alternative solution. With the introduction of the fourth storage basin, the policy entrepreneurs achieved considerable acceptance because of the nature-based solution that they had created to tackle high water levels. With the combination of a solution for high water levels that was also nature-based, several parties supported the project for those reasons. This alternative is marked in green in the timeline.

Political stream

During the many years during which the project was developed and constructed, many national and regional wide policies were changed, implemented or had disappeared. During the development of the fourth storage basin, these policies had a great influence on the decisions that were made with regards to the project. The most important policies relating to this project are mentioned in the following. These policies are marked in blue in the timeline.

Between the period of the great flood in 1953 and the present there have been many changes. For example, the mind-set of the Waterschap Brabantse Delta, that changed around 1990 to a more eco-friendly way of working. Kingdon's Theory defines three components within the political stream (Kingdon 1995). One of the three components indicates that politics and civil servants can change the policy priorities and also put new ideas on the agenda. This can be compared to the new mind-set of the water authorities in which the civil servants of the Waterschap Brabantse Delta changed their mind-set. Because of this change in mind-set, ideas for a nature-based storage basin were approved and later implemented. Another component of the theory that influenced this decision was the national political climate that became more and more sustainable.

The second important policy change is that of the 'Reconstruction law'. This political change, which was introduced in order to conquer swine fever in certain parts of the Netherlands, provided support for integrated projects. Several committees were installed in order to focus on the implementation of task relating to water, recreation and nature in specific areas in Noord-Brabant. The Baronie committee was responsible for the area of Breda. Thanks to the use of the national political climate and politics that introduced new ideas, the reconstruction law was developed and implemented. With its introduction, subsidies came available which were used for the development of the storage basin.

In 2007 the project group had purchased several plots of land in the fourth storage basin area. However, some of the land could not be purchased because of the landowners did not want to sell.

As described in chapter three, the '*Ecologische Hoofdstructuur*' (EHS) came into action in order to purchase these areas of land. However, in order to secure EHS status, other EHS areas in Noord-Brabant had to be compromised. Because there was insufficient land to compromise the EHS in the fourth storage basin, it couldn't be implemented and therefore no subsidy would be available to buy the required land. However, an adjustment to the policy rules of the province enabled the area of the fourth storage basin to be designated as EHS land. As a result of this adjustment, the high-value land could be acquired. This could only have happened if the province was positive about the implementation of the fourth storage basin. Kingdon described the process in which politics and civil servants are able to change the policy as a component of political developments. This is exactly what happened with the EHS.

The last important political development is the 'Aankoopstop of Bleker'. With the arrival of this national law, the national government stopped funding provinces that wished to purchase EHS land. As a consequence, provinces no longer had the money to buy all the EHS land that they wished. In order to continue with the subsidy of these areas of EHS land, all parties involved in the project had to finance part of the costs that would otherwise be made by the province. This political development is related to the political stream of Kingdon. As a result of a change of policy priorities in the national government, the development of the storage basin was disadvantaged.

Policy window

Kingdon's theory uses the term 'policy window' for the moment during which supporters of a specific policy proposal are able to present their solution to a specific problem. Kingdon's policy window is connected with the events that occurred during earlier phases of this project. This window only appears when the three streams of the model come together at a specific moment. In his theory, Kingdon speaks about two different windows: a 'problem window' and a 'political window'. However, these windows are strongly related to each other. In case of this research, a problem occurred with the high water levels in the Mark that almost caused floods in Breda. So the problem stream was open. Due to the need for a solution to this problem, several policy alternatives would be generated. In this case, the need for an alternative to the creation of a fourth storage basin. Because of the high waters in 1993 and 1995 there was an urgent need for an alternative. When the need for a solution is high, alternatives have a higher chance of implementation within the political stream. As can be seen, the perspective in Kingdon's Theory presents an almost perfect fit in the case of the fourth storage basin.

Concluding the theory of Kingdon

Some political decisions that were made were not directly related to the development of the storage basin, but they did however have enormous consequences. Similarly, the introduction of the

reconstruction committee greatly benefitted the development of the project thanks to the high subsidies that were awarded by this organisation. Partly because of these subsidies the main project was able to start after the problem was identified and alternative solutions recorded. During the project other political decisions helped to open a policy window within the project and subsequently helped the project thereafter. This political decision was the 'Hogesnelheidslijn' (HSL) compensation. Thanks to the funds that were obtained to compensate for any damage to the natural environment in the fourth storage basin, the land belonging to the active farmer in the area could be purchased. This was a big problem for the overall development of the project, but thanks to these political decisions a solution was created by making use of the policy window that had opened.

