

Biodiversity in the planning process of 'The City Island project'

A discourse analysis on the influence of biodiversity discourses on the municipality of Nijmegen in the planning process for the City Island project



(1. *Veur-Lent En Hoge Bongerd*, 2016)

Bachelor Thesis by C. Geurtzen
Geography, Spatial Planning and Environment (GPE)
Nijmegen School of Management
Radboud University Nijmegen
June 2022
Word count main text: 20.162
S1029217
Supervisor: Cebuan Bliss

Abstract

Since the construction of the mirror canal between Nijmegen and Lent, there has been a lot of activity in the area on and around the City Island that has come into being. There are many discussions about the future of the area. This has resulted in various petitions, polls and surveys in which residents and other interested parties want their voices to be heard. These have been signed by thousands of people, which is a good indication of how important the area is to people.

For the future of the area, four possible variants have been drawn up for the area on the Waaleiland near Veur-Lent, commissioned by the municipality of Nijmegen. These variants consist of development possibilities with lots of space for green and no construction, to lots of construction and less space for green. The future of the area is unclear for the time being. What is certain is that Nijmegen's city council will decide on the final variant.

An important topic within the entire process of this project is biodiversity. As far as urban sprawl is concerned, a few years ago the Netherlands was still the number one country in Europe, so there is probably little room for the preservation and growth of biodiversity. However, biodiversity is so important to human life that we would not survive if important core elements of it were to die out. The importance of biodiversity must therefore be taken into account in everything, including the planning processes of future building plans.

The aim of this study is therefore to investigate the role of biodiversity in the city island project. To this end, the following research question has been formulated: "How have biodiversity discourses influenced the municipality of Nijmegen in the planning process of the City Island project?"

In this, the City Island project consists of the area around Veur-Lent on the Waaleiland and the Hoge Bongerd, which is situated north of the spiegelwaal against Lent. The biodiversity discourses are certain discourses in the field of biodiversity, of which the influence on the municipality of Nijmegen is studied.

To investigate this, a qualitative research was used with a literature study and three interviews with various relevant respondents, each with their own expertise. A domain-specific literature study was also carried out beforehand, which provided a good basis for the research. From this, three biodiversity discourses were identified: 'nature as a priority', 'sharing space with nature' and 'no room for nature'. By means of a discourse analysis, the biodiversity discourses are determined from the documents and reports found in the literature study and the interviews.

First of all, the results show that the municipality of Nijmegen has been influenced by the biodiversity discourse 'nature as a priority' and 'sharing space with nature' through a number of documents and reports. This influence has been exerted through an ambition document, a vision on nature, a toolbox nature-inclusive development and building, a nature pearl report and a biodiversity plan. Because of the studies that have formed the basis for these documents, they contain a lot of well-founded knowledge about biodiversity and the City Island. Because of this knowledge, the biodiversity discourses 'nature as a priority' and 'sharing space with nature' have a lot of power to influence the municipality of Nijmegen in the planning process of the City Island project.

Secondly, the results show that the biodiversity discourses 'nature as a priority' and 'no room for nature' have exerted influence on the municipality of Nijmegen through the aforementioned petitions. These have caused delays in the planning process and the creation of a city poll. The debates also exerted influence, but unfortunately the results did not reveal which biodiversity

doctrines were involved.

Thirdly, from the results is shown that the discourses "nature as a priority" and "sharing space with nature" (2.4) are the most connected, according to the findings based on several facets of the Nijmegen municipality's policy. These discourses on biodiversity have an impact on the municipality of Nijmegen's planning for the City Island project through research and recommendations, laws, obligations, and the green character of the municipality itself.

The last findings demonstrate how the City Island's flora and wildlife served as the inspiration for the biodiversity discourses "nature as a priority" and "sharing space with nature," which were interlaced in all the other findings on this theme. Some were interwoven more frequently than others.

Overall, the biodiversity discourses "nature as a priority" and "sharing space with nature" stood out the most in the findings analyses and had the greatest impact on the municipality of Nijmegen throughout the planning of the City Island project.

The extent to which the different biodiversity discourses have influenced the municipality of Nijmegen in the planning process for the City Island project has not been indicated in this thesis. For future researches that want to examine that extent or a certain ratio it is recommended to choose another type of research question or to broaden or change the research methods.

Table of contents

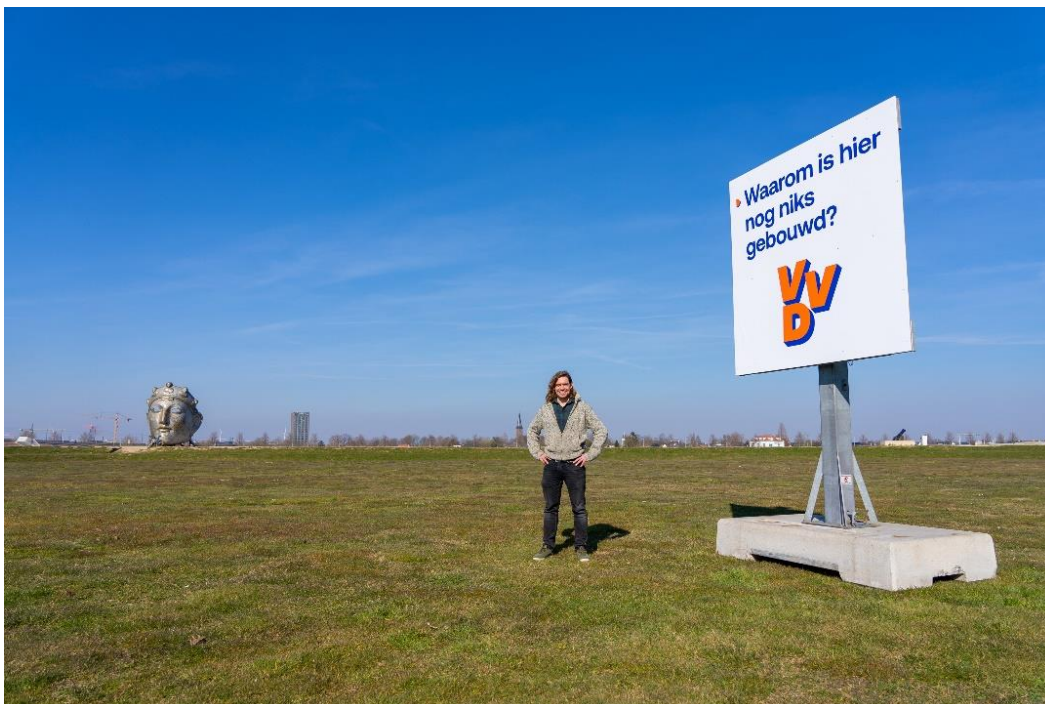
1 Introduction.....	5
1.1 Background.....	5
1.2 Problem Statement, Research Objective and Research Question	7
1.3 Scientific and Social Relevance of the Research	8
2 Theoretical & Conceptual Framework	9
2.1 Biodiversity	9
2.2 Discourses and power	9
2.3 Discourse Analysis	10
2.4 Biodiversity Discourses.....	10
3 Methodology	13
3.1 Research Methods, Data Collection and Data Analysis.....	13
3.1.1 Interviews with key players.....	13
3.1.2 Literature study	14
4. Results	15
4.1 The influence of biodiversity in documents	15
4.2 Discussions on biodiversity	21
4.3 Policies on biodiversity	24
4.4 Flora and Fauna and their role in creating biodiversity discourses.....	29
5. Conclusion	32
6. Discussion	36
6.1 Discussion on results	36
6.2 Validity.....	38
6.3 Reliability	38
6.4 Limitations	39
6.5 Recommendation	40
6.6 Reflection	40
7. Bibliography.....	42
8. Appendices	45
8.1 Codebook	45
8.2 Interview guide city councilor	47
8.3 Interview guide architect	48
8.4 Interview guide consultant in green, water & climate adaptation	50

1 Introduction

1.1 Background

Since the start of the construction in Nijmegen, the Netherlands, of 'De Spiegelwaal' and the accompanying 'Waaleiland Veur-Lent' in 2012 (NOS, 2015), there has been constant discussion about the area. Different stakeholders have different opinions about what the destination of the area should be. Sustainability, living and recreation are some of the key concepts that play a role in the discussion. Moreover, over the years, movements of resistance to a possible plan have arisen from various camps. These resistances and the accompanying visible interests of the area for a great many people have been made clear in several ways and on several occasions. When, in 2020, the municipality of Nijmegen wanted to implement its plans for high-rise buildings, which had been elaborated for years, an online survey made it clear that more than 2,000 respondents (total respondents not mentioned) did not want any housing on the island at all (Nijtmans, 2021). In addition, a petition set up in January 2021 against housing on the *Waaleiland* was signed more than 1,000 times within one day (Nijtmans, 2021).

The proponents of house construction in the area have also been active: in a readers' poll of *De Gelderlander* in December 2020 about house construction on Veur-Lent, the proponents emerged as the winners with a small majority of the total 1708 respondents (Nijtmans, 2021). On top of that, Dutch political party VVD came with a counteract by placing billboards in the area that say: "Why is there still no construction here?". This controversial action of course gave them both negative and positives responses (Suijkerbuijk, 2022).



(2. VVD protesteert voor snellere woningbouw [VVD protests for faster housing construction], 2022)

The chance that in the future some form of construction will actually take place on and around the island is certainly present. Recently, the urban design office Palmbout Urban Landscapes presented the project called the 'City Island project', which consists of 'Veur-Lent' and 'De Hoge Bongerd', the

focus of this study. The possibilities worked out by the agency are listed below (*Stadseiland: Veur-Lent en Hoge Bongerd [City Island: area's Veur-Lent and Hoge Bongerd]*, 2022). These plans are not ready-made either, but only provide an insight into what the possible future of *the City Island* could be.

The four design variants of Veur-Lent are as follows:

- Waalpark: the area is laid out as a park with some facilities
- Dijkbuurt: modest residential program of 30 dwellings with a few facilities, park-like infill with catering establishments, sports, culture and facilities
- Brugkwartier: 100 dwellings and some facilities, buildings concentrated around the Waal bridge. With town houses and flats, this will link up with the current buildings on the island
- Spiegelstad: 200-250 dwellings and facilities. Veur-Lent becomes an urban stepping-stone connecting the Waalsprong and the existing city

For Hoge Bongerd, a green, urban residential environment has been elaborated with almost 250 dwellings. The starting point is the preservation and strengthening of the green village periphery (*Stadseiland: Veur-Lent en Hoge Bongerd [City Island: area's Veur-Lent and Hoge Bongerd]*, 2022).

So, the final destination of the area remains unclear to this day, although in 2020 the municipality of Nijmegen had almost other definite plans for high-rise buildings in the area (Nijtmans, 2021). The planning process is difficult and the municipality is receiving opposition through various channels. There is also a striking diversity in the arguments for and against the possible future construction in the area. Tim Hogenbosch, Nijmegen citizen of the year 2020 and former forester of the Forestry Commission, for example, states that the green strip on the Waaleiland is a unique nature reserve (Nijtmans, 2021). Moreover, he says that you do not want even more car traffic on that narrow bridge (Nijtmans, 2021). Martin-Paul Neys, architect and chairman of the Architecture Centre Nijmegen (ACN), has a different view: "The island should keep an open character, but high-quality architecture on a limited scale can be an enrichment" (Nijtmans, 2021). Furthermore, the participation survey for the City Island revealed a number of times that building on the island could cause horizon pollution.

In short, it is clear by now that the discussion has many different perspectives. There are discussions about nature, traffic and construction as an enrichment or a pollution of the horizon. What is not entirely clear, however, is what the role of all these voices is in influencing the planning process. To what extent do these opposing voices weigh with regard to the municipality of Nijmegen's view of the future of the area? Perhaps it is much more influenced by established rules or visions? What discourses are these all based on?

The planning process of this project can contain different plans, documents, reports, resistance movements, presentations, etc. surrounding the process of the 'City Island' project. Moreover, it is likely that some biodiversity discourses will be found from the analysis that have an influence. Looking at the four design variants, things as nature, buildings and facilities are taken into consideration. So, there is a good chance that there will be discourses that are either more pro-biodiversity, pro-construction or somewhere in between. This, because the designs vary from a lot of green to more dwellings. In short, there are quite a few different discourses relating to the eventual

future plans of the area. In this research, the theme 'biodiversity' in these discourses around the planning process of the City Island project will be examined.

1.2 Problem Statement, Research Objective and Research Question

In terms of urban growth in the period 2000-2018, the Netherlands is the list leader of all European countries. This has emerged from a study of sustainable urban development in Europe carried out by the ESPON SUPER project (Sustainable Urbanization and land-use Practices in European Regions) (ESPON, 2020). Urban areas are constantly expanding, with the result that green areas around and near cities are becoming potential construction areas, just like the area of the City Island project. The fact that these areas and the biodiversity living in the regions may be at risk is an inevitable consequence.

The urban sprawl has at one point even gone so far that the European Environment Agency named the Netherlands as the worst offender in terms of urban sprawl in a report published in 2016 (Schie & Evers, 2019). That urban growth will in some way interact with nature is an inevitable consequence. The question is, however, how to deal with it. As Europe's list leader in the field of urban sprawl, there is a lot of interaction between people and nature in the Netherlands, and this is also the case in the planning process of the City Island project. Biodiversity is one of the themes that can be discussed. The importance of biodiversity for humans is enormous. In fact, without biodiversity, mankind would not even be able to exist (Naturalis, 2022). This shows that biodiversity will have to be taken into account in building plans to a certain extent. Because of the nomination for worst offender in the field of urban sprawl by the European Environment Agency (Schie & Evers, 2019), the Netherlands is not very well placed on the map, but it is interesting to investigate how the municipality of Nijmegen deals with planning processes of new urban construction plans and what influence biodiversity has on those. To what extent does the importance of biodiversity play a role for such a local region in the Netherlands?

For this research, the focus is on the City Island project in Nijmegen, the Netherlands. In specific the theme of biodiversity and its role within the planning process of the City Island project will be examined. Biodiversity and in specific the influence of it on the eventual decision-making about the City Island project is something you can't label with certain numbers or grades. The main purpose of this research is therefore to investigate what discourses on the theme of biodiversity have influenced the municipality of Nijmegen in this process so far and how. The focus is therefore only on biodiversity. The research will proceed on the basis of the following main question:

How have biodiversity discourses influenced the municipality of Nijmegen in the planning process for 'The City Island project'?

The municipality of Nijmegen is the main actor in this research. Within this administrative body, there are some relevant departments for this research, such as 'Building and Housing' and 'Greenery' (Municipality of Nijmegen, 2022a). The influence on the bodies within the Nijmegen municipality that have a role in the decision-making and planning process of the City Island project will be investigated, but for the sake of convenience and to avoid confusion, this research will further refer to 'the municipality of Nijmegen' as a whole.

