Embedding Spatial Quality:

the case of national canals in the Netherlands

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WAGENINGEN UR
For quality of life

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Preface

Writing a thesis in Spatial Planning is a challenge. There are many subjects that can serve as a basis for writing a thesis: Land Development, Urban Sprawl and Urban Networks, Landscape Ecology and Nature, Water Management, Heritage Management, Transport Mobility and Infrastructure or Land Policy. There is an invincible task to choose one of these topics follows. This report is my final examination to meet the requirement for Master of Science. It is an important document that needs to be instructive and educational but foremost, fun.

My interest has always been towards infrastructural planning and water management. I also was eager to embed practise in my academic thesis in order to connect both fields. After a meeting with Jan-Willem de Jager, Rijkswaterstaat could offer me an interesting topic covering including both preferences of infrastructure and water. Despite the long distance to the office (>2 hours by public transport or +/- 1,5 hour by car), I was eager to start my thesis. Note that I mainly worked at the University of Wageningen.
For me (and I think many other students), canals are a relatively new concept. Of course, Dutch people are often familiar with canals, but many – even me, as being a planner – are not familiar with policies and processes specifically focussing on canals. Infrastructure often perceived to be connected to roads or networks of roads but not on canals. During my thesis I have learned to see a canal as something that is being thought of instead of rectilinear structures in the landscape.

The report is written as preliminary research to the *Kijk op de Ruimtelijk Kwaliteit van Kanalen*. The prospective report, elaborating on spatial quality of canals, is an addition on the report *Kijk op de Ruimtelijke Kwaliteit van Snelwegen* (2012), which is an analyses of the spatial quality of all (national) highways in the Netherlands. Approximately in 2014, a sequel on this report of spatial quality on highways is being made, then focussing on canals. This thesis researches how spatial quality can be embedded in guidelines through analysing scientific debates, policy debates and communities of practise.

With much delight I present you this report.

Enjoy reading the thesis,

Gaston Franssen

Summary

The first water-ways perceived as canals are water structures in the Old-Egypt or Mesopotamia (Brolsma, 2010). In the Netherlands canals developed at the time of the Roman Empire as being connections between rivers (*ibid.*). The Fossa Corbulonis is considered to be the first canal in the Netherlands. The canal connected the river Rhine and Meuse (Haalebos &Willems, 1999). For many years canals were primarily used for their utilitarian values as, for example, the transportation of goods or soldiers. In time canals have become part of the Dutch landscape. Besides utilitarian values, the perception of canals has changed. Elements originating in high user-value for shipping got multiple understandings. For example, the broad water structure – originally created for shipping – attracts walkers and cyclists. Recreation paths have arisen due to the growing demand for recreation near water structures. Another example is that canals gained ecological value. If a canal is ecological optimized (e.g. if it has flattened shores), a diverse set of animals can use the canal for drinking or other purposes. Due to societal demands to take the surroundings of a canal into account, projects on canals have become multi-faceted. What is considered to be important is not unambiguous. Therefore the Directorate-General for Public Works and Water Management (hereafter: Rijkswaterstaat) has enquired a research to explore how spatial qualities can be embedded in processes on canals.

The inclusion of spatial quality in projects on canals is connected to shifts in paradigm in infrastructure, water management and planning in which plans have become total designs instead of line-oriented (Heeres et al., 2012). During the last decades infrastructure and planning have become closer related (Struiksma & Tillema, 2010). The technocratic approach in infrastructure has widened its scope to an area-based approach aiming not only for the supply of technical demands but also includes taking environmental aspects of the wider area near the infrastructural element into account (*ibid.*).

Spatial quality has been constructed differently over time. The concept is first seen in 60 B.C. by Vitruvius, a Roman architect and engineer. Vitruvius defined spatial quality user-value, future-value and amenities. Although in contemporary practises the definition is the same, spatial quality has shifted its attention from esthetical values to labour costs under neoclassical perspectives (Assink & Groenendijk, 2009) towards an understanding without meaning (Miciukiewicz et al., 2010). In contemporary literature spatial quality is argued to be blank (Van Assche & Jacobs, 2003). To be able to construct a concept, scholars discuss various approaches as, often connected to governance or participation. Other scholars argue that spatial quality can be described but not

valued (Termorshuizen & Opdam, 2009) while others perceive the concept to be a social construction. In literature there seems to be no consensus on how to embed spatial quality.

A small set of policies is of influence on the conceptualization of spatial quality. On world level the UNESCO world heritage provides a framework in which developments need to take place. On European level there are no policies that specifically elaborate on spatial quality. Policies discuss the landscape, often focussing on (sectorial) networks of, for example, ecology or infrastructure. On national level the environment is point of focus in laws which are of influence on spatial quality (e.g. *Omgevingswet*; *Tracéwet*). But also at national level, spatial quality is not literally discussed. Spatial quality can first be seen in (internal) guidelines of Rijkswaterstaat. The Directorate-General has various internal guidelines for embedding spatial quality (e.g. *Kader Ruimtelijke Kwaliteit en Vormgeving*, 2012; *Kijk op de Ruimtelijke Kwaliteit van Snelwegen*, 2013). Most of the policy-documents are developed less than two years ago. The documents often focus on highways and not on canals. Whilst some of the internal policy-documents are obliged (*Kaders*), some of them are not obliged (*Handreikingen*) and considered as a guideline for knowledge input.
Policies also elaborate on spatial quality as a balance in user-value, future-value and amenities. More specific documents (e.g. ambition documents or landscape plans) show spatial quality to be severely connected with design and aesthetics. Hence, design is a mean to reach spatial quality. In policies it is often discussed as an end to conceptualize spatial quality, often legitimized by an expert (e.g. an architect).

Despite various policy-documents incorporating the official definition of spatial quality, the implementation on regional level shows different results. In many cases the same concept (of spatial quality) has a different elaboration, resulting in different effects on projects. Another aspect that increases regional differences in canal project is that the focus of spatial quality in policy-documents is often on the surrounding area (widening the scope of the canal) and not on the line (trajectory of the canal). Due to diverging interpretations at regional levels, single canals have gained multiple qualities based on institutional boundaries. For example, whilst ecological shores are considered to be a quality of the canal in one region, it can be valued differently at another regional service. The lack of knowledge at regional level has led to many separate interruptions on canals whilst many canals are constructed as inter-regional and coherent elements in the landscape.

Summarized, in time spatial quality gained several meanings. It is argued that in contemporary society the concept involves nothing (Miciukiewicz et al., 2010) and can be considered to be a fuzzy

planning concept that is mainly discussed in Dutch literature (Janssen-Jansen et al., 2011) Scholars have searched how to conceptualize spatial quality (being user-value, future-value and amenities). It is interesting to notice that literature focusses on the content of spatial quality rather than discussing on a procedural conceptualisation of the concept. Scientific debates do not focus on the organisational context in which spatial quality is framed.