As already mentioned in the results, a 'spill over' effect was created thanks to the use of the Klimaatbuffers organisation. This organisation used the fourth storage basin as one of 5 examples of how a water storage basin can, in a sustainable way, be combined with the creation of nature. Thanks to reference to these examples, including most probably the fourth storage basin, many other new projects have been realised. This can be seen as a spill over effect that influenced other projects.

The theory of kingdom describes three streams in which political issues were mentioned and how they are placed on political agenda. This theory focusses on the lead up to new policy changes which led to measures. However, as shown in this research, after the initiating and during the development of a policy measures itself, political issues can still influence this process. This refers to the sub-problems of this research.

5.3 Critical reflection

To obtain information in a qualitative research study it is important to conduct, for example, interviews. In this research a qualitative approach was selected in order to obtain information from all the different actors involved in the storage basin. Although this is something that I have done many times in previous studies, a problem arose during two of the interviews. The interviews were audio recorded to help process the information obtained. The first four interviews were recorded without issue. However, a problem occurred during the fifth interview (with Anton van Happeren) that resulted in only 5 minutes of the interview being properly recorded. A repeat interview was not an option. However, I had made written notes during the interview that were checked afterwards by Anton van Happeren himself for accuracy and veracity. Unfortunately, a similar recording fault also developed during the interview with Victor Witter but I noticed the fault in time so no information was lost. In future, a better recording device will be used to ensure the reliable capture of data.

Information of the interviewees

During this research I interviewed 8 different people from several organizations. This was done in order to obtain information that would be as accurate as possible and also because the fourth basin development process has so far taken more than 20 years and is even now not fully completed. During the interviews I noticed that not everyone, especially those who had already retired, knew what happened exactly in what time period. I therefore did further research on the internet in order to corroborate my facts. However, if more time was available, I would like to have spoken to more actors in order to get an even better overview of the decision making process. Similarly, I would like to have spoken to an expert on Kingdon's Theory in order to get a better understanding of it and how it works. For this research I made use of publications available in the Radboud University library and on the internet. By doing this, a good understanding of the theory was achieved. The interview guide that was made before the research was good. Small improvements on the questions are made after the first two interviews.

What was good and bad at the Theory of Kingdom

The multiple streams framework of Kingdon has been a good theory in order to structure this research. I noticed that I could make a clear and chronological overview of the factors that have influenced the decision making process of the fourth storage basin due to the three separate stream in the theory of Kingdon. However the theory is not all the time used as intended of Kingdon. This is because this theory mainly focusses on the processes before the initiating of a flood risk measure and not during the development of it. Nonetheless is multiple streams framework of the theory also used in the description of the factors that were influenced in the decision making process during the implementation of the storage basin.

Dominance of the national water system

The research suggest of the fact that the regional water system is not very dominant. During the decision making process of the fourth storage basin, all stakeholders had and used the opportunity to implement their own interests into the project. At the national wide water system this works different because of the dominant role of Rijkswaterstaat (van den Brink, 2009). So the research suggests that in regional water system, better collaborations can be made then in the national water system due to the less dominant role of the water authorities.

5.4 The future of nature-based flood risk measures

In this research several results have been found but no comparisons have been made with other nature-based flood risk measures. Because of that, no references can be made and therefore it is difficult to judge if all the decisions were well taken. It is therefore suggested that additional research on nature-based flood risk measures is carried out in order to determine if the decisions so far made

were the right ones. When comparisons are made with other decision making processes relating to nature-based solutions, some of the decisions could then be compared. This future research could focus on the changes that may have been seen between developments from 1990 to the present day. During this period there will be many changes, such as new policies, further changes to the climate and changing mindsets of organizations, as mentioned by Leo Santbergen (Waterschap Brabantse Delta). It would be also interesting to compare decision making processes between the Netherlands and other countries. Then, knowledge could be shared and used to greatly benefit future nature based flood risk solutions.

This research has focused on the decision making process of a storage basin. It would be enlightening to see if other, alternative nature based flood risk measures have faced the same steps and problems as those encountered with the development of this solution. This is pertinent because during the evolution of the fourth storage basin, political influences such as the development of the HSL and the 'Aankoopstop' of Bleker had an enormous impact. For future research it is important that stakeholders are be able to cope with sudden changes in the development and implementation of regional flood risk measures. During this research it has been found that political influences can greatly influence future development of flood risk measures. It is therefore important to be able to handle these sudden changes. Beside that it is also important to take into account that the collaboration between stakeholders in the regional water system can cause delays in the development of flood risk measures. This is the result of the fact that there are more collaborations in the regional water system then in the national water system, because of the less dominant role of water authorities.