There has already been some explaining on another important element of this thesis, namely the City Island project, which has been under investigation. 'The City Island' is the name given to the project concerning the areas 'Veur-Lent' and 'De Hoge Bongerd' (*Stadseiland: Veur-Lent en Hoge*

Bongerd [City Island: area's Veur-Lent and Hoge Bongerd], 2022). Veur-Lent is the name of the island that was created by the construction of the side channel of the Waal (NOS, 2015). The Hoge Bongerd is a piece of land above the Waal attached to Lent. When this study refers to '*the City Island*', it therefore refers to the project about the future destination of both areas, even though it sounds as if it is only about the '*Waaleiland*'.

1.3 Scientific and Social Relevance of the Research

This research makes a scientific contribution to existing literature for several reasons.

First of all, the project being researched is still in progress and the time span of the planning process up to now has been almost since the opening of the *Waaleiland* in 2015 (NOS, 2015) until now. This makes scientific research into the project very topical and in the future, it can contribute to the knowledge of the entire process surrounding the City Island project. Because of the topicality of the subject, there has been only little scientific research on it to date.

Secondly, there is some research to be found on the project, but a specific study into the different discourses on biodiversity and their influence on the municipality of Nijmegen in the planning process is as yet unique. The research can, therefore, contribute to existing literature, knowledge and information about the influence of biodiversity discourses within the planning process of the City Island project and is therefore scientifically very relevant.

Moreover, the information and knowledge gained from this research can be useful for other more general debates or studies on biodiversity discourses and in specific its role in local planning processes. It is possible that other regions experience the same lack of knowledge with this subject, thus with similar urban planning processes.

From a social point of view, this research also has a relevant contribution for several reasons. As mentioned earlier, there is a lot of friction in society when it comes to the area of Veur-Lent and the Hoge Bongerd. It is a sensitive issue for many residents and almost everyone has an opinion about what should happen to the area and many people express this opinion (see background 1.1). However, their knowledge about the subject and in specific the influence of biodiversity discourses is often limited.

Firstly, this study can contribute to the transfer of knowledge and information to local residents, stakeholders and other parties involved in the area, so that people have a better understanding of the background of the planning process and the influences on it from a sustainability perspective.

Secondly, *the City Island* has proven to have great social value, especially in times of COVID-19. In corona time, more people than ever use the river park in the middle of the city (Nijtmans, 2021). For many people, seeking out nature has proved to be a physical and mental outlet and contributes positively to their mental health (Vries, 2021). *The City Island* contributes to the well-being of its visitors and therefore to the whole of society. So, a lot of the inhabitants of Nijmegen and other neighbors of the area make use of it a lot and form an opinion about what its future should be using biodiversity as a part of their argumentation, without actually having much knowledge on the subject.

The importance of the area to society is enormous and new research is therefore extremely relevant. In that way, more knowledge and information on the influence of biodiversity discourses in the planning process of '*The City Island project*' can be mutually transferred and a better general understanding can be created.

2 Theoretical & Conceptual Framework

2.1 Biodiversity

A key concept of this research that needs some elaboration is biodiversity, which can be seen as a part of the term 'sustainability' if the goal is to achieve preservation of or an increase in it. Sustainability in general is a very broad term and there are many different aspects that the term covers. The World Commission on Environment and Development came up with a definition in 1987 stating that sustainability is economic-development activity that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). This covers all the different concepts and perspectives related to the term sustainability. Therefore, this explanation also applies for the term 'biodiversity' in specific, but in a way where the amount of all the different species remains the same or expands.

In the discussion about the future of *the City Island*, there are especially many voices that say that nature and greenery will be endangered by any construction on the island. This research, within the concept of sustainability, therefore explicitly focuses on the concept of 'biodiversity', with biodiversity as a concept that refers to the variety of life forms and ecosystems within a certain area (National government, 2017). Researching just the theme biodiversity has been becoming more and more relevant over the years, also for the municipality of Nijmegen in specific.

In the earlier days, the aforementioned term 'sustainability' has been a part of certain environmental visions, with biodiversity as a small part of that. Nowadays, biodiversity plans are becoming a part of environmental visions and other documents, making it a lot more relevant than years ago (Municipality of Nijmegen, 2020a). Therefore, focusing on the influence of biodiversity in this subject is very interesting and relevant.

2.2 Discourses and power

Foucault's work is relevant in several ways to the study of biodiversity discourses as they relate to *the City Island project* planning process. First of all, Foucault is considered one of the originators of the concept of discourse. A discourse is any form of communication that can occur in any modality or context, from which a conception of reality emerges (van Hout, 2020). Discourses are everywhere in our society and play an important role (van Hout, 2020). Within this research, there are different types of discourses on biodiversity that may play a role. Thus, it is relevant to investigate these different discourses by means of Foucault's theory in order to get closer to an answer to the main question. In order to investigate the influence of certain biodiversity discourses, it is necessary to find out which discourses are present in the spectrum in question and in what form.

Moreover, power plays a very important role in Foucault's theories. His definition of power is as follows: "*Power is the way in which someone affects the actions of someone else*" (van Hout, 2020). According to him, knowledge is power and vice versa (van Hout, 2020). This is easy to link to discourses on biodiversity, cause a discourse about this subject is almost always accompanied by knowledge. Since knowledge thus equals power according to Foucault, it could be that when examining biodiversity discourses, certain power relations are visible in their influence on the municipality in the planning process of *the City Island project*.

Chimombo en Roseberry (1998) explain that an analysis of discourses can also examine the communicative process of a discourse. This means that not only the content of the discourse is examined, but also the purpose behind it. On this they say: "*Because most texts are goal oriented, part of the purpose of discourse analysis is to enable people to recognize the intended goal of the*

writer or speaker and thus achieve some measure of control over the discourse. The term control implies a power relationship between those who produce texts and those for whom these texts are intended" (Chimombo & Roseberry, 1998). In this way, the purpose behind certain discourses can be traced, which is useful when investigating which biodiversity discourses play a role in the planning process of the City Island project and how they are interwoven.

Moreover, behind a goal there is often a desire to gain as much power as possible over a certain thing. So, behind a certain ideology on biodiversity there often is an intended goal to influence others in getting the same ideology. That is how the discursive power becomes visible. Thus, the combination of power and discourses are very suitable for this research.

2.3 Discourse Analysis

In order to elaborate on Foucault and the role of discourses within his theories, the application of a discourse analysis within this research is very appropriate. Discourse analysis is concerned with both the study of texts and of pragmatics. Pragmatics is a study that focuses on examining the meaning of the language used in its context (Gee & Handford, 2012). Using discourse, meaning is given to phenomena in the world we live in and, vice versa, that world in turn has an impact on us as people (Gee & Handford, 2012).

Moreover, Hajer and Versteeg state that discourse analysis has three strengths (Hajer & Versteeg, 2005), all of which apply to this research topic. The first is the capacity to investigate the role of language in politics (Hajer & Versteeg, 2005). This fits well with a study of discourses, and thus language, and its influence on a political body, the municipality of Nijmegen. Secondly, it has the capacity to analyse the anchoring of language in practice (Hajer & Versteeg, 2005). In this research, that anchoring is the role of language and the practice the planning process of *the City Island project*. The third strength is the capacity to be able to answer 'how' questions, highlighting mechanisms (Hajer & Versteeg, 2005). This research is done by means of such a question and the mechanism to be highlighted are the discourses and their influence on the municipality of Nijmegen. All this makes discourse analysis a very relevant theory to frame the research (Hajer & Versteeg, 2005). In this thesis, only the biodiversity discourses will be analysed in order to get an answer on the main question. The reason for this was described in the 'biodiversity' part of the theoretical framework (see paragraph 2.1).

Another reason why a discourse analysis is relevant for studying biodiversity discourses and their influence on the municipality of Nijmegen in the planning process for the City Island project is because a discourse is the broad idea that language is structured according to various patterns that people's utterances follow when they participate in various activities of social life (Jørgensen et al., 2002). So, people believe in certain discourses and follow them in their daily practices of social life. Therefore, a discourse on biodiversity could be influencing people's behavior around the subject of biodiversity and therefore also on choices made in planning processes such as the one for the City Island project.

2.4 Biodiversity Discourses

Various discourses can be identified in the area of biodiversity. For example, proponents of the preservation or growth of biodiversity could proclaim that nature must be priority number one at all times, while proponents of, for example, more new construction could argue that there is no room

for nature. In addition, it is also an option that nature and humans should live together, even in the case of increasing urbanisation. Section 1.1 of this thesis also contains some examples of certain ideas about biodiversity and the City Island project. For example, it was mentioned that people do not want any construction in the area and want to preserve the greenery, but also that there are proponents of a lot of construction in the area. From the four development variants shown, various gradations can also be distilled with regard to construction and greenery, as well as variants in which greenery and construction go hand in hand. These gradations can then be assigned to the various discourses on biodiversity. These are thus classified by means of a short illustrative quote as follows:

- 'Nature as main priority'
- 'Sharing space with nature'
- 'No room for nature'

These three biodiversity discourses were also identified on the basis of other literature found. An explanation of the biodiversity discourses and related literature follows below.

Nature as a priority

The first biodiversity discourse relevant to this research is 'Nature as a priority'. Here, the communication that nature and the growth of biodiversity are extremely important is central. A good example of this is that for a few decades now, the Dutch nature conservation movement has been captivated by 'nature development', the deliberate striving not only to restore but also to allow the consciously controlled development of natural values. The well-known Nature Policy Plan of 1990, in which the National Ecological Network was presented as a new ideal, marked a turning point, if not in thinking then in policy (Zanden, 2015). The lecture highlights the importance of nature development. For example, it is stated that the National Ecological Network was presented as a new ideal, which indicates that an ideology in which nature is seen as a priority is central. This gives a good picture of the first possible biodiversity discourse of this research. In section 1.1 of this thesis, this discourse also emerged several times. Proponents of greenery on the City Island have already made it known in various ways that they share this ideology and follow this biodiversity discourse in their daily lives.

Sharing space with nature

There is also a discourse on biodiversity in which the presence of man and nature is seen as an inevitable interaction, in which both must live in harmony. In this discourse, developments in the area of population growth and urbanisation are important, but do not negate the value of biodiversity. Sharing space with nature is difficult with current population growth and urbanisation (Ottburg et al., z.d.). Cities are still expanding. As a result, the importance of biodiversity is growing, but we are keeping less of it. Yet with smart ideas and measures we can promote urban nature (Ottburg et al., z.d.). A nature-inclusive building and development strategy is also mentioned here and is a good example of the biodiversity discourse 'sharing space with nature'. For this research, this is possibly also a present discourse in the field of biodiversity since it has already been shown (see chapter 1.1) that in the possible development area of the City Island project there is also an interaction between nature and construction.

No room for nature

A third and final biodiversity discourse is one in which nature and the importance of biodiversity are not taken into account in certain plans. The communication of this discourse shows that other ideals are more important and that ecological values and natural areas are not taken into account.

President Bolsonaro of Brazil, for example, has almost no regard for the value of the Amazon as a high-value and incredibly important ecosystem. In his eyes, the trees and other forms of biodiversity in the area have no value compared to the importance of space for livestock and agriculture, among other things. This even goes so far that forest fires are deliberately started in order to create more space, and the felling of forests is also done with enormous speed (Ubags, 2019). This discourse on biodiversity does not support the development of nature and biodiversity but reflects the presence of other priorities when choices have to be made and nature is involved. In the context of this research, this is also a potentially present discourse as in the background of this thesis (see section 1.1), a number of examples are given of actions by proponents of construction in the area.

3 Methodology

3.1 Research Methods, Data Collection and Data Analysis

This research is carried out by means of qualitative research methods. Two different research methods were used in order to obtain data. Because this study is conducted by means of a discourse analysis, studying and analysing interviews and literature is appropriate. Because studies on biodiversity are important, including its influence, there is chosen for combining two research methods in order to indicate that influence and yield sufficient results. The data for discourse analysis is collected and then analysed by means of semi-structured interviews. Besides, a literature review was carried out by means of a document analysis, on the basis of which data is collected and analysed as well. This has mostly been an overlapping procedure where both methods continued to complement each other. However, a literature review was partly carried out first in order to find useful information for the interview guides.

In order to be able to answer the main question: *"How have biodiversity discourses influenced the municipality of Nijmegen in the planning process for 'The City Island project'?"*, three interviews will be conducted with relevant respondents that are involved in this project in different ways. In addition to these interviews, qualitative research is also done by studying documents and other textual content. For planning processes like the one researched in this thesis documents with certain visions or strategies are often created or already existing, probably containing a part about biodiversity. Multiple policy documents, environmental visions, memos and news articles were analysed in order to find information about the influence of biodiversity in planning processes on the municipality of Nijmegen. In that way, combined with the knowledge obtained from the interviews with key players, a better overview of the influence of biodiversity discourses is created. The interviews were transcribed, coded (see appendix 8.1 for codebook) and analysed. The relevant information found in the literature was analysed as well. In this way, data collected from interview transcripts and relevant literature were both analysed and the results were reported. For the main question of this research, combining these research methods is very suitable, because these methods contribute positively to a descriptive outcome of this research.

In addition, the biodiversity discourses that are interwoven with the results found by this analysing method are identified as well. By doing so, the actual influence of the main biodiversity discourses on the municipality of Nijmegen in the planning process of the City Island project can be stressed. This will help answering the research question of this thesis.

3.1.1 Interviews with key players

In order to realise the triangulation of knowledge the interviews were conducted with different stakeholders, being a city council member, an advisor in green, water and climate adaptation, and an architect. This gives insight in the research topic from multiple different perspectives.

The first interview was with councilor Marieke Smit of Groenlinks Nijmegen. The city council of Nijmegen is very important for the subject of this research since the council will pass the final decisions and also since the existence of the Waaleiland in 2015 (NOS, 2015) they are the owner of the area between the railway bridge and Waal bridge (Interview 3, Consultant, 2022). An interview with someone from this perspective was very relevant and lucrative for this research.

Secondly, an interview was conducted with an ecologist who advises the municipality of Nijmegen in the field of green, water and climate adaptation. This perspective is very interesting for research on the theme of biodiversity and therefore in particular for a study on its influence on the

municipality of Nijmegen.

The third and last interview was conducted with Martin-Paul Neys, an architect and head of the Architectural Centre of Nijmegen (ACN). It is interesting to look at this subject from his perspective as he is somewhat distant, but does have to deal with similar issues within his field of work. Also, he has been involved in this project in a certain specific way, which makes it interesting to hear his point of view.

The interview guides for the interviews with key players have been drafted in such a way that the results can be easily combined with the results of the literature review of documents, etc. The interview guides differ slightly for each respondent, with the difference in questions being based on the profession they exercise and the perspective from which they relate to the subject of this study. In this way, it was possible to get the most out of the interviews. The interviews were semi-structured in the interview guide, which means that the guide only served as a handhold during the interview. More questions about certain important subjects were asked and new questions arose. Because of the difference in respondents and their knowledge and background, it sometimes only became clear during the interview what they mainly had knowledge about and which questions were therefore significantly more appropriate to ask. Therefore, this way of interviewing was very suitable for collecting as many good results and data as possible.