Policies also refer to the formal definition but do not have a method to conceptualize spatial quality. The policies discussing spatial quality are focussed on national level and are seldom embedded in regional services. Despite attempts to perceive spatial quality as a holistic understanding, policies often connect the concept with design. Emphasizing on design is a way to make spatial quality more concrete.

In practise the concept is not always included in projects, although sometimes it is hidden within the design or in other sectorial elaborations. Many governmental officers provide the concept with a free interpretation, not aware of the formal definition. Moreover, technocratic approaches have led to misconception that embedding spatial quality would always increase the budget. During projects, the main thought is that goals need to be reached. To enhance spatial quality has never been an official goal of a canal project. Because in general only official goals are embedded in the budget, when governmental officials need to focus on spatial quality – considered to be an extra aspect – time and financial budgets are perceived to be at stake.

At first, guidelines need to be known amongst governmental officials in order to have effect in planning practises. Due to the enormous amount of guidelines at Rijkswaterstaat (+/- 500) it is considered to be questionable to increase the amount of guidelines. Secondly, spatial quality is already included in plans but not always referred to as spatial quality. The inclusion has a rather sectorial understanding, focussing on either history, ecology or other sectors. Thirdly, it is not possible to objectify subjective understandings of a concept in practise (e.g. defining spatial quality by a landscape architect). Guidelines need to focus on the process in order to be able to define spatial quality. In the process a (landscape) architect can have a large role, but not a function as an expert. Architects need to be able to disconnect spatial quality from purely aesthetics. Design is a mean to operationalize spatial quality, not an end. Only through a process spatial quality can be defined at a given moment, at a given time. Fourthly, the conceptualization of spatial quality needs to be closer connected to society by means of political representatives. Finally, ‘dry’ and ‘wet’ discourse need to exchange knowledge in order to improve the process. Whereas spatial quality is relatively new in the wet (canal) discourse, taking the surroundings into account – the most dominant conceptualization of spatial quality – has already been implemented in dry discourse.

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Introduction

Almost no new canals are developed in the last decade, but many existing canals are redeveloped. The Directorate-General for Public Works and Water Management (hereafter: *Rijkswaterstaat*) is responsible for (re)development projects and maintains and improves national water structures in the Netherlands. Rijkswaterstaat strives for an integrative area-based approach and puts increasingly emphases on the landscape. The ambition to embed the wider area in projects – not only the infrastructural line – is widely shared and embedded in several policies. Spatial quality is one of the concepts that are used to conceptualize this ambition. Conceptualising spatial quality faces severe challenges in practise. Governmental officials have argued that current policy-frameworks are insufficient to work with. They have troubles with the translation from policies to the operationalization of spatial quality. Because taking the surroundings has become increasingly important in society, Rijkswaterstaat has enquired a research that explores how to embed spatial qualities of canals into the process on the (re)development of national canal in the Netherlands. This research is connected to the fields of water management, infrastructure and spatial planning which have become increasingly connected (Struiksma & Tillema, 2010). This research focusses on Dutch policies, but similar policies with linking concepts are seen in other countries (Rohde et al., 2006).

Various aspects are at the heart of changes in the approach to widen the scope of infrastructural projects: (1) environmental awareness has increased the attention to environmental change, (2) the introduction of neo-liberal governance thinking including societal partners to the process, (3) changes in society have changed the perception of the landscape, (4) the economic crisis has led to reconsidering income and expenditure of governments, (5) more involvement on European level has issued a more strategic area-based approach and (6) public's awareness of a shortage on space which has led to innovative solutions of the usage of space (Heeres et al., 2012).

Let's start at the beginning with a short elaboration on how canals have become part of the Dutch landscape.

The development of canals in the Netherlands

A canal is defined as a man-made waterway. In the beginning as well as in the end is a lock. Therefore the water-level is regulated by men. In a variety of countries canals have been part of the landscape for many years. The first water ways considered to be canals or artificial rivers are water

structures in the Old-Egypt or Mesopotamia. The aim of these canals was to bring water towards the fields and canals were mainly used as irrigation systems. Another famous example of a canal is the Grand Canal of China which is one of the longest in the world (1609 kilometres long). The oldest parts of the canal already emerged over 1400 years ago (Xiaolong et al., 2009). Whereas the water structures in the Old-Egypt are used for irrigation purposes, the Grand Canal of China focusses on transportation.

In the Netherlands shipping took place in natural water ways (e.g. rivers) for many centuries. In the time of the Roman Empire several emperors created small-scale connections between natural water ways which can be considered to be the first canals in the Netherlands. These water structures were made in order to be able to quickly move their troops over water. The Fossa Corbulonis is one of the first examples of these river connections. This Roman canal connected the river Meuse and Rhine with each other. Excavations show that the canal should have been approximately 13 meters wide and 2 till 3 meters deep (Brolsma, 2010). The Fossa Corbulonis has been constructed around the year 50 A.D. The total length of the canal was 23 Roman miles (31 kilometres). In his book (Annales, XI), Tactitus wrote "*Ut tamen miles otium exueret, inter Mosam Rhenumque trium et viginti milium spatio fossam perduxit, qua incerta Oceani vitarentur*". Translated: "to keep his soldiers away free from the sloth, he dug a canal of 23 miles in length between Meuse and Rhine, in order to avoid the uncertain perils of the ocean". Another example of a new canal in the same era (also described by Tactitus in Annales II) is the Fossa Drusiana in the Rhine delta.
Several centuries later, Charlemagne (approximately 742-814) wanted to create large scale connections by canals throughout his empire. However, due to technical difficulties he did not succeed (Brolsma, 2010). In the period hereafter there were no major developments on canals for many centuries. Only from the 16th and 17th century canals made their appearance on large scale due to preceding economic developments (Brolsma, 2010). In 1561 a canal of 30 kilometres had been realized, connecting Brussels with the Scheldt. In the 17th century the Netherlands developed economically rapid. The need to use canals to for transporting goods has grown tremendously (*ibid.*). Canals or sometimes rivers as well, were economically exploited using towing paths. These paths are tracks next to the water ways which are used by horses that carry (tow) the ship. In the Netherlands this system has expanded to a total of 658 kilometres of towing paths, constructed in the period 1632 to 1665, initiated by the government as well as private investors.
In the next century almost no canals have been constructed in the Netherlands, in contradiction to, for example, France or England.