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Appendix

Appendix 1: Interview guide

Opening

- Dank voor interview
- Gesprek opnemen, vertrouwelijk gebruikt
- Opleiding Planologie (Pre-master)
- Bachelor thesis, onderzoek op het gebied van water. → Bergboezems Breda.
- Analyse van het besluitproces, met als doel te bepalen welke factoren het proces het meest hebben beïnvloed.
- Ik zou graag willen weten hoe het de Bergboezem tot stand gekomen is. En dan voornamelijk gericht op het beleidsontwikkeling.

Begin:

- Open vraag: Algemeen, hoe liep het, hoe is het tot stand gekomen. Kunt u wat vertellen over de bergboezem en hoe het ontwikkelingsproces tot stand is gekomen.

Problem stream

- Was er een probleem dat aanleiding tot het realiseren van maatregelen?
    - Hoe is het probleem tot stand gekomen?
    - Wanneer kwam er aandacht voor het probleem?
    - Waarom bestaat het probleem op dit moment?
- Hoe hebben deze actoren er voor gezorgd dat het probleem op de politieke agenda kwam bij de gemeente en provincie?
    - Gezamenlijk / alleen?

Policy stream

- Waarom is er gekozen voor de realisatie van een bergboezem?
- Welke alternatieve mogelijkheden waren er?
- Hoe is omgegaan met de wensen van de verschillende actoren?
    - Is iedereen gelijk behandeld?
    - Zijn er partijen benadeeld?
- Welk beleid was er voor het omgaan met overstromingsrisico's en hoe is dit doorgevoerd?
- Hoe zat het met het financiële aspect van de alternatieven en de bergboezem?
- Welke wensen hadden jullie?
    - Hoe hebben jullie je wensen kunnen laten ontwikkelen.
- Waarom is er gekozen voor 4 bergboezems en niet voor 1 grote?

Political stream

- Wat zijn volgens u de belangrijkste actoren die betrokken waren bij de realisatie van de vierde bergboezem?
    - Hoe was de organisatie van u betrokken?
    - Welke overheden waren betrokken bij het proces?
        - Hoe nauw betrokken waren deze partijen.
- Welke actor kan gezien worden als beleidsentrepreneur? (Personen die veel tijd en energie in steken.)
    - Waarom zou het waterschap er veel energie in gestoken hebben?
- Was er een actor met meer invloed dan andere actoren?
    - Hoe stond uw organisatie hier in?

- Hoe zijn de belangengroeperingen in het proces betrokken?
- Hebben de politieke verhoudingen van de gemeente – provincie raad een rol gespeeld binnen het besluitproces van de bergboezem?
    - Waarom betrokken en waarom niet.
- Heeft nationale beleid rol gespeelt voor deze ontwikkelingen
- Nationaal niveau milieu erg terug, provinciaal niet, nog belang bij. Is het ontwikkeld omdat nationaal niks meer gedaan is?

Policy window

- Welke gebeurtenis zorgde er voor dat er een window of oppertunity gevormd werd? Dat men samen kwam. (Geldstromen, verkiezingen, subsidie). Discussie echt is begonnen. Als navraag.
- Waren er policy entrepreneurs? (Individuele Actoren met een specifieke oplossing)
- Welke rol speelde uw organisatie hier in?
- Had uw organisatie oplossingen voor problemen in het proces? (Was u een van de policy entrpreneurs)

Appendix 2: Article 19

Breda

08B013301

College van Burgemeester en Wethouders

Stadskantoor
Claudius Prinsenlaan 10
Postbus 90156, 4800 RH Breda
Telefoon (076) 529 30 00
Fax (076) 529 32 40
E-mail gemeentebreda@breda.nl

Bereikbaarheid
Vanaf Breda CS: 10 minuten lopen,
Buslijnen: 8, 11, 12, 131, 401

Waterschap Brabantse Delta
t.a.v. Dhr. Th.G. Houtsma
Postbus 5520
4801 DZ BREDA

Uw brief

Datum 12 NOV. 2008

• B R D 2 0 0 8 3 3 0 3 5 •

Onderwerp
Vrijstelling voor de aanleg van de Vierde Bergboezem ten noorden van de Haagse Beemden te Breda.