3.1.2 Literature study

The second part of this research consisted of literature research. In particular, relevant documents were searched for the project this research is about, in which biodiversity is cited and discussed as a theme. The aim was to find certain rules and guidelines regarding biodiversity that are relevant to planning processes of projects such as the City Island. During the research, I also looked for other useful information concerning biodiversity that might be applicable to this study. Several documents, reports and visions were found with relevant information. How many and which documents were found exactly is set out in section 4.1 from this thesis. After the literature review, all relevant information was analysed and combined with the results of the interviews. On its own, this research method proved to be very suitable. However, the literature review also supported the interviews and vice versa, which is also reflected in the corresponding results from the analyses. As a result, the two research methods reinforced each other throughout the process, which benefited the final result. Moreover, this method of research proved to be suitable for the type of research of this thesis. The results set out all the findings of the literature review, combined with the results of the three interviews held.

4. Results

In this section, the results of the empirical research carried out will be set out. The results from the interviews are combined with the results from the literature study to answer the research question of this thesis: *How have biodiversity discourses influenced the municipality of Nijmegen in the planning process for 'The City Island project'?* There is an examination of how the municipality of Nijmegen is influenced in this by explaining the different types of influences in the planning process for the City Island project. Besides, the biodiversity discourses that are interwoven in those influences are identified. This identification is underpinned by results from the analysis of the interviews and literature review and linked to section 2.4 of the theoretical and conceptual framework.

There are some other documents that are related to the subject of this thesis and may contain useful information, but they have not been analysed and discussed in detail like the documents below. The reason for this is that the documents in question contain less relevant information and were not or hardly mentioned by the respondents in the interviews. Some documents were mentioned briefly (Groen & Boekennoogen, 2020) or had a lot of overlap with other documents discussed (Martens & Krijt, 2019). Documents that were not mentioned at all in the results above were not considered valuable enough to answer the main question and were therefore omitted. Moreover, an analysis and explanation of the below documents provided sufficient results for this section of the thesis.

4.1 The influence of biodiversity in documents

Many different documents were found that are relevant to the City Island project to some extent, in which the theme of biodiversity is also discussed. In the three interviews, most of these documents were also named by the respondents. Some important documents mentioned are the ambition document for the City Island, the environmental vision of Nijmegen, the nature pearl report, the Toolbox nature-inclusive development and building and the Biodiversity Plan (Municipality of Nijmegen, 2020a). In addition, the Species Management Plan Nijmegen (SMP-N) is also applicable (Martens & Krijt, 2019). These documents are part of how the municipality is influenced and perhaps still is, because the relevant pieces of information from the above-mentioned documents have an impact on the municipality of Nijmegen in the planning process of the City Island project.

Ambition Document

The Ambition document was drawn up specifically for the City Island project and issued in February 2021. This document contains specific ambitions for the future of the City Island, including ambitions concerning biodiversity in the area. The document schematically states what the expectations are for this, under the heading of nature: *"The development areas will make a positive contribution to the strengthening of biodiversity through nature-inclusive building and the realisation of diverse greenery in the areas"* (Department City Development, 2021). This quote reflects the second biodiversity discourse from section 2.4 well, given the fact that nature-inclusive building is very typical for sharing space with nature. Besides, it is also indicated in the ambition document that the nature areas in and around the city island, parts of which are protected areas, will be respected and that minimisation of the effects on the areas is sought (Department City Development, 2021). Furthermore, the robustness of the Nijmegen green space and water structure has been mapped out, in which

biodiversity is called a 'spearhead' (Department City Development, 2021). This indicates the priority of nature in the ambition document well and can be linked to the first discourse on biodiversity called 'nature as a priority' (section 2.4).

The ambition document also cites two other documents that contain biodiversity related themes that serve as preconditions for the development of areas in the Waalsprong district, of which 'the City Island' is also a part (Department City Development, 2021). These are the SMP-N (Martens & Krijt, 2019) and the Toolbox nature-inclusive building (Arcadis, 2020), which both contain very beneficial goals for biodiversity. The SMP-N (Martens & Krijt, 2019) is a plan in which is described how the species living in and around Nijmegen must be managed in order to preserve them. The Toolbox nature inclusive development and building (Arcadis, 2020) is about construction together with nature, but more on this document will be explained in this chapter (4.1). The ambition document states that both should be applied in the development of the City Island (Department City Development, 2021). The fact that both the SMP-N (Arcadis, 2020) and the Toolbox nature-inclusive building (Arcadis, 2020) should be applied indicates the influence of biodiversity discourses in the planning process of the project the City Island very well. Both 'nature as a priority' and 'sharing space with nature' discourses are significantly intertwined in the ambition document and therefore influence the municipality of Nijmegen in this planning process.

On top of that, since the ambition document was drawn up by the Nijmegen city council itself and especially for the City Island project, namely by the Urban Development department, it is safe to say that the included expectations, goals and preconditions regarding biodiversity are very influential within the planning process of it. Marieke Smit, councilor for Groenlinks Nijmegen, also confirms this: *Yes, yes, we also have wishes and objections, for example, with the ambition document. That's a procedure we follow in the council, and then you can express wishes that we think the board should do this and that. And if there is a majority for it, then the board must carry it out* (Interview 1, Marieke smit, 2022). Martin-Paul Neys, architect and head of the ACN, also mentions the ambition document when asked about certain influential frameworks or preconditions in the planning process of the City Island: *"There is already an ambition document for the island"* (Interview 2, Martin-Paul Neys, 2022). Thus, the document is very important for the project.

The biodiversity discourses that are interlaced in this document have an enormous influence in the planning process of the City Island project on the municipality of Nijmegen, because, as stated before, this document was drafted specifically for the project. Therefore, 'sharing space with nature' and 'nature as a priority' are the main discourses that influence the planning process through this document.

Environmental Vision

Another document that is relevant and that came to the fore in both the literature study and the interviews is the Environmental Vision of Nijmegen 2020-2040 (Municipality of Nijmegen, 2020b). This document describes how Nijmegen will develop and what it will look like in the future. Four tasks have been included that serve as spearheads for the vision. In the future, Nijmegen must become an economically resilient, socially healthy, attractive and sustainable city (Municipality of Nijmegen, 2020b). Under that last heading, 'a sustainable city', the theme of biodiversity is described. First of all, the nature pearls are mentioned. Nature pearls are described as green areas with high biodiversity (Municipality of Nijmegen, 2020b). According to the vision, these should be connected with each other and with nature areas outside the city in order to preserve and

strengthen biodiversity. Later on, in the vision, they are more specific about this and the idea becomes clear:

"These ecological connections run through public spaces, private gardens and through the air (flyways for bats along tree lines). The connections between natural pearls, gardens and natural areas outside the city provide opportunities for animal movement and plant dispersal. By means of targeted green management, we will promote an increase in biodiversity" (Municipality of Nijmegen, 2020b).

A number of green corridors will be strengthened and an increase in the area of green space will be realised, both of which for the benefit of biodiversity in the city. The vision also mentions nature-inclusive building, which must go hand in hand with this (Municipality of Nijmegen, 2020b). A report on this has also been published and has emerged from the analyses, about which more will be examined in this section (4.1). The environmental vision is definitely influenced by the discourses of 'sharing space with nature' and 'nature as a priority', which were classified in section 2.4. The importance of biodiversity is mentioned and plans are drawn on increasing biodiversity and connecting green area's within the current state of the city.

The environmental vision and its influence on the municipality of Nijmegen becomes more clear in the interviews. Marieke Smit, councillor for Groenlinks Nijmegen, says the following when asked which biodiversity discourses have influenced the setting of frameworks within the planning process of the City Island: *"I think the vision of the environment, we have of course already used some of the things that we find important in it, so that is really the starting point"* (Municipality of Nijmegen, 2020b). The fact that a municipal councillor indicated that the environmental vision (and therefore the biodiversity discourses interlaced in it) serves as a starting point, clearly shows the influence of this document. An advisor in green, water and climate adaptation also mentions the four tasks mentioned above from the environmental vision and indicates that within the municipality of Nijmegen these are actually being kept as main tasks: *"So we are increasingly working towards the four major tasks, which are listed in the environmental vision. That was the attractive city, sustainable city, socially strong city and economically resilient city that ultimately lead to the spatial choices"* (Interview 3, Consultant, 2022). These words also show that there is an increase in working towards a good execution of these four tasks, which therefore also include the previously discussed objectives regarding biodiversity.

The biodiversity discourses 'nature as a priority' and 'sharing space with nature' are both visible in this report, so, the fact that the tasks implemented in it will be executed indicates the influence of the discourse in the planning process of the City Island well.

The Nature Pearl Report

A document that is less broadly based and more focused on the theme of biodiversity is the Nature Pearl Report. This report was published quite recently, namely in 2020, and is therefore very up to date. This report was commissioned by the City of Nijmegen in collaboration with several different parties and nature organisations (Zollinger & Sierdsema, 2020). With the help of 180 identified species groups of flora and fauna, a lot of natural pearls in Nijmegen have been determined. The area of the City Island project has also been designated as a natural pearl. A natural pearl is an area with high-quality nature and biodiversity (Zollinger & Sierdsema, 2020).

This report was commissioned by the municipality because, in their view, the green policy

had to be updated. The old policy plan from 2007 is no longer up to date and new visions and goals have been added (Zollinger & Sierdsema, 2020). This report, which was commissioned by the municipality of Nijmegen itself, contains characteristics of the biodiversity discourse 'nature as a priority' (section 2.4), because the area of the City Island project has been designated as a nature pearl and is part of the future plans on increasing biodiversity.

An advisor to the city of Nijmegen on green, water and climate adaptation mentions this document as well and gives some explaining: *"Yes, they drew up the so-called nature pearls report, which actually connects nature pearls, which are the large green forests and nature areas. They have four ecological connection zones with each other and with the rural area"* (Interview 3, Consultant, 2022). One of the new goals is described in the report as the desire for more ecology and biodiversity in Nijmegen's public green spaces. The nature pearls should be interconnected by means of corridors and the upgrading of areas designated as potential nature pearls (Zollinger & Sierdsema, 2020). More ecology and biodiversity are typical aspects of 'nature as a priority' as well, which means that this report is affected by that biodiversity discourse (from section 2.4).

The Nature Pearl Report was not only commissioned by the Nijmegen City Council, but was also included in the Environmental Vision, which according to Councillor Marieke Smit serves as the starting point for the planning process of the City Island project (Interview 1, Marieke Smit, 2022). The role of the report within this environmental vision becomes clear from the interview with the advisor of the municipality of Nijmegen in green, water and climate adaptation: *"That nature pearl report has ended up in our environmental vision (...) and, of course, it contains a great deal about biodiversity on both sides, the fact that it is declining and that we all have to preserve it but certainly restore it"* (Interview 3, Consultant, 2022). This again shows the importance of biodiversity for the municipality of Nijmegen, also because the report was commissioned and published by the municipality itself and eventually became an important part of the Environmental Vision.

The report mainly focuses on plans for increasing ecology and biodiversity in the so-called (potential) nature pearls, including the City Island, and is therefore mostly influenced by the discourse in which nature is the priority, that was identified in section 2.4. This means that that biodiversity discourse influences the municipality of Nijmegen in the planning process of the City Island project through this report.

Toolbox nature-inclusive development and building.

This toolbox is about nature-inclusive development and building, which is, in short, a type of construction where alternatives or adaptations for plants and animals are implemented. Nature-inclusive building serves as a guide for the Waalsprong, the area of which the City Island is a part. The toolbox elaborates on the now well-known SMP-N and describes how future building projects can be elaborated in such a way that the nature value is not threatened and biodiversity is even enhanced. One of the goals is therefore to manage the species described in the SMP-N by means of nature-inclusive building and design plans (Arcadis, 2020). This form of construction method was even mentioned in the second biodiversity discourse in section 2.4.

Nature-inclusive building is a perfect example of sharing space with nature, because construction takes place with biodiversity being increased by smart adaptations on and around buildings. So, biodiversity is definitely taken into account. An example of this is described in one of the starting points: *"The toolbox specifically focuses on creating a favourable living environment for house sparrows, swifts and common dwarf bats (the building-related species). Measures taken from*

the SMP-N and the toolbox have a general positive effect on biodiversity. As a result, other (non-protected) species also benefit from the provisions" (Arcadis, 2020). This toolbox is a good development for biodiversity and, according to Marieke Smit, city councillor for Groenlinks Nijmegen, also something that has changed especially in recent years, while she also quotes the Environmental Impact Assessment:

"Well, I suppose you know about the EIRs: the environmental impact reports. These contain a very explicit description of what a building project can do to nature, biodiversity and such like. But in recent years, for example, we have also adopted the Nature Inclusive Building Policy Document. And it used to be a kind of guideline for us, but we have now indicated that for new building projects it really has to become an obligation. So, if we are going to build or if we are in the process of building houses, then yes, nature-inclusive and also biodiversity will be part of it, so I'm not the green person within the group, but it has become more and more of a permanent part of the portfolios" (Interview 1, Marieke Smit, 2022).

So nature-inclusive building is a recent trend that seems to have caught on in the municipality of Nijmegen itself. This trend is also noticeable within other sectors. Martin-Paul Neys, architect and head of the ACN says this: *"Well, as an architect, of course you have a great influence on the design of the living environment of humans, but also of plants and animals. And with my firm, I'm making it my speciality to build more and more in a nature-inclusive way"* (Interview 2, Martin-Paul Neys, 2022). Hieruit wordt duidelijk dat de discourse 'sharing space with nature' verwoven zit in meerdere sectoren die met het project gemoeid zijn en een invloed uitoefenen op het planningsproces.

A consultant of the municipality of Nijmegen in green, water and climate adaptation follows this discourse too and supports it with an example:

"The moment you put up buildings and ensure nature-inclusive construction, which we all do there and which is compulsory, then you get extra urban nature. You get some extra birds that are hardly there at the moment in any case. And yes, as long as it's green facades or a green roof. Well, that's also what you get when you build a park or if you choose, say, the lightest variant of houses, the semi-detached houses or something like that. So nature will benefit in all variants, on that stretch. Yes, it will" (Interview 3, Consultant, 2022).

This provides a clear picture of how nature-inclusive building can contribute positively to the growth of biodiversity in the development area. The Toolbox nature-inclusive development and building will continue to serve as a compulsory guideline for the future building developments of the City Island project, which is beneficial for the biodiversity.

The importance of biodiversity and the related discourse that was classified as 'sharing space with nature' (section 2.4) has become clearly visible here. In fact, several sectors show that a cooperative development of nature and construction is the way to improve the area for the benefit of both interests. Thus, through this toolbox, the municipality of Nijmegen is influenced by the biodiversity discourse 'sharing space with nature' (section 2.4) in the planning process of the City Island project.