In the 19th century, canals in the Netherlands and other parts of (Western) Europe began to emerge during the French Revolution under direction of Napoleon Bonaparte, the emperor of Europe during 1804-1814. Napoleon desired to have better connection between important cities and harbours in order to ships goods from the Meuse area cheaper and faster towards the main harbour in Antwerp. At that time policies were based on utilitarian values (Jacobs & Buijs, 2011). Canals were perceived as a symbol of controlling nature (Vos & Meekes, 1999). In the 19th century also in other countries many canals were developed (e.g. parts of the Grand Canal du Nord).
The 20th century is influenced by major societal and political differences that have had an effect on the development of canals (Brolsma, 2010). In the beginning of the century, economic developments of the 19th century prolonged the construction of canals (*ibid.*). Due to World War I (1914 – 1918) all projects on canals were cancelled or temporarily stopped. After WO I projects on canal were continued and new projects remerged (e.g. completion of the Canal Wessem-Nederweert, Twente Canals, Juliana canal) until World War II (*ibid.*). In the 1960s major economic developments again led to a remerge of the development of canals.

The total amount of Dutch amount of canals in the Netherlands is 550 kilometres of Main Transport Networks (*Hoofdtransportas)*, 900 kilometres of Main Water Ways (*Hoofdvaarweg*) and 5200 kilometres of Other Water Ways (*Overige vaarwegen*).

From a historical point of view, canals, as well as their surroundings (e.g. dikes) are embedded in Dutch culture. Canals have become part of the Dutch national identity (Wiering & Immink, 2006).
They are perceived to be an important landscape characteristic, as witnessed by different policy-documents (e.g. the Trans-European Inland Waterway Network (EU, 1996); the European Agreement on Main Inland Water Ways (ECE, 1996) and until recently in the Strategic View on Spatial Planning (2012)). Canals and other water structures are of importance to numerous public and private stakeholders. Although water can have a great numbers of usages (e.g. food, energy, health, etc.), canals in the Netherlands their selves are mainly used for transportation. Influenced by current globalisation, the need for large-scale transportation (including ships) is expected to emerge (Banister, 2008). The surroundings of canals have numerous other functions (e.g. recreation, agriculture, nature, etc.).

Nowadays there are almost no new canals created. The only exception is a diversion of the Zuid-Willemsvaart near ‘s-Hertogenbosch in which 9 kilometres of new water way is being constructed.

Despite the creation of new canals has nearly stopped, existing canals are redeveloped in order to meet contemporary demands for, for example, shipping, recreational and other functions. The planning processes in which these developments take place have changed.

A growing attention for spatial quality

The emerge of different paradigms

The ambition to embed spatial quality in canal projects is a result of considering the canal's surroundings which originate in changing views on water management, infrastructure and spatial planning.

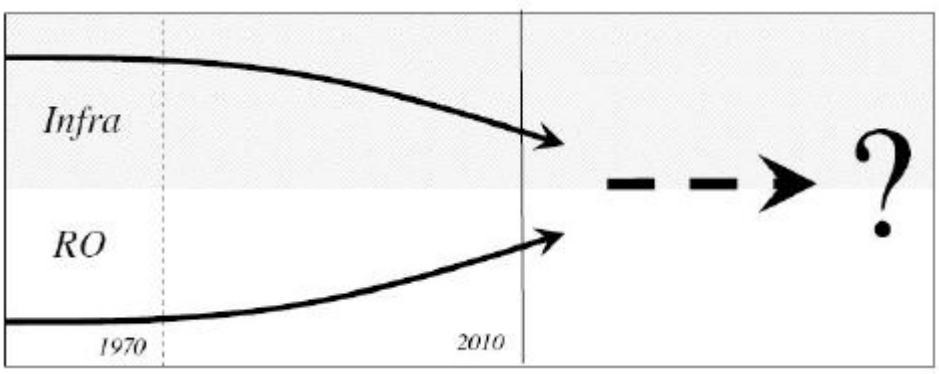
The view on water management changed, influenced by "triggering events" (Wiering & Immink, 2006; p. 432), that is, flooding or other threats related to water. Water problems are never homogenous or consistent over time (Biswas, 2004). As the Netherlands is situated, for a large part, below sea level, they are known for battling the water, but also living with the water (Wiering & Immink, 2006) or controlling the water (van der Brugge et al., 2005). The shift in paradigm in water management already emerged in the 1970s with an integration of water- and nature management (Van der Brugge et al., 2005). The water system has become unsustainable, that is, by a reduction of water safety, management costs and ecological damage. These problems have been acknowledged. Water management is in a transition which started already in the 1970s from adapting to water towards a participatory approach in water management (Van der Brugge et al., 2005). Especially in the last two decades water policies and management changed a lot (Ferreyra et al., 2008; Wiering & Arts, 2006). Water management has become more than purely managing water (Wiering & Arts, 2006).

Until the late 20th century water management has been a field of mainly technocratic expertise (Bosch & Van der Ham, 1998; Lintsen, 2002). Lots of water flows are canalized with protective measures (e.g. dikes, dams) alongside the water (Van der Brugge et al., 2005).

Contemporary views on water management show shifts in paradigm towards a more holistic understanding, beyond technological fixes (Jacobs & Buijs, 2011). Spatial quality is a relatively new concept in water management while it has been discussed in planning literature for over a decade. Not only technical results of the project need to be taken care of, also the implementation and communication during the political process will enhance public support of interruptions on canals (Lewicki & Gray, 2003). But often contemporary research still focusses on technical aspects relating to canals, such as sediment transports (e.g. Kelderman, 2012) or hydraulic surface water models (Prinsen & Becker, 2011).

According to Van der Brugge et al. (2005) the shift in paradigm in the Netherlands is influenced by fundamental water problems (e.g. flood risks). As they argue, there is a foundation for this. Policies are influenced by increasing spatial claims during the 20th century (e.g. agriculture, industry, and infrastructure) originated by economic growth and changing lifestyles. Spatial developments have become interlinked with financial aspects. The changing nature of water management is developed step by step already several years ago (e.g. Rijkswaterstaat, 1964). Other National Memoranda on Water Policies of Rijkswaterstaat (1982; 1989; 1998) show a shift towards an area-based development. This change is also visible in contemporary policy-making processes regarding water. Not only in the Netherlands, but the shift is strengthened by European policies that also focus on controlling and maintaining water quantity, taking water quantity as well as water quality into account (Wiering &Immink, 2006). Dutch policies incorporated metaphors to express the widening scope of water management (e.g. Room for the River). De Groot & De Groot (2009) argue that focussing on water quality and quantity in the Netherlands emerged by a shift from fighting the water to working with the water. In contemporary practises the quality of the landscape is one of these important factors that contribute to working with the water (Buijs, 2009). Such a paradigm shift does not simply refer to a change in methods, but to a change in the underlying assumptions that are shared by an epistemic community or stakeholders (Pahl-Wostl et al., 2007). Therefore a shift in paradigm is not visible in a couple of years but takes decades (*ibid.*).