Informatie
5293896 P. Ruis

Bijlagen
-2-

Geachte heer Houtsma,

U heeft een verzoek ingediend om vrijstelling van de vigerende bestemmingsplannen "Buitengebied " en "Haagse Beemden Oost 1969/2" voor de aanleg van waterkerende kaden en functiewijziging naar waterberging, het project Vierde Bergboezen, ten noorden van de wijk de Haagse Beemden te Breda. De realisering van dit project is in strijd met dit bestemmingsplan. Op grond van artikel 19, lid 1 van de Wet op de Ruimtelijke Ordening (WRO) kan hiervoor echter vrijstelling worden verleend.

Het verzoek om vrijstelling heeft met ingang van 3 januari 2008 tot en met 13 februari 2008 gedurende 6 weken ter visie gelegen. Gedurende deze periode zijn er 7 zienswijzen ingediend en deze zijn door het college van burgemeester en wethouders behandeld. Ingevolge artikel 19, lid 1 WRO is een verklaring van geen bezwaar aangevraagd bij Gedeputeerde Staten van Noord-Brabant. Deze verklaring is op 21 oktober 2008, onder nummer 1446190 afgegeven (zie bijlage).

Thans delen wij u mede dat wij, gelet op artikel 19 en artikel 19a van de Wet op de Ruimtelijke Ordening, alsmede gelet op het delegatiebesluit van de gemeenteraad van Breda van 26 maart 2002, nr. 17926 besloten hebben om met gebruikmaking van de vernoemde door Gedeputeerde Staten van Noord-Brabant afgegeven verklaring van geen bezwaar, u vrijstelling verlenen van de bepalingen van de bestemmingsplannen "Buitengebied " en "Haagse Beemden Oost 1969/2" voor de aanleg van de Vierde Bergboezem ten noorden van de wijk de Haagse Beemden te Breda. Voor de motivering verwijzen wij naar bijgevoegd besluit.

Voorts wijzen wij u erop dat tegen deze vrijstelling ex artikel 19, lid 1 WRO beroep bij de Arrondissementsrechtbank te Breda openstaat op grond van de Algemene wet bestuursrecht.

Tot slot delen wij mede,dat u voor het voeren van bovenvermelde vrijstellingsprocedure op grond van de Legesverordening leges verschuldigd bent.

Deze leges zullen u te zijner tijd in rekening worden gebracht.

Gemeente Breda

Hoogachtend,
Burgemeester en wethouders van Breda,

burgemeester,

secretaris,

Appendix 3: Klimaatbuffers subsidy

14 JAN 2008

Waterschap Brabantse Delta
Dijkgraaf Dhr. J. Vos
Postbus 5520
4810 DZ Breda

dienst landelijk gebied
voor ontwikkeling en beheer

uw brief van	uw kenmerk	ons kenmerk	datum
-	-	Dlgz/1737	10 januari 2008
onderwerp		doorkiesnummer	bijlagen
4e Bergboezem. Toegekende subsidie.		013 - 595 0 649	-

Geachte heer/mevrouw,

Namens de projectgroep wil ik u op de hoogte stellen van een nieuwe subsidie voor het project de 4e Bergboezem.

Het Ministerie van VROM coördineert het Nationale Programma Adaptatie Ruimte en Klimaat, dat is gericht op een klimaatbestendige inrichting van Nederland. Minister Cramer heeft een bedrag van € 5 miljoen beschikbaar gesteld om voorbeeldprojecten Natuurlijke Klimaatbuffers uit te voeren. Natuurlijke klimaatbuffers zijn ontwikkeld door Staatsbosbeheer, Natuurmonumenten en collega-organisaties. Het zijn robuuste gebieden waar water de ruimte krijgt en de natuur haar gang kan gaan. Ze zorgen ervoor dat Nederland droge voeten houdt waar dat nodig is, maar ook kan beschikken over voldoende water van een goede kwaliteit.

Staatsbosbeheer heeft de 4e Bergboezem voorgedragen als voorbeeldproject. Na een intensief traject heeft het ministerie van VROM zeer recent een subsidie van ruim € 937.000,- toegekend aan het project. Een zeer mooi resultaat met speciale dank aan Staatsbosbeheer. De subsidie is bedoeld voor de inrichting en beheer van natuur, recreatievoorzieningen en communicatie.