Biodiversity Plan

The biodiversity plan has much overlap with the documents already discussed and is also mentioned several times. In fact, this plan is a kind of vision for the future focusing only on the theme of biodiversity. In the past, biodiversity was part of various policy documents, but this is the first time

that a separate plan is being drawn up for this theme (Municipality of Nijmegen, 2020a). Advisor in green, water and climate adaptation of the municipality of Nijmegen confirms this and tells how it is going:

"Well, it's getting more and more attention. The fact that we are drawing up a biodiversity plan. Which has also been widely shared and drawn up with an external sounding board group and with an internal sounding board group. I think this gives us a very nice plan that addresses species protection, right? Something we haven't done very much, very explicitly, so that we need to monitor more, because we simply lack knowledge (....) we should apply citizen science much more to help with the lack of knowledge, but also to strengthen the position of biodiversity within our colleagues." (Interview 3, Consultant, 2022).

This indicates that there is an increase in the recognition that biodiversity must be seen as a priority, which is perfectly in line with the biodiversity discourse from 2.4 called 'nature as a priority'. The subject is becoming more and more relevant, also within the municipality, and more knowledge should contribute to the awareness of the importance of biodiversity. Because of the increasing attention for this theme, other memos and reports in this area followed, such as the Nature Pearl Report (section 4.1). In the presentation of the biodiversity plan to the departments within the municipality of Nijmegen, this report is also mentioned, as well as the Environmental Vision and the Toolbox Nature-inclusive development and building.

In addition, the nature pearl report and the toolbox nature-inclusive development and building were even cited as tools for the realisation of this biodiversity plan (Municipality of Nijmegen, 2020a). Later on in the interview, the advisor of the municipality confirms that the theme of biodiversity has grown in popularity and also describes what he and his colleagues mean in this respect for the municipality of Nijmegen:

"So the whole process of the biodiversity plan after that has brought that up even more, including presentations in professional groups. So we can say that biodiversity has become quite an important item and, to finish it off, in the coalition negotiations which are now underway, of course. We are providing documents for that; task files and we are linking biodiversity to climate adaptation, because there is a lot of overlap" (Interview 3, Consultant, 2022).

So, within the municipality, nature, and in specific biodiversity, is increasingly seen as a priority in future plans. This discourse ('nature as a priority') is therefore influential on the municipality via this plan in the planning process for the City Island project.

Research was carried out for the preparation of these documents and reports. This resulted in knowledge about biodiversity and the City Island, which was then implemented in the documents and reports. According to Foucault, knowledge is power and vice versa (see 2.2) (van Hout, 2020). Power is then further explained in 2.2 as the way in which something or someone influences the actions of someone else (van Hout, 2020). The documents and reports that contain knowledge influence the municipality of Nijmegen in the planning process of the City Island as they are included and used as guidelines or obligations. This is because of the power that these documents and reports have, as it were. The biodiversity discourses behind these documents and reports thus influence the municipality of Nijmegen in the planning process of the City Island project.

4.2 Discussions on biodiversity

Another way in which the municipality of Nijmegen is influenced in the planning process of the City Island project is by different forms of discussions. This form has been expressed in several ways during the planning process of the City Island project and by many different stakeholders. The results will be outlined below, separating the different forms of discussion. Each form of discussion is explained separately and the theme of biodiversity is highlighted, including an indication of the intertwined biodiversity discourses. This will then make clear how these discussions around the City Island and biodiversity have influenced the municipality of Nijmegen within the overall planning process of the project. The City Island project is not only a much-discussed topic on a governmental level, but is also very much alive among the residents of Nijmegen and beyond.

Petitions

One form of discussion or at least one form that has generated discussion is a petition. During the entire planning process, petitions were started by both supporters and opponents of building on the island. In addition, polls and surveys were conducted several times to see how the population viewed the future of the area. When, in 2020, the Nijmegen city council wanted to implement its plans for high-rise buildings, an online survey showed that more than 2,000 respondents (total respondents not mentioned) did not want any housing on the island at all (Nijtmans, 2021). In addition, a petition set up in January 2021 against house building on the *Waaleiland* was signed more than 1,000 times within one day (Nijtmans, 2021). Proponents of house construction in the area have also been active: in a readers' poll conducted by *De Gelderlander* in December 2020 about house construction on *Veur-Lent*, the proponents emerged as the winners with a small majority of the total 1708 respondents (Nijtmans, 2021). The underlying thought behind these petitions and polls derives from multiple discourses on biodiversity but in this case, mostly the discourses called 'nature as a priority' and 'no room for nature' (see 2.4) can be identified. This is because most of the attempts to influence the planning process via petitions and polls contain mainly either pro-biodiversity or pro-building discourses. However, it must be mentioned that some people's opinions could also be influenced by the discourse 'sharing space with nature' because they are known with nature inclusive building.

From this sample of various petitions and polls concerning the future of *Veur-Lent*, the part of the project that lies on the island, a petition against building had influence, according to Marieke Smit, council member of *Groenlinks* Nijmegen:

"Yes indeed, because that was the first petition actually for not building. And well, then more voices were heard from the city, so that was actually the reason, because first we were just going to build and it would go ahead, to reconsider that, so absolutely yes. On the other hand, of course, we got reactions from people saying, yes, we have a serious housing shortage"
(Interview 1, Marieke Smit, 2022).

Because of this petition and other voices, the municipality decided to reconsider the building plans, after which they even decided to conduct a city survey themselves. This is a very good example of how power and discourses can have linked one another. As Foucault explained that power is the way in which someone affects the actions of someone else (van Hout, 2020), you can say that this is

visible in this chain of actions. The discursive power, in the theme of biodiversity, running behind this petition was so strong that it affected the municipality of Nijmegen in a way that they decided to stop the building plans. Afterwards, due to all the incoming petitions, they even decided to run a city survey. Marieke Smit, councilor for Groenlinks Nijmegen explains how this happened: *"Yes, the city survey actually started because all kinds of petitions came in, so it was both don't build and do build, so we were like, yes, these are 15-year-old documents. Maybe we should let the city talk about it? Yes"* (Interview 1, Marieke Smit, 2022).

It is clear that the planning process has been delayed because residents and other interested parties have caused discussion through collective discursive power. This is also confirmed by Martin-Paul Neys, architect and head of the ACN: *"Well, at least it caused a delay, right?"* (Interview 2, Martin-Paul Neys, 2022). In his view, however, the fact that there has been a delay in the City Island planning process is not a negative thing at all:

"Now more attention is being paid to all the aspects that clearly play a role in this place, including biodiversity. And I thought it was important, as I said earlier, to break through that black-and-white thinking and make it clear that it is only 10% of the island that is under discussion for building, and not the floodplains and so on. So that there can be an honest debate about it (...) it's just too special for that." (Interview 2, Martin-Paul Neys, 2022).

So, the discussions and petitions around the City Island project have contributed to influencing the municipality in a way where more attention was created for the subject. Therefore, the discursive power of both the supporters and the opponents of building in the area has resulted positively in a delay in the planning process and the creation of a city survey.

The city poll has now been conducted and the results were announced on 10 May 2022. Of the 1596 inhabitants of Nijmegen (sixteen years of age or older), the Waalpark option proved the most popular: 49 percent prefer it, compared to 18 percent for the dike district, 17 percent for the bridge district and 15 percent for the mirror city. Of the respondents, 80 percent called the city park appealing to very appealing, as opposed to 56 percent, 36 percent and 22 percent respectively for the other options mentioned above (SP Nijmegen, 2022). It is safe to say that the petition of the proponents of greenery and biodiversity, that was mainly influenced by the biodiversity discourse 'nature as a priority', has borne fruit, since the final results of the poll, which came out of it among other things, have turned out in their favour. What the municipality will ultimately do with the results remains to be seen, but when asked about it, councillor Marieke Smit said the following:

"It will be included in the decision-making process, but it is of course quite weighty. At least, I cannot speak for the other groups, of course, I do think that when you do a poll, you have to take the results very seriously, and of course you can always interpret a poll in different ways. There can always be two different results, so of course you can have a discussion about that, but as far as I'm concerned I think most parties are not going to just ignore it. If people say we shouldn't build and we will choose the urban variant, it would seem very crazy to me" (Interview 1, Marieke Smit, 2022).

This indicates that actions can be affected by other people's actions, which is how Foucault explained the term 'power' (see section 2.2) (van Hout, 2020). The final destination of the area is still unknown to this day, because the executive board of the city council hasn't decided which development plan will be chosen yet. However, through the discursive power of the biodiversity discourse 'nature as a

priority' behind the petition against building on the island, the proponents of biodiversity managed to have their voice counted in the planning process.

Debates on the City Island project

There have been several debates about the City Island project, with various speakers present. One of the initiators of these debates is the Architecture Centre Nijmegen (ACN), says Martin-Paul Neys, head of this centre: *"And with the architecture centre, we made sure that we also set up a number of debates and invited several speakers to talk about this topic"* (Interview 2, Martin-Paul Neys, 2022).

He believes that biodiversity discourses, like the ones classified in section 2.4, are sometimes used in an unjust manner. The debates can therefore contribute positively to influencing biodiversity discourses in the planning process of the City Island project. This way, stakeholders, and the municipality of Nijmegen as well, can get a better understanding of what the different discourses mean for the future of the island and misconceptions can be corrected. Martin-Paul Neys explains how the biodiversity discourse 'no room for nature' (see 2.4), which is derived from, among other things, proponents of construction on the island, has been wrongly framed:

"In that discussion, it was made very much as if those in favour of building wanted to fill up the entire island, including all the floodplains and including the entire point that runs to the West. Well, that's not true, is it? So, I think it's unfair for that to be framed in that way. (...) But then I'm convinced that you can design a beautiful piece of nature where people can still live. So, I am convinced that you can design a very beautiful piece of nature, which can be a very wild nature park, but that it is also possible to build somewhere between 150 and 250 houses, so to speak, without them standing out" (Interview 2, Martin-Paul Neys, 2022).

This shows why debates can be very valuable in clarifying the overall situation and planning around the City Island, namely because of some of the misconceptions surrounding the subject. That way, the influence of biodiversity discourses on the municipality of Nijmegen is properly grounded and not framed. This is a very interesting result, because this indicates that people, who are pro-building, don't necessarily have to be following the discourse 'no room for nature' (see 2.4), but could instead be following the 'sharing room with nature' discourse (see 2.4).

Therefore, for example, on 15 February 2022 a debate was organised in the LUX theatre in Nijmegen by the ACN which was open to interested parties or people. The alderman of Nijmegen, a national advisor on the physical environment, an urban planner and a landscape architect were present to debate the possible future of the island. When Martin-Paul was asked about the influence of such a debate, where also the main subject of this thesis 'biodiversity' was discussed, on the municipality of Nijmegen, he said the following:

"Well, I hope that the position taken by a national advisor like that is heard by the local administrators and the municipal council. And that they take it into account in their considerations and that the civil servants who attend these debates also take it into account, yes. (...) So, we hope that by showing examples like that in Nijmegen, people will learn to look beyond the standard neighbourhood, right? (...) That does indeed produce something and I think that's an important role for the Architecture Centre to play in Nijmegen, in bringing the debate a bit wider than the usual examples" (Interview 2, Martin-Paul Neys, 2022).

It is difficult to say for sure how the municipality of Nijmegen is actually influenced in the planning process of the Stadseiland project by debates such as these. However, the fact that the alderman himself was present, together with some other colleagues of the municipality of Nijmegen, indicates that they want to actively debate the subject and are interested in different perspectives. In addition, there are multiple discourses on biodiversity interlaced with the presentations of the speakers in the debates. As stated in section 2.2, there is always a goal or purpose behind a certain presentation. This is where the power of discourse can be linked to influencing the municipality. Foucault stated that power is knowledge and knowledge is power, as explained in section 2.2 (van Hout, 2020). The national advisor on the physical environment, an urban planner and a landscape architect all have knowledge in their fields, so the biodiversity discourses underlying in their presentations are groundend. Due to the fact that they have knowledge on the subject (from a perspective of their own field) means that they have the power to affect the actions of others (van Hout, 2020). Therefore, they are able to influence the municipality of Nijmegen with their point of view on the biodiversity via their presentations in the debates. But by which biodiversity discourses and to what extent remains unclear.

The municipality of Nijmegen is therefore only influenced by the discourses 'nature as a priority' and 'no room for nature' as they were interlaced in the petitions. From the analysis on debates, no evidential results came to light on biodiversity discourses intertwined in those. Therefore no assumption can be made that there was an influence through these debates on the municipality of Nijmegen in the planning process.

4.3 Policies on biodiversity

The municipality of Nijmegen is also influenced in the planning process of the City Island project by different policies. In terms of certain policies regarding biodiversity, several different results came to light from the analyses. These are somewhat more difficult to distinguish from each other and to label, but eventually a subdivision has been made of three different types in which a certain policy can be identified that influence the municipality of Nijmegen in the planning process of the City Island. Besides, in this, the biodiversity discourses intertwined are examined as well.

The influence of researchers and advisors in the biodiversity spectrum

The municipality of Nijmegen is an administrative body of enormous size and with many different departments. However, the Nijmegen city council will ultimately decide on the future of the City Island. In order to have enough knowledge of the matter for decisions such as these, it is policy that the municipality allows itself to be advised and thus influenced in various ways, including in the area of biodiversity. Both internal advisors and external researchers are involved. Marieke Smit, herself a councillor for the *Groenlinks* political party in Nijmegen, indicates that external research is being carried out in the area of biodiversity, the results of which are taken into account in discussions with the municipality and solutions are being sought:

"Well, we have a number of research bureaus that do a lot of research for us into what's available in terms of biodiversity (...) very specific research is being done, for example to find out if there are any red list species, such as a partridge that was spotted a while ago. Then we have a discussion in the city council about whether it is wise at all or whether further research is needed. And, well, we actually do that with a lot of different animal species, too, for example when we talk about bees or bats. If we build, then, you can disagree on whether you

should not build at all, but you could also, for example, do this by giving the animals another alternative, by hanging up bat boxes and suchlike to keep it a pleasant place for them. Or for example, if there are special grasses or plants, whether you can move them or preserve them in some other way and build with them. So, it is really a starting point, yes" (Interview 1, Marieke Smit, 2022).

The policy of the municipality of Nijmegen is therefore to deploy researchers in the field of biodiversity to gather knowledge. She then also indicates that these studies serve as a starting point. Later on she confirms that the results of the research are taken for granted and form the basis for establishing certain guidelines and frameworks for planning processes, when she is asked about this: *"Yes, indeed, yes"* (Interview 1, Marieke Smit, 2022). This confirms that knowledge is power and vice versa (van Hout, 2020), as the results of the studies are considered correct knowledge by the municipality of Nijmegen and serve as guidelines. This is a good substantiation of the influence of their own policy, namely research into biodiversity, in planning processes, including those of the City Island project. The influence of researchers in the field of biodiversity on the municipality of Nijmegen for the planning process of the City Island is therefore significant.