Also in infrastructure a shift emerged. Water management and infrastructure have become closely related to spatial planning. The development of infrastructure on national level is becoming more focussed on regional (area-based) development instead of only on the structure of the line (e.g. canal, highway) in the landscape (Struiksma & Tillema, 2010). As they argue, infrastructural planning in the Netherlands used to focus on roads or canals rather than embedding its surroundings. The development of infrastructural projects is now seen as a spatial activity (Mom & Filarskik, 2008) increasingly connected to spatial planning.



The connection of infrastructure and spatial planning is increasing (Struiksma & Tillema, 2010).

However, traditionally, infrastructure and spatial planning are not connected (Heeres et al., 2012). The former division between infrastructure and spatial planning practises is the result of the incapability of traditional infrastructure planning to cope with societal dynamics and the increasing scope of projects (Heeres et al., 2012). Infrastructural objects (e.g. railways of canals) are lines that cross the landscape (Struiksma & Tillema, 2010). In contemporary planning processes, the lines get connected with other aspects of the landscape (Priemus, 2007) as, for example, nature, recreation or housing. In literature there is no consensus on whether an area-based approach involving stakeholders in the process has positive or negative effects in practise. Struiksma & Tillema (2010) argue that focussing on the surrounding area will lead less often to exceeding the budget or time limit on projects in infrastructure. As they argue, when the area is involved, fewer objections will be filed leading to less delay in the process. On the contrary, Harrison et al. (2009) argue that the network of stakeholders involved in the process can lead to risks on exceeding budgets and time limits which needs to be closely looked after.

Summarized, several main dynamics have occurred in water management, infrastructure and planning leading to a different approach. In particular the scope of infrastructural projects has been rather restricted in the past (Arts & De Vaan, 2010). In contemporary practises the area of infrastructure and spatial planning includes more aspects of the landscape (De Zeeuw & Licher, 2008). Water management, infrastructure and planning have become fields with (social) structures including a tremendous amount of diver's opinions including the involvement of a large amount of stakeholders (Jacobs & Buijs, 2011; Struiksma & Tillema, 2010).

Remarks in contemporary planning

Spatial quality is a concept that is widely discussed in planning practises and policies (Janssen-Jansen et al., 2011), but in practise Rijkswaterstaat faces troubles to embed the concept in projects on canals. Planning concepts relating to spatial quality are not only used in the Netherlands, but are also familiar to the European Planning system (Jensen & Richardson, 2004). In scientific literature the content of the concept itself is not directly discussed, but the lack of knowledge on how to construct the concept has been a point of attention in scientific literature (*ibid*.). Miciukiewicz et al. (2010) discuss that most do not define spatial quality or even quality at all in their writings. Spatial quality has been discussed in mostly Dutch writings (Janssen-Jansen et al., 2011) and is argued to have a lot of different definitions. Nobody does not want 'spatial quality'.

The lack of content of the concept of spatial quality is considered to be a problem in project and policy development regarding national canals. It is argued that research on spatial qualities and planning practises do not always connect (Van Rooy, 2009).

The ambition to embed the spatial quality of canals is grounded in water management, infrastructure and planning. Although there is a growing attention to embed environmental aspects in these fields of expertise (e.g. spatial quality), it is not clear how to embed spatial quality in the planning process. The ambition to embed spatial quality faces challenges as reflected in scientific debates, policy debates and communities of practise. This research aims at providing insights to Rijkswaterstaat on how spatial the quality can be embedded processes on canal projects. Rijkswaterstaat is intending to provide their regional services with guidelines for (re)developments of canals in order to emphasize on spatial quality in projects. The elaboration on the spatial quality of canals is referred to as *Kijk op de Ruimtelijke Kwaliteit van Kanalen*. This research is considered to be a preliminary analysis for the future report on the spatial quality of canals.

Research Questions

This research aims to explore in what way the concept of spatial quality can be embedded into guidelines for future canal projects in the Netherlands.

Main Research Question

How can the concept of spatial quality be embedded into planning processes of national canals in the Netherlands?

When embedding spatial quality, it is necessary to analyse the complete trajectory of implementation. The implementation starts with scientific views on the concept can be reflected in policies. In order to be able to analyse the implementation of spatial quality, it is important to connect policy-making with projects on local level. These three different levels of input on the conceptualisation of spatial quality are at the heart of the analysis.

Sub-research questions

What is at the basis of embedding spatial quality in canal projects?

How is spatial quality perceived in literature?

How is spatial quality embedded in policies on national canals?

In what way is spatial quality used in contemporary projects on canals?

The research will start with an elaboration on how spatial quality is perceived in scientific debates. Many writings discuss how to conceptualize spatial quality. Some scholars argue that spatial quality can (partly) be objectified while other scholars perceive the concept as being constructed by society. This research is written from a social constructivist's point of view in which spatial quality is argued to be able to be established by society in which it is possible to define spatial quality at a given moment, at a given time.

Because canals are established at national level, policies and guidelines that are analysed focus on (higher) levels, which are world level, European level and national level. Due to ground positions, there are no policies on regional and local level concerning the spatial quality of canals.

Although policies can describe spatial quality, the real effects will only become visible if the concept is used in practise. This research therefore has a strong relation with planning practises. It studies how spatial quality is constructed in projects on canals. The conducted case studies contain projects on national level as established by Rijkswaterstaat. The projects can vary from small-scale projects (e.g. expansion by replacement of a lock; see lock Eefde, Twente canal) to large-scale projects (e.g. construction of new canal routes; see the bypass of the Zuid-Willemsvaart). To have a full understanding of the process, every case study analysis a project that already is realised or is in the phase of current realisation (execution of works).

The following chapter provides a theoretical framework. Hereafter, methods that are used in this research are discussed, supplemented with a short description of the case studies. The next chapter describes the ways in which the concept of spatial quality is perceived in scientific debates by reviewing scientific literature on the conceptualization and operationalization of spatial quality. Then, a description of the (organisational) context in which spatial quality of national canals in the Netherlands is framed is provided. This chapter will also describe policies that are of influence on the conceptualization of spatial quality. After the description, spatial quality is analysed using the findings of the communities of practise. The conclusions will provide an answer to the research questions after which recommendations are made. Finally, in the appendix a description of the case studies can be found, including the results of the in-depth interviews.

Theoretical Framework

Introduction

Shifts in water management, infrastructure and planning have changed the perception of policy-makers towards canals. Whereas spatial planning used to focus on spatial aspects that were considered to be weak (e.g. high unemployment, contamination or air pollution) and aimed at improving them through planning, contemporary practises strive for enhancing existing strengths (Verbart, 2004) as, for example, spatial qualities of canals. Connected to societal changes to the perception of the landscape, new approaches emerged. Many responsibilities of the national government shifted to lower governmental organisations. However, the construction of spatial quality remained part of the tasks of national organisations.