Met deze subsidie is het mogelijk om een forse stap te maken bij de verdere inrichting van het projectgebied.

Namens de projectgroep 4e Bergboezem

J.P.M. Leermakers
procesleider

Appendix 4: Subsidy approval SGB (First four pages of the document)

06B012011

INGEKOMEN
27 DEC. 2006

Waterschap Brabantse Delta
t.a.v. de heer H. Blaas
Postbus 5520
4801 DZ BREDA

dienst landelijk gebied
voor ontwikkeling en beheer

VERZONDEN 22 DEC. 2006

uw brief van	uw kenmerk	ons kenmerk	datum
26-10-2006	*06U007632*	BO/85535/70934	
onderwerp		doorkiesnummer	bijlagen
SGB.15532; **4e bergboezem,** **subsidieverleningsbeschikking**		013-5950680 mw. J. van Doren	1. projectspecifieke gegevens 2. algemene subsidievoorwaarden 3. protocol accountantsverklaring

Geachte heer Blaas,

Uw subsidieaanvraag ingekomen bij het DLG-betaalorgaan op 30 oktober 2006 en met kenmerk *06U007632* heb ik beoordeeld.

Op grond van de Regeling Subsidiëring Gebiedsgericht Beleid en reconstructie concentratiegebieden (SGB), verleen ik namens de Staatssecretaris van Verkeer en Waterstaat, de Staatssecretaris van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer, en de Minister van Landbouw, Natuur en Voedselkwaliteit, en gelet op de voordracht van het College van Gedeputeerde Staten van de Provincie Noord Brabant,

aan: Waterschap Brabantse Delta (hierna: de eindbegunstigde)
voor: 4e Bergboezem; waterberging, natuurontwikkeling, cultuurhistorie en recreatie

Dienst Landelijk Gebied
regio Zuid
team regelingen
Prof. Cobbenhagenlaan 109
Postadres: Postbus 1283
5004 BG Tilburg
Telefoon: 013-5950595
Fax: 013-5950722

een totale subsidie tot een maximum van € 3.034.711

Het verleende subsidiebedrag is hoger dan het door u aangevraagde subsidiebedrag. Het door het Betaalorgaan berekende subsidiebedrag is weergegeven in bijlage 1, de projectspecifieke gegevens. Onder de kostenpost 'diverse projectkosten' zijn de rentekosten niet subsidiabel gesteld op basis van Regel 3, lid 1 van de verordening 1685/2000, subsidiabiliteitsvoorwaarden. De kosten voor verzekeringen zijn voorlopig wel subsidiabel gesteld, maar op basis van artikel 1, lid 5 van de algemene subsidievoorwaarden is enkel een risicoverzekering (CAR verzekering) subsidiabel. Overige verzekeringen komen niet voor SGB-subsidie in aanmerking.

De bijlagen 1 en 2 maken integraal deel uit van deze beschikking.

De berekening van de subsidie en andere projectspecifieke gegevens zijn gespecificeerd in bijlage 1.

De subsidie wordt verleend onder de algemene voorwaarden genoemd in bijlage 2.

mod. 003 DLG

Deze beschikking geldt tevens als beschikking tot voorschotverlening conform artikel 4:54 van de Algemene wet bestuursrecht. Het genoemde in artikel 4 van de algemene voorwaarden (bijlage 2) geldt daarbij als nadere uitwerking van de voorschotverlening.

Tegen deze beschikking staat op grond van het bepaalde in de Algemene wet bestuursrecht de mogelijkheid van bezwaar open. Een belanghebbende kan tegen dit besluit, binnen 6 weken na verzending, een met redenen omkleed bezwaarschrift indienen bij:

De Minister van Landbouw, Natuur en Voedselkwaliteit
Dienst Regelingen
Afdeling Recht & Rechtsbescherming
Postbus 20401
2500 EK 's-Gravenhage

Onder vermelding op de envelop van het referentienummer en 'Bezwaarschrift'.

Indien u van deze mogelijkheid gebruik maakt, verzoek ik u bij het bezwaarschrift een afschrift van deze brief te voegen.