In addition, Smit states that in the council they discuss the results of the studies and see how they can apply them to the future development of the area. As an example, she mentions that alternative solutions can be sought, so that it is possible to build, but the biodiversity in the area is not at risk (Interview 1, Marieke Smit, 2022). This fits well with the biodiversity discourse 'sharing space with nature' from section 2.4. Since the municipality of Nijmegen has these studies as a guideline, one can say that the results of the studies are in line with this discourse on biodiversity and that the researchers also provide reports which have this underlying philosophy.

Internally, the municipality of Nijmegen also employs officials who are specialised in overarching themes that include biodiversity. They advise the city council and deliver reports as well. For this thesis one of these officials was also interviewed, namely an advisor in green, water and climate adaptation, who also describes himself as a biologist and ecologist. Part of the municipal policy is that he and his colleagues write plans, reports and advices for the city council, including for example the Nature Pearl Report (see 4.1) (Zollinger & Sierdsema, 2020) and other reports on biodiversity: *"So we can say that biodiversity has become quite an important item and, to finish it off, in the coalition negotiations which are now underway, of course. We are providing documents for that; task files"* (Interview 3, Consultant, 2022). His department has obtained power to influence the municipality of Nijmegen due to the fact that they have knowledge on the subject and must deliver advice. This is confirmed by what Foucault stated in 2.2 about power and knowledge and the ability to influence others (van Hout, 2020). The consultant adds:

"And yes, the moment you start using the argument of yes, but it's such a valuable area, then I'll knock that down with a bang: that's an absolutely worthless story, of course, because there's literally nothing on that piece of grass, because it's always been managed as low grass. (...) And, uh, if you build something there, you literally don't disturb anything in that spot, except, say, that of course when you build, you get more residents, more traffic, you have to lay things out. You have a building process, blah blah blah, so there is more disruption" (Interview 3, Consultant, 2022).

This ties in with what he mentioned earlier (in the results of the documents), namely that proponents of green space and biodiversity wrongly use these terms in their argumentation. The biodiversity discourse that derives from the findings of his department becomes clear further in the interview. According to the advisor, the area, where building is possible, has hardly any nature value and can only be scaled up with the help of nature-inclusive building. This can be linked to the biodiversity discourse 'sharing space with nature', which will therefore be of influence on the municipality of Nijmegen in the planning process of the City Island project due to the fact that they are advised by this.

The influence of the municipality's external researchers and internal advisors in the area of biodiversity on the municipality itself, in which the discourse 'sharing space with nature' (see section 2.4) is interlaced, is certainly present, because they have the ability to influence them due to their knowledge. It is due to their own policy that they are advised by municipal departments and research firms.

Guidelines, Rules & Obligations

There are certain guidelines, rules and obligations around biodiversity that the municipality follows and uses as a handhold for the City Island project. This is part of their policy when it comes down to planning development area's like that. Marieke Smit also indicates this when asked about the role of biodiversity within the municipality of Nijmegen: *"This has really become a permanent part of building over the past few years, so for example, every time we have a zoning plan, we have to deal with it. Well, I suppose you know about the EIRs: the environmental impact reports. These contain a very explicit description of what a building project can do to nature, biodiversity and such like"* (Interview 1, Marieke Smit, 2022). Here she also mentions the EIR (Groen & Boekennoogen, 2020), which also contains established rules and guidelines on how much impact a building project may have on the environment, nature and biodiversity (Groen & Boekennoogen, 2020). Moreover, nature-inclusive building also comes up in terms of rules the municipality has to comply with for the City Island project:

"But in recent years, for example, we have also adopted the Nature Inclusive Building Policy Document. And it used to be a kind of guideline for us, but we have now indicated that for new building projects it really has to become an obligation. So, if we are going to build or if we are in the process of building houses, then yes, nature-inclusive and also biodiversity will be part of it, so I'm not the green person within the group, but it has become more and more of a permanent part of the portfolios" (Interview 1, Marieke Smit, 2022).

She indicates that this document was first used as a guideline, but that it has become an obligation in recent years. This indicates an increase in the value of nature inclusive building and that their policy has changed in this. The nature inclusive building policy document (or Toolbox) (Arcadis, 2020) again is perfectly in line with the biodiversity discourse 'sharing space with nature', that was classified in section 2.4. The increased importance of this document in planning processes shows the influence of discourse on the municipality of Nijmegen well.

One of the reasons for this shift is that the area where construction is potentially to take place is surrounded by protected nature reserves. Martin-Paul Neys, Architect, says: *"Um, well, this is obviously an area that needs extra attention because it is in the vicinity of Natura 2000 areas, right? So actually, it is surrounded by Natura 2000 areas"* (Interview 2, Martin-Paul Neys, 2022). So the

development area is in the middle of Natura 2000 areas, which have a protective status. Moreover, part of the area is also part of the Gelders Nature Network, which is also a protected area (Department City Development, 2021). The municipality's policy in this area is to respect that protection and to comply with the rules and obligations that go with it for the benefit of biodiversity and nature. In here lies the discourse of 'nature as a priority' from section 2.4, because nature is such a priority that some area's surrounding the development area have a protected status. The fact that the municipality of Nijmegen obeys to that status and the rules that are paired with it shows the influence of this discourse.

In conclusion, there are many rules, guidelines and obligations on the topic of biodiversity, that the municipality of Nijmegen has to comply to in it's planning processes. In those, the discourses 'sharing space with nature' and 'nature as a priority' from section 2.4 are interwoven. So, the municipality of Nijmegen is influenced by those discourses in the planning proces for the City Island project through their own policy that they have to obey with these rules, guidelines and obligations.

The influence of green political parties on the policy

The third and final section of this chapter is about that the policy of the municipality of Nijmegen is actually influenced from within by the green character of a number of important and major parties within the city council. This green character means that themes on nature, biodiversity and the environment are some of the main priorities for the political party. The Nijmegen city council has GroenLinks as its largest party with 9 seats and the Party for the Animals has 4 (Municipality of Nijmegen, 2022b). Both parties are predominantly green and also have the theme of biodiversity high on their agenda. Together, they hold a third of the seats in the municipal council and can therefore exert a great deal of influence on the agenda, for example. Marieke Smit, herself a member of the city council for Groenlinks, sketches a good picture of what her party's work on biodiversity involves and also quotes the Party for the Animals:

"There are indeed a number of people in my group who are real experts in this field. They are also busy, for example with city planning, agriculture, with a tree plan or when the grass is cut, for example. It has to be done in a good way, so we have taken a lot of initiatives in this ourselves, so that is really very important to us and I think that compared to other parties we are greener. But we also have the 'Party for the Animals' for example, which perhaps takes it a step further. Sometimes we are very much in agreement, and sometimes, yes, they may have to go a bit further, but I think that's a fair comparison" (Interview 1, Marieke Smit, 2022).

This stipulates the influence of *Groenlinks* and the *Party for the Animals* in policies of the municipality well. This means that the biodiversity discourses that those political parties follow are very well visible in the policies they conduct on the theme of biodiversity. The biodiversity discourses that are mostly followed by her political party become clear from what she adds: *"It's not without reason that I'm in a green party, but I don't think it's only out of ideology that green is so important. It's also just really necessary; biodiversity. You just need to have a healthy ecosystem and yes, I think it's important for all the people on this planet that that's just fine and that it's going well, so definitely. Yes, so I think it's important personally, and yes, of course we take it into account in our policies"* (Interview 1, Marieke Smit, 2022). She immediately mentions that biodiversity is certainly taken into account in their policies. This indicates that biodiversity is really important to them, which refers to

the discourse of 'nature as a priority' from section 2.4 of this thesis.

However, the discourse 'sharing space with nature' could also be present as she stated examples of nature inclusive building earlier in this chapter (4.3). Later, she confirms the green character of her party once more: *"Fortunately I have a number of people in my group who have been involved with nature for a very long time, such as Mr Folkert, who was indeed a member of the Gelderland Environmental Federation and, well, very involved in things like that"* (Interview 1, Marieke Smit, 2022).

The consultant in green, water and climate adaptation also sees a certain change in favour of biodiversity, due to the green character of the municipality of Nijmegen, and says the following:

"Yes, biodiversity was not a separate theme four years ago, but green and green in the city, and there has been a shift because, with left-wing parties, especially GroenLinks as a major party. (...) And that's partly because the Party for the Animals is on the council and they have, of course, submitted one motion after another. (...) Now you suddenly see four or five parties in favour of greenery and ecological mowing and things to do with biodiversity and more greenery in the city, more trees in the city. Council initiative proposals often come from GroenLinks or a motion from the Party for the Animals that is embraced by all parties, so you can see a huge shift towards the current peak" (Interview 3, Consultant, 2022).

He mentions here that more and more parties have the theme of biodiversity as a priority, which is a good example that the discourse 'nature as a priority', which means that the municipality is influenced by this discourse in the planning proces of the City Island project from within their own council. Marieke Smit confirms this and indicates how Nijmegen roughly stands in the field of biodiversity nationally: *"I have to say that we, as Nijmegen, generally impose stricter rules than are indeed required by other parties. In that respect we are reasonably ambitious when it comes to biodiversity and the like"* (Interview 1, Marieke Smit, 2022). This is ultimately reflected in the drafting of documents and other decisions, because the municipal council is responsible for them. Marieke Smit says the following about this:

"Well, ultimately, the municipal council is the one that determines the zoning plans and the ambition documents and suchlike. So, in the end, we must deliver the plans and decide whether they should go ahead or not. But that's what we did for the ambition document in the first place. But, well, I guess you know that there will soon be a city survey, because of course there's also a lot of discussion about whether it's a good place to build and, I've been involved recently in that and I also co-sponsored the motion to have that survey conducted" (Interview 1, Marieke Smit, 2022).

This is where the theories on power (from section 2.2) become relevant. The fact that the municipality has such a green character means that the discourses of 'nature as a priority' and 'sharing space with nature' have a lot of power in influencing the planning proces of the City Island project. This power is also derived from the knowledge (van Hout, 2020) on biodiversity that was gained because a lot of people from the city council are involved with nature for a long time (in particular from *Groenlinks* as Smit mentioned before in this chapter).

4.4 Flora and Fauna and their role in creating biodiversity discourses

Of course, nature itself also exerts influence on the municipality of Nijmegen. In fact, they are the driving force behind the creation of the biodiversity discourses that were identified. It is not without reason that all kinds of different documents have been drawn up for this project in which nature also plays an important role and those discourses are visible. Moreover, the analyses have revealed different examples from biodiversity discourses that have exerted influence in one way or another. In this section, the role of the flora and fauna of the City Island in the creation of the biodiversity discourses classified is examined, with the help of multiple examples.

Under the heading of nature inclusive building, which has become well-known in the meantime, the role of flora and fauna is described in the ambition document: *"We include nature in the plan development from the beginning and start from the area-specific opportunities. This means that new developments consciously create space for nature in public spaces and on/near buildings. We want to develop City Island in such a way that flora and fauna have a place and are offered new opportunities"* (Department City Development, 2021). Marieke Smit, councillor for *Groenlinks*, also indicates this when she talks about nature-inclusive building: *"Or for example, if there are special grasses or plants, whether you can move them or preserve them in some other way and build with them"* (Interview 1, Marieke Smit, 2022). Both examples illustrate how the present flora and fauna in the area are the starting point for the planning process. From this starting point, stakeholders of the project begin to formulate their own ideology on this i.e., begin to follow one of the classified biodiversity discourses.

The flora of the area does not have an inconspicuous role within political party *Groenlinks* as well and therefore also within the municipal council: *"They are also busy, for example with city planning, agriculture, with a tree plan or when the grass is cut, for example. It has to be done in a good way, so we have taken a lot of initiatives in this ourselves, so that is really very important to us"* (Interview 1, Marieke Smit, 2022). So, the fact that they mention to take the trees and grasses present very seriously shows the role it has played in the formulation of this opinion and therefore on the biodiversity discourse they follow. The next quote confirms this:

"If we are going to build, can we do it in a way that does not harm biodiversity? And perhaps also the question of, well, even if we don't build or if we do build; It is, of course, well, the nature that is there is in some parts just very high-quality nature, but you also have parts where there is only, what is it called, that mono grass, without flowers, bees and things like that. If you're not going to build, you'll have to do something with that too, so whatever the outcome, the subject of high-quality nature is certainly a topic for discussion there" (Interview 1, Marieke Smit, 2022).

So, the quality of the biodiversity is really influencing the formation of biodiversity discourses. Stakeholders formulate their own ideology by identifying what specific biodiversity is present in an area and what its quality is. Based on that they follow one of the discourses that was classified in section 2.4.

A good example of flora and fauna being the driving force behind the creation of the 'nature as a priority' discourse (2.4) derives from the interview with Martin-Paul Neys. In his eyes, that

biodiversity discourse is firmly grounded and must be the most influential: *"biodiversity is of course the basis for life on earth and the continuation of life on earth, right? So actually, that is our gene bank and yes, for plants as well as for animals and well, every form of biodiversity is a part of our ecosystem. Yes, I am convinced that if you remove a link from the gene bank, it will have major consequences for life on earth, so I think this is very important"* (Interview 2, Martin-Paul Neys, 2022). So, the presence of flora and fauna on the island is seen as part of the basis for life on earth and therefore indispensable.

Another example in which the priority of nature is ensured derived from the interview with Marieke Smit. She says the following: *"In nature-inclusive building, for example. There are also quite strict rules on this or in the EIR. There are things you have to do to guarantee this, so it can be very diverse, isn't it? For example, research is carried out into birds that might be present during the breeding season, in which case no construction is allowed at all"* (Interview 1, Marieke Smit, 2022). The fact that one brooding bird could potentially bring an entire construction project to a halt shows the foundation of the biodiversity discourse from section 2.4 called 'nature as a priority' and indicates how great the influence of the island's flora and fauna is on the municipality of Nijmegen in the planning process.

A good example of how the biodiversity discourse 'nature as a priority' is not always rightly based on the mere presence of a bit of flora and fauna is shown in the interview with the consultant on green, water and climate adaptation:

"And yes, the moment you start using the argument of yes, but it's such a valuable area, then I'll knock that down with a bang: that's an absolutely worthless story, of course, because there's literally nothing on that piece of grass, because it's always been managed as low grass (...) there are some reptiles there and we're happy with that? No, I think that in terms of nature, we should strive for extra biodiversity values and thus really enhance the river landscape and the biotopes that go with it. I think you can really strengthen and expand it" (Interview 3, Consultant, 2022).

This shows that the presence of flora and fauna on the City Island can contribute to the creation of the biodiversity discourse 'nature as a priority', but that further research can result in a shift to the discourse 'sharing space with nature'. The consultant in green, water and climate adaptation also explains that attracting new bird species is very important, which seems to indicate the discourse 'nature as a priority', while by means of nature-inclusive construction, there is an increased chance of that attraction (Interview 3, Consultant, 2022). 'Sharing space with nature' is the biodiversity discourse which, in this case, can ensure a higher value of biodiversity and thus actually contains the underlying discourse 'nature as a priority'.