In contemporary policy-making, multiple factors contribute to how policies are established and implemented. There is proof that key-decision makers (e.g. governments, private stakeholders or the general public) let science influence their decision-making (Watson, 2005). Science and policy-making processes are connected. But "good science [...] does not guarantee good policy" (Pullin et al., 2009: p. 974). In modern society science informs policy-makers through objective, trustworthy and valid knowledge (Funtowicz, 2006). Although scholars acknowledge spatial quality be a social construction, Jones et al. (2009) identify that scientific knowledge remains important to address when implementing concepts or creating policy-frameworks.

The demand for integrative policy-development (e.g. spatial quality) is increasing, but the integration is not easy and depends on many factors (Geerlings & Stead, 2003). Contrary to top-down planning approaches, stakeholders have become increasingly involved in decision-making. Participation of private parties or (local) citizens is embedded in policy-making and is often used in the process to define subjective concepts. Spatial quality is also a subjective concept which is not static but framed within a context embodied within regional or local stakeholders. The national government needs to adapt their planning policies as well as their role in projects. Planning is not able to construct concepts through their expertise but is depended on societal input.

Societal perception of landscapes

Reactions and emotions on landscape changes are more apparent when changes are visible. In history lots of developments have occurred to visible components of the landscape. The landscape needs to be seen in its cultural setting as well as its natural setting, creating a "fragile equilibrium" (Lörzing, 2001: p. 13) in which the human aspect is substantially interlinked with the natural aspect. Antrop (2003) explores three main period of landscape developments in Europe; the

traditional landscape (before 18th century), changes during the age of revolutions (19th and 20th century) and post-modern landscapes. The development of modern canals is based in the age of revolutions. A part of the history plays a role in how the landscape is valued (Scott, 2003) and provides a better understanding with better insights into people's considerations. Canals have always been created for their utilitarian value (e.g. transportation of goods or soldiers). But canals in relation to the landscape gained a much deeper meaning in time.

Already in the Middle-Ages important land-use projects (e.g. deforestations) were strictly planned (Muir, 2000; Butlin, 1992). Procedures on land-use projects were listed into policies (Van Hoorick, 2000). In the Middle-Ages several new landscapes appeared as a result of the tremendous growth (Antrop, 2005). As a result of the growth, from the Middle-Ages to the Renaissance policies were mainly focused in preserving natural resources (e.g. water or the quality of the soil) and not to maintain characteristics in the landscape (Van Hoorick, 2000). In that same period of time, urban planning evolved as well (Antrop, 2005). Since the late 1890s and in the beginning of the 19th century, the focus of policies on growth was seen as "devastating and threatening for the environment and the landscape" (Antrop, 2005; p. 22). As Antrop elaborates further, in this period of time the first legislations on landscape conservation emerged. During the 1980s there has been a focus on ecology which was the start of applied research on landscapes. In the period hereafter, late 1990s and 2000s, the paradigm of natural heritage emerged (Antrop, 2005) relating to concepts of place attachment or (local) identity and so on. Despite these changes, water has always been a visually attractive aspect of the landscape (Burmil et al., 1999).
Also in contemporary policies the societal perception of the landscape has listed in policies. On European level the landscape is perceived as not only existing out of physical elements, but the landscape can also be constructed by people (Butler & Berglund, 2012). As Butler & Berglund argue further, if such a holistic understanding of the landscape is used in European policies, research is needed to analyse which values to the landscape are addressed by society. The International Council on Monuments and Sites defines values by "the value people give, either individually or collectively, and at local, national, or international level, to [...] qualities in the landscape (ICOMOS U.K., 2004). These understandings of the landscape and values as defined in policies are at the heart of the contemporary conceptualisation of the spatial quality of canals.

Not only the societal perception of the landscape changed, but also specific expertise on canals show shifts in paradigm. A transition has taken place, resulting in different understandings and approaches.

The construction of concepts in spatial planning

Experiences in the past, changing society and the development of new insights on how to deal with water has led to a different approach in water management, infrastructure and spatial planning. Water management is one of the fields of study that severely shifted in the last decades towards a holistic approach (Van der Brugge et al., 2005; Rotmans et al., 2000). But also infrastructure and planning have changed. Embedding non-core concepts in policies (e.g. spatial quality) is one of the changes in water management, infrastructure and planning. Van der Brugge et al. (2005) see a shift as a long-term structural change in the system (25 – 50 years) which emerges in small steps by short-term fluctuations. A shift originates through (societal) changes (e.g. economical, ecological, institutional, and technological). Verbong (2000) discusses another Dutch transition in order to provide an example, from a coal-based energy supply towards a gas- and oil based supply. The perceptions and approaches towards the same subject – in this case energy – change. In a transition several domains should strengthen each other, for example, technological changes should be embedded into policies. Changes cannot be based on one sector, but in order to be sufficient change needs to be embedded in the system. Besides an inter-sectorial horizontal approach, shifts can also occur at vertical level: macro-level, meso-level and micro-level (*ibid.*). The macro-level is influenced by changes on national level, such as changes in natural environment, population or politics. The meso-level exists out of rules and norms as defined by institutions (Berkhout et al., 2004). These are influenced by, for example, social norms, interests and shared assumptions. The meso-level affects the micro-level in which individual stakeholders operate. A shift in thinking and acting can appear amongst both, macro- and micro-level. On the one hand changes at micro-level have to be strengthened at macro-level in order to make them work. On the other hand, changes at macro-level can find initiatives at micro-level.

To provide an example, if changes in the climate appear (macro-level) rules have to be set and frameworks have to be created (meso-level) in order to create new techniques or projects (micro-level) that protect the land from the water.

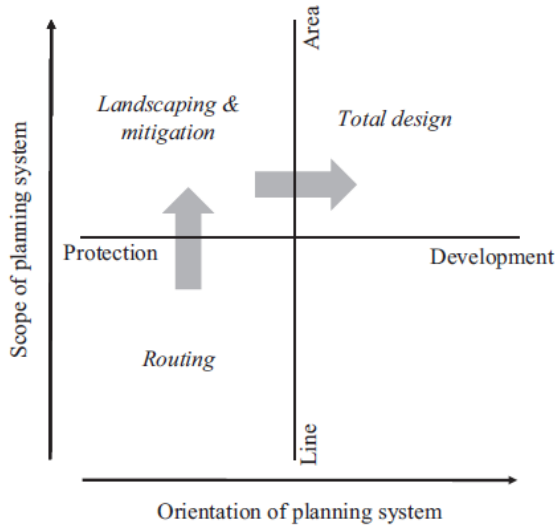
Shifts often occur through experience. In the past, Rijkswaterstaat had to face several protests against its technocratic approach towards physical structures that appeared to negatively influence the environment (Van der Brugge et al., 2005). Also protests started through experience. For example, on major-level ecologists were worried about environmental aspects of the Delta programme in Zeeland, influenced by, for example, The Limits to Growth (Meadows et al., 1972). On micro-level people noticed the consequences of this larger problem by, for example, soil pollution or pollution of water. So on major- and micro-level experiences have led to changing

perceptions. In order to deal with this shift, Rijkswaterstaat also needed to adapt its approach on meso-level. On the one hand, ecologists warned their regime showing the consequences of their actions (Bosch & Van der Ham, 1998) and, on the other hand, Rijkswaterstaat restructured to bring water quantity closer to water quality. The quality agents altered the view of the quantity agents which led to a new paradigm (Overmars, 2002). It is important that each level connects to each other. Valk & Wolsink (2001) show a case in which the levels misfit and therefore several ambitions were made, but were not carried out.