DE STAATSSECRETARIS VAN VERKEER EN WATERSTAAT,
DE STAATSSECRETARIS VAN VOLKSHUISVESTING, RUIMTELIJKE ORDENING EN MILIEUBEHEER en
DE MINISTER VAN LANDBOUW, NATUUR EN VOEDSELKWALITEIT,

voor deze:
DE REGIOMANAGER ZUID DIENST LANDELIJK GEBIED,

ir. A.P. Boema

mod. 060

Bijlage 1 Projectspecifieke gegevens

Deze bijlage maakt integraal deel uit van de subsidieverleningsbeschikking

Projectnaam:	4e Bergboezem
SGB-nr.	15532
Voorgenomen startdatum:	datum ontvangst subsidieverleningsbeschikking
Geplande einddatum:	twee jaar na verzenddatum subsidieverleningsbeschikking

Projectomschrijving

Het project heeft betrekking op het realiseren van een stuurbare waterberging middels een regelbaar inlaatsysteem. Binnen het plan wordt gezocht naar een evenwicht tussen gangbaar agrarisch gebruik, de ontwikkeling van de ecologie, landschappelijke, cultuurhistorische en recreatieve eigenschappen en kwaliteiten. Dit alles moet leiden tot het herstel van de landschappelijke, ecologische eb cultuurhistorische kenmerken en kwaliteiten. Wat de natuur betreft gaat het om het herstel van kwelgebonden natuur en een verbetering van het leefgebied voor weidevogels, doortrekkers en wintergasten.

Outputindicatoren

Voor het meten van de output van het project zal gebruik worden gemaakt van de volgende gekwantificeerde indicatoren conform de specificaties zoals aangegeven in de projectomschrijving bij de subsidieaanvraag:

	Omschrijving	Eenheid	Aantal
1.	Aantal hectare natuur met verbeterde waterbeheersing cq. peilverhoging.	Ha	72
2.	Aantal maatregelen ten behoeve van toegankelijkheid en gebruik landelijk gebied, door middel van; - 2 visplaatsen, - 1 parkeerterrein, - 5 zitbanken, - 3 infopanelen, - 1 wandelroute, - 6 infopanelen voor wandelroutes.	St	18

Specifieke verklaringen

Uiterlijk bij de voortgangsrapportage over het 1e kwartaal van 2007 dienen kopieën van de akkoordverklaringen van de Gemeente Breda, Staatsbosbeheer, de provincie en de HSL/A16 bij de voortgangsrapportage te worden bijgevoegd.

Uiterlijk bij de aanvraag tot subsidievaststelling moeten de volgende op grond van betreffende regeling of programma vereiste specifieke verklaringen worden overlegd:

- vraagspecificatie,
- aanbestedingsstukken D&C contact,
- kopie D&C contract,
- inrichtingsplan,
- proces-verbaal van oplevering,
- (andere) opgevraagde offertes,
- gunningsbrief (brieven)
- eindrapportage,
- verzoek tot eindafrekening,
- kostenoverzicht en
- accountantsverklaring.

Versie d.d. 31 mei 2006

Specificatie subsidiebedrag

Projectbegroting

Kosten	Bedrag	Niet-subsidiabel	Nationaal subsidiabel	Subsidie-%	Subsidiebedrag
Interne voorbereidingskosten	140.924,00		140.924,00	50%	70.462,00
Externe voorbereidingskosten	734.220,00		734.220,00	50%	367.110,00
Grondverwerving	5.600.000,00	5.600.000,00			
Ontwerp, aanleg en inrichting					
Waterberging	2.563.998,00		2.563.998,00	50%	1.281.999,00
Landschap	255.637,00		255.637,00	50%	127.819,00
Natuur en sanering Molenpolder	1.073.826,00	699.006,00	374.820,00	50%	187.410,00
Natuur Haagse Beemden bos	38.250,00		38.250,00	50%	19.125,00
Natuur Werft en Hooijdonk	432.166,00		432.166,00	50%	216.083,00
Recreatie	63.375,00		63.375,00	50%	31.687,00
Diverse projectkosten	235.294,00	105.042,02	130.252,00	50%	65.126,00
Onvoorzien	438.754,00	68.613,00	370.141,00	50%	185.071,00
BTW bedrag	1.127.977,00	162.339,00	965.638,00	50%	482.819,00
Totaal	12.704.421,00	6.635.000,00	6.069.421,00		3.034.711,00

Kosten gemaakt vóór de ontvangstdatum van de subsidieverleningsbeschikking komen niet voor subsidie in aanmerking met uitzondering van kosten ten aanzien van het ontwikkelen van plannen, onderzoek en voorlichting. Laatstgenoemde activiteiten mogen echter geen betrekking hebben op reconstructieplannen, gebiedsplannen en/of bijbehorende uitvoeringsprogramma's.

Versie d.d. 9 juli 2002