Another example on this is given by Martin-Paul Neys, who says the following: *"Well, I think it would be very cool if you created an island where the stork could have a colony in the summer, so that kind of thing, right? And perhaps the kingfisher, for example, or swallows, all kinds of river-related animals. And, I think it would be great if they could find a place on an island like that, combined with construction"* (Interview 2, Martin-Paul Neys, 2022). New species of birds and other animals are fundamental to the thought of building on the island in a way that the biodiversity can be increased as well i.e., fundamental to the biodiversity discourse 'sharing space with nature', while it is also fundamental to the discourse 'nature as a priority'. The flora and fauna of the City Island thus lay the fundamentals, as it were, for several biodiversity discourses, which were identified in section 2.4.

In a typical example of 'sharing space with nature' (2.4), the power of knowledge (section 2.2) underlying in this biodiversity discourse emerges. In fact, Martin-Paul Neys states that the river related biotopes of the City Island can merge perfectly with construction on the island in a way where the biodiversity can even be increased on a lot of levels. To strengthen this, he gives examples of greenery on the facades, the placement of nesting facilities and the creation of intermediate levels (Martin-Paul Neys, Interview 2, 2022). This knowledge comes from, among other things, the research that is done on the biodiversity in the area, as examined in section 4.3. The biodiversity discourse 'sharing space with nature' (2.4) is interwoven in this knowledge and therefore this discourse has a lot of power to influence, as confirmed by Foucault in section 2.2 (van Hout, 2020). The flora and fauna of the area therefore underlie this discourse, because the research on it was actually the starting point.

There are more examples to be given from the literature and interviews on how the flora and fauna of the City Island are fundamental to the creation of the different biodiversity discourses that were identified in section 2.4. However, most of the data give examples of flora and fauna being a fundament for the identification of the discourses on biodiversity in which either nature is the priority, or the space must be shared with nature. On this, enough examples are given in this paragraph. Cases in which the flora and fauna of the City Island contributed to the creation of the biodiversity discourse 'no room for nature' did not emerge from the analysis and are therefore not examined.

In short, the biodiversity discourses that were identified from the basis of the flora and fauna of the City Island are 'nature as a priority' and 'sharing space with nature'. The third discourse, which was identified in 2.4 called 'no room for nature' came to light in paragraph 4.2, under the heading of 'petitions'. These biodiversity discourses have influenced the municipality of Nijmegen in the planning process of the project the City Island by being interwoven in various influential discourses (and other aspects) like documents, reports, petitions and policies that the municipality of Nijmegen has included or used as a handhold in that planning process.

5. Conclusion

This study tried to answer the research question: *"How have biodiversity discourses influenced the municipality in the planning process of the City Island project?"*. For this purpose, qualitative research was conducted into the different influences on the municipality of Nijmegen and the existing biodiversity discourses that played a role in it.

First of all, the results showed that in the planning process of the City Island project, the municipality of Nijmegen was influenced by different types of documents and reports.

The ambition document (Department City Development, 2021) contains several plans and ideas concerning the biodiversity of the City Island and also parts of the SMP-N (Martens & Krijt, 2019) and the Toolbox nature-inclusive building (Arcadis, 2020). The biodiversity discourses from section 2.4 'nature as a priority' and 'sharing space with nature' are reflected in this document, as it is stated that the growth of biodiversity on the island is a spearhead and that this can be achieved by applying the SMP-N (Martens & Krijt, 2019) and the Toolbox nature-inclusive building (Arcadis, 2020), among others. The ambition document (Department City Development, 2021) was commissioned by the Nijmegen City Council and its contents serve as a guideline for the development and planning process of the City Island project.

The environmental vision of Nijmegen for the period 2020-2040 (Municipality of Nijmegen, 2020b) contains goals for Nijmegen in the future. In this vision the biodiversity discourses 'nature as a priority' and 'sharing space with nature' from section 2.4 are interwoven, because it is described that strengthening green corridors between (potential) natural pearls in Nijmegen must contribute to a growth of biodiversity (Municipality of Nijmegen, 2020b) and, moreover, nature-inclusive building is mentioned as one of the main methods. The vision serves as a starting point for the municipality of Nijmegen in planning processes, including the City Island project.

The Nature Pearl Report (Zollinger & Sierdsema, 2020) contains an overview of all (potential) natural pearls of Nijmegen, of which the City Island is one. In this report, the biodiversity discourse from section 2.4 called 'nature as a priority' comes to the fore as the report mainly focuses on strengthening the ecology and biodiversity by connecting the natural pearls, such as the area on and around the City Island. The report has not only been included in Nijmegen's environmental vision (Municipality of Nijmegen, 2020b), but has also been commissioned by the municipality of Nijmegen itself with the help of research.

The Nature-inclusive Development and Building Toolbox (Arcadis, 2020) is a manual for building and development in which nature is included in the plans. This document contains the biodiversity discourse 'sharing space with nature', as it specifically describes how building plans can be implemented in a way that also increases ecological value by means of smart adjustments to buildings and the addition of nesting boxes, green facades, etc. This toolbox serves as a guide for areas in the Waalsprong district (where the Stadseiland is located) and has meanwhile even been adopted by the municipality of Nijmegen as an obligation for future construction on the Stadseiland.

The biodiversity plan (Municipality of Nijmegen, 2020a) is a plan that was only recently drawn up, specifically for the theme of biodiversity. The biodiversity discourse 'nature as a priority' is visible in it, because the theme of biodiversity is discussed extensively and plans have been drawn up on how to guarantee and improve biodiversity, also on the City Island. The plan was drawn up in collaboration with the municipality of Nijmegen, among others, and thus serves as a kind of future vision for biodiversity.

The results have shown that the biodiversity discourses 'nature as a priority' and 'sharing space with nature' from 2.4 are intertwined and underlying in the relevant documents and reports found. The influence of these discourses on the municipality of Nijmegen in the planning process of the project the City Island is therefore exerted through these documents.

Secondly, the results have shown that the municipality of Nijmegen has also been influenced by various forms of discussion during the planning process of the City Island project.

For instance, several petitions have been set up by residents or other stakeholders during the entire planning process of the City Island that have been influential. The thinking behind setting up these petitions stems from two of the three biodiversity discourses identified in section 2.4. These are 'nature as a priority' and 'no room for nature'. Those in favour of green see nature on the City Island as a priority and those in favour of construction want the space to be used for new building instead of nature. It could be that there are people from both oppositions who know about nature-inclusive building (and that there is therefore also influence from the discourse 'sharing space with nature') and are therefore wrongly placed in one of the two camps, but this has not been investigated. Research did show that all petitions caused delays in the planning process and that a city survey resulted from this. As a result of the petitions, the Nijmegen municipality itself decided to carry out this urban survey. The results of the city poll were in favor of those in favor of green space, as 49 percent chose the option of '*Waalpark*' out of the four options (see 1.1 which one that is).

There were also extensive debates on the future of the City Island and the role that biodiversity should play in it. These debates have been attended by city councillors, the alderman, planners, landscape architects and ecologists. They each follow their own biodiversity discourse in their debates and presentations. Due to lack of evidence which biodiversity discourses underlie their presentations and debates, these have not been identified and linked to the previously identified discourses from section 2.4. However, members of the municipality itself were present at these debates in which the theme of biodiversity and the City Island project were discussed. The biodiversity discourses 'nature as a priority' and 'no room for nature' have thus been able to influence the municipality of Nijmegen in the planning process of the City Island project through petitions. Regarding the debates on biodiversity and the City Island this can not be concluded, due to the lack of evidence.

Thirdly, the results have shown that a number of different aspects have influenced the municipality of Nijmegen in the planning process of the City Island project as well, which can be linked to the policy on biodiversity.

In fact, the municipality of Nijmegen is influenced by the advice given by internal and external researchers and advisors in the field of biodiversity. The policy is that advice (based on research) on biodiversity in the field of the City Island is provided, which the municipality takes along in meetings and uses as a basis for determining frameworks or plans. In those advices, the biodiversity discourse 'sharing space with nature' (section 2.4) comes to the fore, because it is pointed out that the current quality of biodiversity is negligible and that biodiversity can be strengthened by means of nature-inclusive building. This means that the results from the studies can best be classified under that discourse.

The policy is also that there are certain guidelines, rules and obligations in the field of biodiversity, which influence the municipality of Nijmegen in the planning process of the City Island project. For example, there are certain guidelines in the EIR, the Toolbox nature-inclusive building is now a compulsory manual and there is a regulation for the protection of surrounding Natura 2000

areas. The biodiversity discourses 'nature as a priority' and 'sharing space with nature' (2.4) form the basis for drawing up and enforcing these guidelines, rules and obligations.

In addition, the Nijmegen City Council's policy on biodiversity is influenced by their own green character, which means that they influence themselves in the planning process of the City Island project. With a large number of green-oriented political parties in the city council, themes such as biodiversity have become more of a priority. These political parties also more often include experts in the field of ecology and biodiversity, who advise for example on nature-inclusive construction in the ambition document. The biodiversity discourses 'nature as a priority' and 'sharing space with nature' are therefore part of the ideology of part of the municipality of Nijmegen itself, which ultimately may decide on the development variant for the area.

The results based on various aspects of the Nijmegen municipality's policy have shown that the discourses 'nature as a priority' and 'sharing space with nature' (2.4) are the most intertwined. Through the studies and advices, the rules, guidelines and obligations and the green character of the municipality itself, the municipality of Nijmegen is influenced by these biodiversity discourses in the planning process of the City Island project.

The analysis of the results based on the flora and fauna of the City Island showed that the biodiversity in the area forms the basis for the creation of biodiversity discourses. Indeed, the presence of plants and animals in the area are the driving force behind the biodiversity discourses called 'nature as a priority' and 'sharing space with nature'. If there are endangered species in the development area or a breeding bird, the whole building process is halted. This means that in that case nature has priority over the building plans, and thus the basis is laid for the discourse 'nature as a priority'. In the area there are also parts with a very low quality of biodiversity, for example because there is one type of grass and only a few small animals. If this quality needs to be improved, an upgrade of the flora and fauna of that area can be achieved through nature-inclusive construction. This has given rise to the discourse 'sharing space with nature'. Both these biodiversity discourses have been implemented in the other results.

The presence of flora and fauna on the City Island have therefore been the basis for the creation of those biodiversity discourses, which thus were intertwined in all the other results. Some were more often interlaced than others.

In short, in the planning process of the project City Island, the municipality of Nijmegen has been influenced by the biodiversity discourses 'nature as a priority', 'sharing space with nature' and 'no room for nature', of which the first two emerged from the results concerning the flora and fauna of the City Island.

Firstly, the municipality has been influenced by the discourses 'nature as a priority' and 'sharing space with nature', because these were interwoven in the ambition document, the environmental vision, the nature pearl report, the toolbox nature-inclusive development and building and the biodiversity plan, which have all been important for the planning process.

Secondly, the municipality has been influenced by the biodiversity discourses 'nature as a priority' and 'no room for nature', as these formed the basis of the petitions and the city poll, which slowed down the planning process and gave the people a voice.

Thirdly, the biodiversity discourses 'nature as a priority' and 'sharing space with nature' influenced the municipality of Nijmegen in the planning process, because they emerged in the advice

provided, the regulations were based on them, and they reflected the green character of the municipality of Nijmegen itself.

The biodiversity discourses 'nature as a priority' and 'sharing space with nature' were by far the most prominent in the analyses of the results and therefore exerted the most influence on the municipality of Nijmegen in the planning process of the City Island project.

6. Discussion

6.1 Discussion on results

The following sections will focus on the discussion of the results of this study.

The application of a discourse analysis in this study resulted in good agreement with the predetermined expectations. A possible explanation is provided by the study by Hajer & Versteeg (2005) in section 2.2, which concludes that the anchoring of language in texts or other practices, for example, can be properly analysed by means of a discourse analysis, and for this study interviews, documents and articles were studied and analysed. Hajer & Versteeg (2005) also indicated that a strength of discourse analysis is the capacity to be able to answer 'how' questions, highlighting mechanisms (Hajer & Versteeg, 2005). This research was done by means of such a question and due to discourse analysis, the mechanism between the biodiversity discourses and their influence on the municipality of Nijmegen was perfectly highlighted.

This research is an addition to existing literature on the influence of biodiversity discourses on a governmental body, since previous studies have not reached conclusions about its influence specifically on the municipality of Nijmegen in the planning process of the City Island project. On the basis of this research, this influence can be investigated in other specific processes in the future. This research does have several limitations, more on this in section 6.4.

Results showed that in the planning process of the City Island project the municipality of Nijmegen was influenced by the three different biodiversity discourses 'nature as a priority', 'sharing space with nature' and 'no room for nature'. A possible explanation for this result is that they are in line with the pre-established expectations. The discovery of the first discourse is in fact in line with the preconceived expectations in the background (see 1.1) of this research and section 2.4, in which it was also found in a study of (Zanden, 2015). The discovery of the second discourse is also in line with the previously established expectations in the background (1.1) and because it was also established from an investigation by (Ottburg et al., z.d.). The finding of the third discourse is also in line with the expectations drawn up in the background (1.1) and section 2.4, in which this discourse was established by means of an article (Ubags, 2019).

A study from Chimombo & Roseberry (1998) (section 2.2) supports these findings on biodiversity discourses, because in his study is explained that discourse is the broad idea that language is structured according to various patterns that people's utterances follow when they participate in various activities of social life. Living together with nature is part of the activities of social life, so, the language around the discourses on living together with nature are structured according to the various patterns that people's utterances follow regarding this topic. so it is rather logical that the discourses on biodiversity that came to light in this thesis are classified in different directions (being 'nature as a priority', 'sharing space with nature' and 'no room for nature') of dealing with nature and therefore biodiversity.

The results of this research also showed that these biodiversity discourses exerted influence in many different ways, such as documents, petitions, opinions and policies. The finding of these different documents, petitions, opinions and policies is in line with the established expectations as described in the background of this research in section 1.1.

Another result is that the biodiversity discourses 'nature as a priority' and 'sharing space with nature' were by far the most prominent in the analyses of those results and therefore exerted the most influence on the municipality of Nijmegen in the planning process of the City Island project. A possible explanation for this result is offered by the research of van Hout (2020), which concludes that the power to influence comes from knowledge. Many of the results, in which the biodiversity discourse is established, are based on the research or advice of experts, who have a lot of knowledge in the field. Incidentally, one can conclude from this result that the municipality of Nijmegen understands the importance of biodiversity and also takes this into account when planning areas where building plans may collide with nature.

A striking result is that an advisor in green, water and climate adaptation stated to be in favour of building. This is something that initially sounds odd, but after receiving further explanation in the interviews, it became clear what the reason for this was. The biodiversity of the development area is not very high at the moment, but could become so through nature-inclusive building, among other things. A possible explanation for this result is provided by the background (1.1) of this research, in which the four designed development variants are outlined, which is very limited in information regarding the impact of the variants on biodiversity.