The study of transition is also argued to be voyeuristic (Shove & Walker, 2007). As they argue, the result of observing transitions in order to understand the shift better does not necessarily mean that the capacity to manage will improve. In other words, acknowledging shifts in water management, infrastructure and planning does not mean that the concept of spatial quality becomes easier to embed.

Spatial quality has been discussed in science, embedded into some policies and being implemented in projects. Yet there is a gap between several levels which might suggest that the inclusion of spatial quality of canals has not taken place in chronological order. As a result, spatial quality is used in several ways without having a definition or method that puts in into context.
In order to successfully include a concept through policies, it does not necessarily mean that a change in the current system is needed (Van Assche & Djanibekov, 2008). To integrate spatial quality into policies is a process which involves learning and mutual adaption is considered to be a form of management (*ibid.*). But economic (e.g. multiple goals within projects can increase the budget needed for the project), instrumental (e.g. struggles in defining costs and benefits of collaborative approaches) and cultural (e.g. organisational culture of technocracy) developments have made governmental management harder to achieve and difficult to embed (Stead & Meijers, 2009).

Water management, spatial planning and infrastructure are grown towards each other, from single and separate lines in the landscape towards areas with common characteristics in their approach. The scope of (infrastructural) planning widens and moves towards total designs rather than sectorial plans.

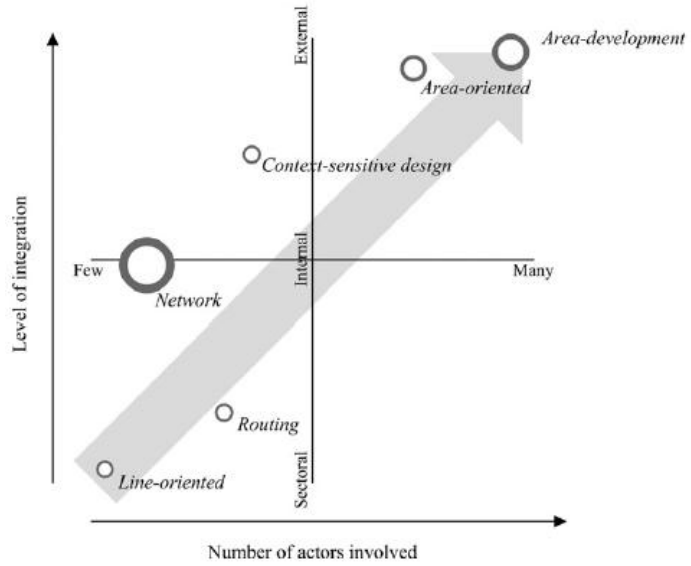


Changing approach in planning (Heeres et al., 2012; after: Struiksma et al., 2008)

In contemporary practises there is a severe link between infrastructure and its surroundings. Not only does infrastructure needs to be adapted to its surroundings, also the surroundings should be connected to the infrastructural object (Rijksadviseur voor de Infrastructuur en BAPS, 2008). Therefore it is important that governmental agencies create a common shared vision on spatial developments on national level (Ministerie van Infrastructuur en Waterstaat, 2009). The multi-actor area-based development has developed into a total design.

The shift in water management, infrastructure and planning also means that the approach towards spatial projects has changed. Traditional infrastructure planning is linked to the element itself (e.g. canal or road) rather than to wider area (Heeres et al., 2012). Besides, traditional planning has a few formal participatory moments and almost no stakeholder involvement. The traditional focus on the economic effects of roads was strong and can be found in the national Road Infrastructure Plans (1958; 1968). The plans argue that dots (e.g. cities) on a map need to be connected through lines without environmental constrains (Heeres et al., 2012). Later on, the design of the route becomes more important. The focus of infrastructural projects was on the design of the route in the landscape (*ibid.*). In other words, as reasoned from inside out (from road to landscape). Hereafter, planners became more aware of the effects these road have on their surroundings (e.g. housing, nature). The effects of the road became part of project plans and policies. The level of integration of

the road increased. Integration is argued to be the first step that acknowledged the fact that infrastructure had an impact on the landscape (*ibid.*). The goal of the new approach was to take the context of the road into account and decrease the negative effects of the road. In contemporary planning practises the road and the landscape have become interconnected. Roads have become the result of area-based collaborative planning processes (Heeres et al., 2012) and are not purely line-oriented. In contradiction to the traditional infrastructure planning, many actors have to be involved. Projects have become a multi-interpretational understanding with external integration (see: Heeres et al., 2012).



From line-oriented towards an area-based approach (Heeres et al., 2012).

Whereas spatial quality in the old paradigm was defined by one or a few stakeholders, the total design of infrastructural projects with a strong focus on the area shows a construction of a diverse set of stakeholders who construct spatial quality.

As a result of towards an area-based approach, knowledge has become more than purely created by scientists. The production of knowledge has shifted from constitutional knowledge towards a cooperation of both, scientific as local knowledge (Brosius, 2004). Local knowledge is often not directly related to classical scientific knowledge. This type of knowledge is often produced at local sites. Local knowledge is often constructed through (local) participation, although participation is often considered to be a buzzword in planning (Stenske, 2008). It is a reaction on the increasing gap between landscape management strategies and the people who use the environment for their everyday life (Hägerstrand, 1995). Selman (2004) argues that it is not possible anymore to continue the complex interaction between society and its surroundings by merely governmental intervention.

The inclusion of more than a single object created a new professional paradigm in spatial planning and other related fields (e.g. infrastructure and water management). Biswas (2004) argues that approximately 60-years ago a similar issue towards an area-based approach emerged. In that period of time the integration of several different fields related to spatial planning did not succeed.
In 1965 at the University of California changes in water management were discussed, focussing on the Reasonable Use Principle (Todd, 1965). It was the result of a conflict in water management that appeared in the mid-1960s. When more than one user of a water basin or other water storage wanted to use that water or changed the quality of the water, conflicts among other stakeholders appeared. The view on water management then clearly showed that both stakeholders aiming for a maximum – according to their own sake – did not work (Biswas, 2004). The core of this concept is that there is no single solution for this problem other than compromising by aiming to the maximum benefit for both stakeholders rather than a single benefit for one stakeholder. The same argument rose again during a lecture in Buenos Aires (Sadoff, 2003) explaining the holistic concept of water management by focussing on a maximum benefit for the system's grand total (Garcia, 2008). Spatial quality can also be perceived as aiming for the system's total and not the maximal benefit for a single sector.