Another remarkable result is that the biodiversity discourse 'no room for nature' only appeared in section 4.2 under the heading 'petitions' and therefore this discourse only influenced the municipality of Nijmegen in the planning process of the City Island project through those petitions. A possible explanation for this could be that those who set up and signed the petitions had limited information available regarding the subject and were therefore unaware of the possibilities of continuing construction, but in harmony with nature.

The same applies somewhat to the result that no evidence of 'sharing space with nature' was found in petitions. Possibly, stakeholders had limited information available about the possibilities of construction and nature in combination. Another explanation could be that petitions are often only very much for or very much against something, since a group of people do not agree with something, and thus for the followers of the discourse 'sharing space with nature' there was no reason to set up a petition for this.

An interesting new finding arising from the results of this research is that some of the biodiversity discourses involved in the discussions on the future of the City Island are sometimes used inappropriately. In fact, it turned out that the biodiversity of the City Island is not at all at stake in the case of choosing one of the construction variants. In fact, by applying nature-inclusive construction with clever plant and animal-friendly adjustments, the biodiversity of the area can even be strengthened. This could not be concluded in advance from the available information about the possible design variants.

One result that has not been demonstrated in this study is the relationships between the various influences on the municipality of Nijmegen in terms of the degree of influence. There is no hard evidence that, for example, the documents exerted more influence on the municipality than the petitions. There are several possible explanations for this. The first is that some of the different influences cannot be compared as they differ enormously in the role they played within the planning process. The second is that there was a lot of overlap in the results of the interviews and literature

research from different sections. The third explanation is that the research was conducted using a 'how' question, which sometimes does not produce results that can be properly compared.

Another result that has not been demonstrated in this research is which biodiversity discourses were visible in the presentations and debates from section 4.2 and therefore also which influence these debates have had on the municipality of Nijmegen in the planning process of the City Island project. This would have been an interesting result since the alderman, some city councillors, landscape architects, urban planners and other relevant stakeholders were present at those debates. One explanation for this is that no evidence was found in the interviews and the literature review to indicate what the biodiversity discourses were within those debates and presentations.

6.2 Validity

In this paragraph, validity is discussed. Validity can be divided into two parts, namely internal and external validity (Vennix, 2016).

Internal validity means that the measuring instruments have worked sufficiently that the results are the desired ones (Vennix, 2016). For this research, a literature study and interviews were the measuring instruments. Through the literature study, documents were found that were useful for this research. The interviews, too, with the aid of interview guides, were well carried out and produced the right usable results to be able to answer the main question. In one interview, a question was answered differently than intended, but the answer afterwards still contained useful information for this study. Therefore, the measuring instruments worked as desired for usable research, which means that you can say that the research is internally valid.

External validity is about whether a study is generalizable (Vennix, 2016). This is not the case for this study, which means that it is not externally valid. The research has been carried out for one specific project and for one municipality. Research on other projects or municipalities can yield very different results. During the research and analyses, project-specific documents were found that are not relevant at all elsewhere. In addition, only three interviews were conducted with different people involved, which led to fairly unique results. Other respondents might have given different answers, which makes it impossible to generalise the research. However, the study can be used as an example for similar studies on this subject.

6.3 Reliability

Reliability of qualitative research can be examined by means of the degree of triangulation and replication in the research process (Vennix, 2016). Triangulation is about comparing multiple research methods such as the literature review and the interviews of this thesis. In this research, the results of the literature review were well juxtaposed with the results of the interviews, where a good reinforcing factor was present. Triangulation was also ensured within the interviewing method by conducting the interviews with respondents from different fields and with a different perspective. In this respect, the research was reliable. In addition, the degree of replication can also be tested. Due to lack of time, the research has not been replicated and has only been conducted once. However, clear interview guides have been included which could possibly be reused in an interview with similar respondents. The results would probably be fairly similar. Literature research within this theme could be replicated well. The same documents would most likely emerge from a single study. Furthermore, all results were carefully and systematically analysed and coded using Atlas.ti software (see ZIP file

enclosed with this bachelor thesis). In all likelihood, therefore, the same results would emerge from a similar investigation. It can therefore be concluded that the research was carried out reliably.

6.4 Limitations

This research has a few limitations.

One limitation is that three respondents is a relatively small number for a study such as this. More respondents could have contributed positively to the triangulation of knowledge and therefore to a more comprehensive chapter on results (chapter 4) of this thesis. Then, this would have resulted in better underpinned conclusions in chapter 5 of this thesis.

Another limitation is that the results in chapter 4 could have been very different if other respondents had been approached for the interviews. An interview with a city councilor from an extreme right-wing party would in all probability have yielded different results than the interview with Marieke Smit from the Green Left Party. To give another example, an interview with someone from the real estate sector who would like to build on the City Island would also have produced different results than the interview with the consultant in green, water and climate adaptation. However, the information on biodiversity in the documents found from the literature study are based on facts and would therefore have probably yielded the same results.

Due to the topicality of the subject, there was limited domain-specific literature available or relevant articles regarding the topic. More literature on the topic of this research could have resulted in more comprehensive findings and therefore better underpinned conclusions, because more results would have yielded from the literature study.

Due to limited time and availability of (potential) respondents, there was quite some time between the various interviews. As a result, not all literature research had been done yet and this research and the interviews were also intertwined. If all literature research had been completed before the first interview, the interview guides could have contained even more targeted questions, which would have provided better support for the results presented in Chapter 4 of this thesis. Moreover, this might also have yielded new results.

Another interesting limitation of this research is that the city council changed during the writing and execution of this research. This means that the composition of the council was different in the beginning than it is now. This may have caused the results to change during the research. One of the respondents was in the previous council at the start of this thesis, but fortunately kept her seat at the change of council, so this did not influence the results from that interview. In fact, it was an advantage that the respondent was in the previous council as it meant she was also involved in the planning process of the City Island project for the past four years.

The last limitation of this research was that the term 'City Island', which is the name given to the project of '*Veur-Lent*' and '*The Hoge Bongerd*', probably was a bit misleading. Despite an opportunity was given the get a comprehensive explanation on the term (see interview guides in sections 8.2 till 8.4 in the appendices), none of the interviewees talked specifically about the area '*The Hoge Bongerd*', but only about the development area on the '*Waaleiland*', on which '*Veur-Lent*' is located. The possible explanation for this is that the respondents linked the word 'island' in 'City Island' immediately to only the area around '*Veur-lent*', which is on an island and not '*The Hoge Bongerd*'. This

caused that no results about the biodiversity in this area yielded from the interviews. Would that have been the case, a better underpinned conclusion could be made about the whole project, as was introduced in the background in section 1.1 of this thesis.

6.5 Recommendation

Based on this research, recommendations can be made for future research.

After this research, questions remain unanswered about the extent to which certain biodiversity discourses have influenced the municipality of Nijmegen in the planning process of the City Island project. The extent of the different influences is difficult to compare. Future research could perhaps demonstrate this by making some adjustments in the application of the research methods, such as a more extensive interview guide with also questions about the comparisons between the influences of certain biodiversity discourses. Another recommendation is to perhaps change the main question of the research to "To what extent have biodiversity discourses influenced the municipality of Nijmegen in the planning process of the project the City Island?" or "Which biodiversity discourse has mostly influenced the municipality of Nijmegen in the planning process of the project the City Island?".

Another recommendation for tackling the limitations of this study is that the complete literature search and the search for relevant documents and reports first can contribute positively to an improvement and expansion of the results, on the basis of which better substantiated conclusions can be drawn. By following this order, the information found in the literature research and the relevant documents and reports can be better applied to the interview guides. This makes it possible to ask more specific questions regarding the results found and to deliberately focus on results from the interviews that are sufficient to answer the research question.

6.6 Reflection

After the writing of this thesis was done, a good reflection was made on the whole process.

Firstly, in this research, my position within the field had to remain neutral. As a student of Geography, Planning and Environment, you might be a little biased about this research topic, but the results had to be presented as neutrally as possible and the conclusions drawn fairly. Also, during the interviews, I took a neutral position and didn't ask questions that might have lead to an answer that is favorable to me personally.

Ethically speaking, the participants in my research were respected at all times and were always given the opportunity to opt out, no matter how much it may have complicated the research at the time. When approaching respondents for my interviews, I adopted a civilized and modest attitude and made sure that nothing was missing from my interview guide, so that the ethical justification of the interviews remained undisturbed. Fortunately, there haven't been any complications with my respondents.

During the study, it was decided to adjust interview guides slightly in preparation for new interviews. This was done on the basis of shortcomings in the first interview guide and new questions which arose during previous interviews. The decision was also made to add more specific questions preventively, based on an assessment of the respondent's knowledge.

The process of researching and writing has been a tough, but interesting rollercoaster. Doing research by your own has been quite heavy. In the beginning, finding an interesting topic even was harder than I initially thought. Finding respondents for my interviews, for instance, proceeded with difficulty in the beginning as well and keeping your head up at those times and moving on with other

pieces of your thesis is not easy. The gap between the research proposal and the final result is quite a big one, but still the time flies due to setbacks. The timespan from the start of writing the bachelor thesis until the final deadline is intensive, but despite those setbacks I was still able to finish the thesis in time so overall the time frame was well set. However, the fact that I have been really interested in my research topic, helped me through the process.

7. Bibliography

- Arcadis. (2020). *Toolbox natuurinclusief ontwikkelen en bouwen [Toolbox nature-inclusive development and building]*. <https://nijmegen.bestuurlijkeinformatie.nl/Document/View/e2411fbd-0310-4d37-81cf-817fd66c7d62>
- Chimombo, M., & Roseberry, R. L. (1998). *The Power of Discourse*. Routledge. <https://doi.org/10.4324/9780203053720>
- Department City Development. (2021). *Ambitiedocument Stadseiland [Ambition Document City Island]*. Municipality of Nijmegen. <https://nijmegen.bestuurlijkeinformatie.nl/Document/View/ef37f622-b651-43c0-8b08-26182967883c>
- ESPON. (2020). *SUPER – Sustainable Urbanization and land-use Practices in European Regions*. European Union. https://www.espon.eu/sites/default/files/attachments/ESPON%20SUPER%20Final%20Report%20-%20Main%20report_newtemplate.pdf#viewer.action=download
- Gee, J. P., & Handford, M. (2013). *The Routledge Handbook of Discourse Analysis*. Routledge. <https://www.routledge.com/The-Routledge-Handbook-of-Discourse-Analysis/Gee-Handford/p/book/9780415709781>
- Groen, M., & Boekenoogen, A. (2020). *Omgevingseffectenrapport [Environmental Impact Report]*. Royal HaskoningDHV. <https://nijmegen.bestuurlijkeinformatie.nl/Document/View/b777ba9e-ad81-4f30-a033-3ae0daf1cd2d>
- Hajer, M., & Versteeg, W. (2005). A decade of discourse analysis of environmental politics: Achievements, challenges, perspectives. *Journal of Environmental Policy & Planning*, 7(3), 175–184. <https://doi.org/10.1080/15239080500339646>
- Hout, L. (2020). *Exploring sustainability in the Dutch Healthcare system: a discourse analysis of the effect of COVID-19 on sustainability perspectives*. Radboud University. <https://theses.ubn.ru.nl/handle/123456789/10258>
- Jørgensen, M. W., Phillips, L. J., & SAGE Publishing. (2002). *Discourse Analysis as Theory and Method*. SAGE Publications. <https://doi.org/10.4135/9781849208871>
- Martens, T., & Krijt, N. (2019). *Soortenmanagementplan Nijmegen - De Waalsprong [Species Management plan - The Waalsprong]*. Gemeente Nijmegen. <https://www.waalsprong.nl/stadsnatuur/soortenmanagementplan/>
- Municipality of Nijmegen. (2020a). *Biodiversiteitsplan Nijmegen [Biodiversity plan Nijmegen]*. <https://www.wur.nl/web/file?uuid=f182ef8e-d3c0-49a6-9091-0b08fc4d1f12&owner=497277b7-cdf0-4852-b124-6b45db364d72&contentid=622910&elementid=20470283>
- Municipality of Nijmegen. (2020b). *Nijmegen, Stad in beweging [Nijmegen, the moving city]*. <https://www.nijmegen.nl/over-de-gemeente/dossiers/dossier-omgevingswet/omgevingsvisie-nijmegen/>

- Municipality of Nijmegen. (2022a). *Diensten [Services]*. Nijmegen.nl. <https://www.nijmegen.nl/diensten/>
- Municipality of Nijmegen. (2022b). *Raadsleden Nijmegen - iBabs RIS [City Council members - iBabs RIS]*. Nijmegen.nl. <https://nijmegen.bestuurlijkeinformatie.nl/People/Profiles/6d3a3013-00bb-480e-97ea-8518aaa0acf0>
- National government. (2017). *Wat is biodiversiteit? | Compendium voor de Leefomgeving [What is biodiversity? | Compendium for the Living Environment]*. Clo.nl. <https://www.clo.nl/indicatoren/nl1083-wat-is-biodiversiteit>
- Naturalis. (2022). *Waarom is biodiversiteit belangrijk? [Why is biodiversity important?]*. Naturalis.nl. <https://www.naturalis.nl/wetenschap/biodiversiteit/waarom-is-biodiversiteit-belangrijk#:~:text=Biodiversity%20forms%20a%20complex%20network,not%20could%20exist%20without%20biodiversity>
- Nijtmans, A. (2021). *Verzet tegen bouw op eiland Veur-Lent groeit: 'De stad heeft ademruimte nodig' [Opposition to construction on Veur-Lent island grows: 'The city needs breathing space']*. gelderlander.nl. <https://www.gelderlander.nl/nijmegen/verzet-tegen-bouw-op-eiland-veur-lent-br-groeit-de-stad-heeft-ademruimte-nodig~a0df514a/>
- NOS. (2015). *Nijmegen krijgt eigen eiland in de Waal [Nijmegen gets its own island in the river Waal]*. NOS.nl. <https://nos.nl/artikel/2072007-nijmegen-krijgt-eigen-eiland-in-de-waal>
- Ottburg, F., Snep, R., & Jones-Walters, L. (z.d.). *Natuur, omdat de stad het waard is [Nature, because the city is worth it]*. wur.nl. <https://www.wur.nl/nl/show-longread/Natuur-omdat-de-stad-het-waard-is.htm>
- Schie, M., & Evers, D. (2019). *Putting Dutch 'urban sprawl' in a European perspective*. Pbl.Nl. <https://www.pbl.nl/en/blogs/putting-dutch-urban-sprawl-in-a-european-perspective>
- SP Nijmegen. (2022). *Brede steun voor groen Veur Lent [Big support for a green village Veur-Lent]*. Nijmegen.sp.nl. <https://nijmegen.sp.nl/nieuws/2022/05/brede-steun-voor-groen-veur-lent>
- Stadseiland: Veur-Lent en Hoge Bongerd [City Island: area's Veur-Lent and Hoge Bongerd]*. (2022). Waalsprong.nl. <https://www.waalsprong.nl/lent/wijken/stadseiland-veur-lent-en-hoge-bongerd/>
- Suijkerbuijk, M. (2022). *Nijmeegse VVD komt met tegenprotest op actie van SP op Veur Lent: 'Waarom is hier nog niet gebouwd?' [VVD Nijmegen counter-protests SP's action on Veur Lent: 'Why hasn't anyone built here yet?]*. gelderlander.nl. <https://www.gelderlander.nl/nijmegen/nijmeegse-vvd-komt-met-tegenprotest-op-actie-van-sp-op-veur-lent-waarom-is-hier-nog-niet-gebouwd~a04a8ad5/>
- Ubags, W. (2019). *Voor Bolsonaro zijn boeren belangrijker dan bomen [For Bolsonaro, farmers are more important than trees]*. Oneworld.nl. <https://www.oneworld.nl/lezen/klimaat/klimaatonrecht/voor-bolsonaro-zijn-boeren-belangrijker-dan-bomen/>
- Vennix, J. (2016). *Onderzoeks- en interventiemethodologie [Research and Intervention Methodology]* (6de editie). Pearson Benelux B.V.

Veur-Lent en Hoge Bongerd [Area's Veur-Lent and Hoge Bongerd]. (2016). [Picture]. Waalsprong.nl. <https://www.waalsprong.nl/lent/algemeen/veur-lent-en-hoge-bongerd/>

Vries, S. (2021). *WHO benadrukt belang van groen voor mentale gezondheid [WHO highlights importance of green space for mental health]*. Naturetoday.com. <https://www.naturetoday.com/intl/nl/nature-reports/message/?msg=28262>

VVD protesteert voor snellere woningbouw [VVD protests for faster housing construction]. (2022). [picture]. vvd-nijmegen.nl. <https://vvd-nijmegen.nl/nieuws/vvd-protesteert-voor-snellere-woningbouw>







































World Commission on Environment and Development. (1987). *Our Common Future (The Brundtland Report)*. Oxford University Press. <https://www.are.admin.ch/are/en/home/media/publications/sustainable-development/brundtland-report.html>

















Zanden, J. L. (2015). *Victor Westhoff lezing 17 - Is er nog hoop voor de natuur? [Victor Westhoff lecture 17 - Is there still hope for nature?]* (1ste editie). Knnv Publisher. <https://www.uu.nl/nieuws/jan-luiten-van-zanden-veel-natuur-juist-behouden-dankzij-economische-groei>

Zollinger, R., & Sierdsema, H. (2020). *Natuurparels in de gemeente Nijmegen [Nature Pearls in the municipality of Nijmegen]*. Foundation RAVON. https://www.eis-nederland.nl/DesktopModules/Bring2mind/DMX/API/Entries/Download?command=core_download&entryid=967&language=nl-NL&PortalId=4&TabId=563#:~:text=Binnen%20de%20gemeente%20Nijmegen%20zijn,tussen%20de%20natuurparels%20en%20stapstenen.

8. Appendices

8.1 Codebook

	Name	Grounded	Density	Groups
○	◇ Geese		1	0 [Biodiversity - Fauna]
○	◇ Kingfisher		1	0 [Biodiversity - Fauna]
○	◇ Bats		2	0 [Biodiversity - Fauna]
○	◇ Bees		2	0 [Biodiversity - Fauna]
○	◇ Animal species		15	0 [Biodiversity - Fauna]
○	◇ Partridge		2	0 [Biodiversity - Fauna]
○	◇ Birds		6	0 [Biodiversity - Fauna]
○	◇ Swallow		1	0 [Biodiversity - Fauna]
○	◇ Cows		2	0 [Biodiversity - Fauna]
○	◇ Species of insects		1	0 [Biodiversity - Fauna]
○	◇ Stork		6	0 [Biodiversity - Fauna]
○	◇ Corncrake		1	0 [Biodiversity - Fauna]
○	◇ Mammals		1	0 [Biodiversity - Fauna]
○	◇ Reptiles		1	0 [Biodiversity - Fauna]
○	◇ Ecosystem		1	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ Nature		17	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ Life on earth		4	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ High quality nature		2	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ River		14	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ Species		2	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ Ecological zones		1	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ Biotope		6	0 [Biodiversity - Fauna] [Biodiversity - Flora]
○	◇ Nature protection		3	0 [Biodiversity - Fauna] [Biodiversity - Flora] [Policies]
○	◇ Importance of biodiversity		52	0 [Biodiversity - Fauna] [Biodiversity - Flora] [Policies]
○	◇ Sustainability		3	0 [Biodiversity - Fauna] [Policies]
○	◇ Grass		5	0 [Biodiversity - Flora]
○	◇ Plants		9	0 [Biodiversity - Flora]
○	◇ Tree		2	0 [Biodiversity - Flora]
○	◇ Flowers		1	0 [Biodiversity - Flora]
○	◇ Lawn		2	0 [Biodiversity - Flora]
○	◇ Green		22	0 [Biodiversity - Flora]
○	◇ Delay in planning process		3	0 [Debates]
○	◇ Debates about the City Island...		6	0 [Debates]
○	◇ Trending topic		1	0 [Debates]
○	◇ Housing shortage		2	0 [Debates]
○	◇ Petition against building		3	0 [Debates]
○	◇ Petition for building		3	0 [Debates]
○	◇ Nature organisations		1	0 [Debates]

○ ◆ Local residents		11	0 [Debates]
○ ◆ Discussion		4	0 [Debates]
○ ◆ City survey		7	0 [Debates] [Policies]
○ ◆ Nature pearls report		3	0 [Documents]
○ ◆ EIR		3	0 [Documents]
○ ◆ Ambition Document		4	0 [Documents]
○ ◆ Environmental Vision		9	0 [Documents]
○ ◆ Policy document		1	0 [Documents]
○ ◆ Nature Inclusive Building Polic...		4	0 [Documents]
○ ◆ Biodiversity plan		4	0 [Documents] [Policies]
○ ◆ Green policy plan		2	0 [Documents] [Policies]
○ ◆ Research		2	0 [Policies]
○ ◆ Nature 2000 Area		4	0 [Policies]
○ ◆ Nature-inclusive building		11	0 [Policies]
○ ◆ Tenders		2	0 [Policies]
○ ◆ Governmental policy		19	0 [Policies]
○ ◆ Biodiversity Advice		6	0 [Policies]
○ ◆ Green party		8	0 [Policies]
○ ◆ Municipality		2	0 [Policies]

8.2 Interview guide city councilor

Interview 1 with Marieke Smit, City Councilor of Nijmegen

Introduction

Hi, how are you doing? My name is Cas Geurtzen and I'm a GPE student of the Radboud University. Thank you very much for your time and that you're letting me interview you for my Bachelor Thesis. The topic of my Bachelor Thesis is the influence of biodiversity discourses on the municipality of Nijmegen in the planning process of the 'City Island' project? Are you familiar with the terms 'biodiversity' and 'discourses' & the 'City Island' project? If not, I will explain them shortly. Firstly, I will ask you a few open questions about you, your profession and your relation to the subject. After that, I will ask a few open questions about my topic on which you can explain your thoughts and point of view. The interview will take probably 30 minutes. There are no wrong answers and you can skip questions if you don't want to answer them. You can stop the interview at any time and ask me to delete the recording. I will respect your choice in that case no matter what your reason is. Thanks again for your time and cooperation, it is highly appreciated. If you have no further questions I will put on the recording device and start the interview. Is that okay for you?

Questions Interview:

Introductory part:

- *Who are you and what is your profession?*
- *In what way are you connected to the municipality of Nijmegen and for how long?*
- *What is your relationship to the 'City Island' project?*
- *How important is the topic of biodiversity for you personally?*
 - *Why?*

Content part:

- *What has been your role in the past years within the planning process of the 'City Island' project?*
- *What is the relationship of your role at the municipality of Nijmegen to the concept of 'biodiversity'?*
- *To what extent is the degree of your personal interest in biodiversity noticeable during your work for the municipality of Nijmegen?*
 - *Where do you notice this?*
- *To what extent is the subject 'biodiversity' considered important among your colleagues (at the municipality of Nijmegen)?*
- *Is the extent of this importance noticeable among your colleagues when planning projects such as the 'City Island' project?*
 - *How do you notice this?*
- *Are certain frameworks established in the field of biodiversity within your work field for projects such as the 'City Island' project?*

- *If so, which frameworks are established in the field of biodiversity?*
- *On the basis of what knowledge are these frameworks established, do you think?*
- *Are these frameworks established by the municipality itself or, for example, from other administrative levels?*
 - *Can you tell us more about this?*
- *Do you see the established frameworks for biodiversity in the planning process of the 'City Island' project so far?*
- *Are there certain discourses on biodiversity that have influenced the setting of certain frameworks?*
 - *Can you mention them?*
- *To what extent do you think the municipality of Nijmegen has been influenced by these discourses/frameworks in the field of biodiversity in the planning process of 'the 'City Island' project so far?*
 - *How do you see this?*
- *Do you think that there are other stakeholders in this planning process who can influence the importance of biodiversity?*
- *Do you have anything else you would like to share regarding this topic that I forgot to ask about?*

Thank you for the interview. I will only use the information gathered for researching purposes and you will remain anonymous at any time if you want to. I could send you the results of my research of course by your demand as well. Thank you and enjoy the rest of your day.

8.3 Interview guide architect

Interview 2 with Martin-Paul Neys, Architect & Head of the ACN

Introduction

Hi, how are you doing? My name is Cas Geurtzen and I'm a GPE student of the Radboud University. Thank you very much for your time and that you're letting me interview you for my Bachelor Thesis. The topic of my Bachelor Thesis is the influence of biodiversity discourses on the municipality of Nijmegen in the planning process of the 'City Island' project. Are you familiar with the terms 'biodiversity' and 'discourses' & the 'City Island' project? If not, I will explain them shortly. Firstly, I will ask you a few open questions about you, your profession and your relation to the subject. After that, I will ask a few open questions about my topic on which you can explain your thoughts and point of view. The interview will take probably 30 minutes. There are no wrong answers and you can skip questions if you don't want to answer them. You can stop the interview at any time and ask me to delete the recording. I will respect your choice in that case no matter what your reason is. Thanks

again for your time and cooperation, it is highly appreciated. If you have no further questions I will put on the recording device and start the interview. Is that okay for you?

Questions Interview:

Introductory part:

- *Who are you and what is your profession?*
- *In what way are you connected to the municipality of Nijmegen and for how long?*
- *What is your relationship to the 'City Island' project?*
- *How important is the topic of biodiversity for you personally?*
 - *Why?*

Content part:

- *What is the relationship of your profession to the concept of 'biodiversity'?*
- *To what extent is the degree of your interest in biodiversity noticeable during your work?*
 - *Where do you notice this?*
- *To what extent is the subject 'biodiversity' considered important among your colleagues?*
- *Is the extent of this importance noticeable among your colleagues when planning projects such as the 'City Island' project?*
 - *How do you notice this?*
- *Are there certain biodiversity requirements that must be met in projects like the city island?*
- *If so, which requirements are established in the field of biodiversity?*
- *On the basis of what knowledge are these frameworks established, do you think?*
- *Are these frameworks established by the municipality itself or, for example, from other administrative levels?*
 - *Can you tell us more about this?*
- *Do you see the established frameworks for biodiversity in the planning process of the 'City Island' project so far?*
- *Are there certain discourses on biodiversity that are relevant to your field of work?*
 - *Can you mention them?*
- *To what extent do you think the municipality of Nijmegen has been influenced by these discourses/frameworks in the field of biodiversity in the planning process of the 'City Island' project so far?*
 - *How do you see this?*
- *Do you think that there are other stakeholders in this planning process who can influence the importance of biodiversity?*
- *What other influences do you think have been on the municipality of Nijmegen?*
- *Do you have anything else you would like to share regarding this topic that I forgot to ask about?*

Thank you for the interview. I will only use the information gathered for researching purposes and you will remain anonymous at any time if you want to. I could send you the results of my research of course by your demand as well. Thank you and enjoy the rest of your day.

8.4 Interview guide consultant in green, water & climate adaptation

Interview 3 with a Consultant in Green, Water & Climate Adaptation

Introduction

Hi, how are you doing? My name is Cas Geurtzen and I'm a GPE student of the Radboud University. Thank you very much for your time and that you're letting me interview you for my Bachelor Thesis. The topic of my Bachelor Thesis is the influence of biodiversity discourses on the municipality of Nijmegen in the planning process of the City Island project. Are you familiar with the terms 'biodiversity' and 'discourses' & the City Island project? If not, I will explain them shortly. Firstly, I will ask you a few open questions about you, your profession and your relation to the subject. After that, I will ask a few open questions about my topic on which you can explain your thoughts and point of view. The interview will take probably 30 minutes. There are no wrong answers and you can skip questions if you don't want to answer them. You can stop the interview at any time and ask me to delete the recording. I will respect your choice in that case no matter what your reason is. Thanks again for your time and cooperation, it is highly appreciated. If you have no further questions I will put on the recording device and start the interview. Is that okay for you?

Questions Interview:

Introductory part:

- *Who are you and what is your profession?*
- *In what way are you connected to the Municipality of Nijmegen and for how long?*
- *What is your relationship to the 'City Island' project?*
- *How important is the topic of biodiversity for you personally?*
 - *Why?*

Content part:

- *What has been your role in the past years within the planning process of the City Island project?*
- *What is the relationship of your role at the City of Nijmegen to the concept of 'biodiversity'?*
- *To what extent is the degree of your personal interest in biodiversity noticeable during your work for the municipality of Nijmegen?*
 - *Where do you notice this?*

- *To what extent is the subject 'biodiversity' considered important among your colleagues (at the municipality of Nijmegen)?*
- *Is the extent of this importance noticeable among your colleagues when planning projects such as the City Island project?*
 - *How do you notice this?*
- *Are certain frameworks established in the field of biodiversity within your work field for projects such as the City Island project?*
- *If so, which frameworks are established in the field of biodiversity?*
- *On the basis of what knowledge are these frameworks established, do you think?*
- *Are these frameworks established by the municipality itself or, for example, from other administrative levels?*
 - *Can you tell us more about this?*
- *Do you see the established frameworks for biodiversity in the planning process of the City Island project so far?*
- *Are there certain discourses on biodiversity that have influenced the setting of certain frameworks?*
 - *Can you mention them?*
- *To what extent do you think the municipality of Nijmegen has been influenced by these discourses/frameworks in the field of biodiversity in the planning process of the City Island project so far?*
 - *How do you see this?*
- *How much influence do you think the advice of you and your closely involved colleagues has on the municipality of Nijmegen?*
- *To what extent has that influence been noticeable in the planning process of the City Island project?*
- *Is there anything else you would like to share regarding this topic that I forgot to ask about?*

Thank you for the interview. I will only use the information gathered for researching purposes and you will remain anonymous at any time if you want to. I could send you the results of my research of course by your demand as well. Thank you and enjoy the rest of your day.