The emerge of concepts in spatial planning

During the late 20th century the legitimacy and value of planning has been questioned, whether planning is a sufficient governmental mechanism providing guidance and control for society (Gunder, 2006). The concerns about spatial planning were raised by decline of the welfare state which aimed at providing public goods and services to society (Troy, 2000). Planning used to couple knowledge to direct actions (Friedmann, 1998). In many Western countries society became more focused on marked-led values, globalization and other neo-liberal principles (McGuirk, 2005). Planning was a bit lost regarding its function in society (Levy, 1992). Yet at that moment spatial planners came with another approach (Gunder, 2004) leading to conceptual thinking. Since the 1990s several concepts have been implemented into the field of spatial planning as the new guiding principles (Gunder, 2006) in policy-making. By that, planning has found its disciplinal homogeneity, focussing on concepts but do not know what they mean, assuming others to know (Gunder, 2003). Society does not believe that in practise planners have the answers (Dean, 2001). The signifiers are ideological concepts (Žižek, 2002) which others – society – can give meaning to. Metaphors (e.g. spatial quality) are used as signifiers (Gunder, 2004) for planning practises. The concepts that were included in planning practises cannot have a fixed meaning. Therefore some governmental officers might argue that these rather vague concepts are used as argument to keep

them from doing their jobs (Williams & Stewart, 1998). Where planners focus on concepts, it is society that gives meaning to the concept by hegemonic discourse (Žižek, 1999). Whether an individual planner does agree or not, planners feel the need to acknowledge these concepts in order to be 'good planners' which they consider to be very important (Gunder, 2006). Gunder (2006) argues including concepts is part of ones identity to be perceived as a 'good planner'. Therefore using the concept is identity-shaping. Students or starting planning professionals will model and value the truths of their teacher or their more experienced colleagues in order to be acknowledged as a good planner as well (Gunder, 2006). By copying values and truths of our masters, norms in planning, or even in society, are created (Gunder, 2004). Many planners externally appear to favour the concept and put it into actions and decisions they make acknowledging what a good planner will do (Gunder, 2006). So the decision that we make is not based on our own believe, but based on what is expected from us (Gunder, 2006). The concepts that planners use are often open concepts (e.g. see Kooij et al., 2012). Spatial quality is also an open concept which does not have a static meaning. Open concepts are used to adhere social and political realities resulting in actions or political agendas (Poeck et al., 2011). It is the moment where the ambiguity of a concept can be stopped by connecting its meaning into actions (Gadotti, 2008). The process of ambition to implementation through policies needs clear communication in order to get a better understanding of every view. Communication between policy-makers and stakeholders is an important aspect of spatial planning (Beunen & Hagens, 2008).

One of the first concepts included in spatial planning is 'sustainability'. Gunder (2006) considers Friedmann (1996) to be the first author who notices the appearance of sustainability in specifically spatial planning. In that time, sustainability has been included into planning education (Friedmann, 1996; Glavovic, 2003). But in those years sustainability has been used as "undefined ideal" (Gunder, 2006: p. 211) having troubles in defining the concept in literature as well as implementing sustainability into planning practises. Despite the lack of a clear definition, sustainability has been used as a fuzzy concept in spatial planning (Markusen, 2003). Sustainability is a concept that everyone understand but faces severe problems to concretely implement into practise (Gunder, 2006).

Although sustainability does not have a clear definition it can be argued that it was not a concept that was totally misplaced. The concept is often used to bring people together (Bachus, 2009) or creates unquestionable goals or objectives (Žižek, 1989). Using an open concept shows that everybody has a common goal (Gunder, 2006). But by using concepts in spatial planning it is argued that some other essential goals of spatial planning have disappeared, such as social justice

or fairness (Gunder, 2006). A concept cannot be used for and ungrounded justification of planning ambitions.

Policies related to a concept (e.g. sustainability) are often based on science. However, it is not science it selves that is embedded in practise but an interpretation of scientific research that is often included into planning policies to justify the use of concepts (Gunder, 2006). In other words, it is not the perception of spatial quality in literature that is embedded in the process, but a vague interpretation of science what are qualities of the landscape. There is a gap between spatial quality in theory and spatial quality in practise. Spatial planning policies are often a mixture between ideological concepts and technological solutions (Lefebre, 1992).

Functions of concepts in spatial planning

Time has changed the views about thinking about the landscape and possible solutions. Also spatial planning changed and comes in many variations (Allmendinger, 2009). In time the landscape has been constructed through history (Kooij et al., 2012) which is at the heart spatial planning until mid-20th century. The shift in paradigm in spatial planning has led to a different understanding of the role of planners. In the period after structuralism discourse, society has searched for solutions to problems that they face with, for example, infrastructure by experiencing negative effects (Heeres et al., 2012). As a result, several concepts have been constructed in order to overcome the negative effects and acknowledge differences in people's perception. The perception can be constructed through various ways. Some examples are by cartographic representations (Carton, 2007), by visual designs (Murphy, 2004), or multi-agents tools (Van Leeuwen et al., 2007). One of the other tools is to use concepts in spatial planning (Hagens, 2010). One of the functions of concepts is to describe the future, for example, how the landscape is going to be or has to be in the future (Van Duinen, 2004).

To plan future places means to come up with concepts to construct it (Kooij et al., 2012). Spatial concepts have been strong in Dutch planning tradition which can be related to the tradition of the power to plan and organize space (Kooij et al., 2012). Gunder & Hillier (2007) argue that using concepts means to perceive spatial planning as a tool to create the future. Concepts have the capability for people to order the complexity of the world (*ibid.*). The view on spatial planning is based on a society that can be made (Scott, 1998). Yet there is a long road that has to be travelled between an initial concept and the implementation of the plan. Moreover, implementation is not just connected to spatial planners (Fischer, 2003) as is conceptual-thinking, but involves other stakeholders to be part of the process (Kooij et al., 2012).

Although the scope of spatial planning has widened and the area-based approaches have emerged (Allmendinger, 2009), it is argued that predefined concepts have strong support amongst planners (Kooij et al., 2012). As they elaborate further, planners adapt the concept to be objective, successful and reflect reality. Therefore concepts are often used for retrieving reality. Concepts are ascribed a lot of value which makes them powerful in practise. Examples of powerful concepts are sustainability, public support, trust or innovation. These words are included into the dictionary and in general well-known although they can have many different interpretations. For example, innovation is using a new idea or method (Cambridge Dictionary, 2012). Hence, is every new idea innovative? It can be argued to be true, but it is also questionable whether this statement would be accurate. Laclau (2006) argues that concepts (as 'innovation') are concepts which signify a development without the possibility to directly represent it. Kooij et al. (2012, p. 5) argue that "content without content is logically impossible". Therefore a concept has either content or is not a concept. As Kooij et al. (2012) discuss further, the signifier has a relationship with its context in which the meaning of it is created.

Gunder & Hillier (2009) elaborate on another form of empty concepts called 'master-signifiers'. The meaning of these kinds of signifiers is not empty but is about meaningless concepts. In other words, although spatial quality does not have an objective content, it can be used to be used to signify a problem or ambition. Master-signifiers provide a certain direction but do not go into much detail (Kooij et al., 2012). The emptiness provides a reproducible discourse by the disclosure of an enacted ideological position (Žižek, 2007). In other words, the emptiness is filled in with an omniscient ideology. Planning concepts can produce knowledge by being vague, can give the impression of an agreement or can be used to vaguely define a common understanding (Kooij et al., 2012). The vagueness can have a positive effect for the organisation that uses it (Gunder & Hillier, 2009). By using an empty-signifier people engage without any direct meaning (*ibid.*). Meaningless concepts are often perceived as something that is good, whether one agrees to it or disagrees (Gunder & Hillier, 2007). But Kooij et al. (2012) argue that concepts without a direct meaning work. As they elaborate further, although the concepts do not have a direct meaning, they also not tend to be completely empty. It is a result of several uncertainties that are unpredictable. Although the concept does not have a fixed meaning, it can be defined by social relations connecting different discourses (Kooij et al., 2012). Therefore they argue that empty signifiers would be more appreciated when talking about open concepts. The open concepts can be used in discursive practises as being 'in-use' rather than having a fixed status, definition or otherwise. In their elaboration, Kooij et al. (2012) see spatial concepts as a starting point for numerous discourses which enhances their reproducibility. In this view they play a major symbolic role in signifying

problem statements or ambitions. Open concepts often succeed in closing the gap between opposite ideologies (Bachus, 2009). Hence it is also argued that because of the consensual and vague character of the concept implementation will be troubled (Huckle, 1999).

Open concepts can share ambitions, also if they face severe problems. Because the meaning is not fixed, the context in which concepts are defined is influential. How people interpret a concept is important as well as how people perceive open concepts. Therefore the same text can be interpreted differently by other people (Beunen & Hagens, 2009). The interpretation of a concept is closely related to the action that is taken (Howarth & Stavrakakis, 2000). It is argued that some concepts (e.g. sustainability) will remain a (scientific) discourse rather than being implemented (Bachus, 2009).

Zonneveld (1991) elaborates on five (Habermasian) functions that concepts in spatial planning can have:

- Cognitive function

  The cognitive function is related to (empirical) assumptions as a result of experience which reflect on the content of the concept rather than the process.
- Intentional function

  This function does not take the actions into account (see below) but relates to the desire and expectations of the outcome of the planning concepts.
- Communicative function

  Before the concepts have a common understand it is discussed and different views have been explored. Talking about the concept can bring stakeholders together to reach consensus on future actions or strategies.
- Institutional function

  Intuitions can share an ambition at multiple governmental levels.
- Action function

  The action connects the concept to implementation which results in specific actions.

Not all of these functions can be included in spatial planning due to the disappearance of planning certainties as in the 1960s and 1970s (Witsen, 2007). For example, due to the changing relation of the government, local operationalization does not need to fit governmental conceptualisation. If a line of trees is perceived as spatial quality at local level, it does not automatically connect to governmental actions.

The study of a concept should take into account the interpreter, the meaning-maker and the author together (Beunen & Hagens, 2009). Someone can give a description of spatial quality, but it is the reader who constructs a meaning about it. In planning practises this implies that different actors can interpret the text differently (*ibid.*). They each belong to their own discourse which affects their interpretation of open concepts. Therefore the continuous process of construction and reconstruction of the concept by a multitude of actors needs to be studied in order to gain a complete understanding of how the concept is creating social and physical effects.

Changing input of knowledge in spatial planning

In planning practise as well as the scientific discipline that studies planning practises, a different approach towards to construct concepts becomes visible (Van Assche et al., 2012). The changing approach is a result of shifts in paradigm and different perceptions of the role of planners. In contemporary planning practises citizens do not take the findings of an engineer for granted. The knowledge of engineers has changed from an objective point of view towards a scientific-based opinion (Van Assche & Jacobs, 2003). Stakeholders want to have influence. As a result of the changing power relations, public institutions or governance have become more focused on including people's opinions into the decision-making process (Hillier, 2003). Many of the problems related to water have become too wide to be managed by a single institute (Biswas, 2004). Water cannot be seen without any link to other fields (*ibid.*). In order to understand the complexity of the problem it is necessary to involve more people. But methods used for involving people are fuzzy (Stenske, 2008). There is no consensus on the value of involving stakeholders in the process. Whereas some scholars argue involving stakeholders would be the "keystone to our democratic culture" (Steelman & Ascher, 1997; p. 73), other scholars advocate the insufficiency of the tool (e.g. Mannigel, 2008; Hillier, 2003; Veldboer 1996).

Public participation creates a different kind of knowledge than the classic view on knowledge influenced by positivism in science. Including local knowledge can have a many reasons (Brosius, 2004). It is argued that local knowledge might be helpful in managerial terms (e.g. amongst others, legitimacy (Edelenbos & Van Twist, 1997), improving democracy (Coenen, 2001) or it can be used for emancipatory reasons (e.g. embedding local voices into the decision-making process (Brosius, 2004). Governance principles have led towards an inclusion of a diverse set of societal factors in planning (Loughlin, 2001). The process of implementation and public satisfaction is argued to be more successful when stimulating people to find solutions adapted to local situations (Ljung, 2001). It creates differences in the classical power relation between government and society.

Duineveld & Dix (2011) provide an example that can be linked to planning concepts (e.g. spatial quality). They elaborate on the concept of delinquency. In former times offenders (delinquents) got punishment without regard to the nature of the offender. Then a shift in approach became visible towards a more humane understanding of offenders. In contemporary justice this is visible as well. Offenders who have severe criminal issues are now argued to have had a bad youth or biological deficiencies which caused this behaviour. Duineveld & Dix (2011) also compare this approach to sustainability and argue that an internal recognition of humans as sustainable subjects could, indeed, make them sustainable. The transition towards a different understanding of mankind will lead towards a changing identity and create new discourses. Another example that Duineveld & Dix (2011) add to this, is about environmentalists who became alternative people, radicals, extremists or softies. Although they share the same meanings, the identity of the discourse has changed.

Knowledge has been produced among scientist for many years. However, not only scientists are able to provide solutions. Society has also knowledge. But at first, local knowledge has to be acknowledged as 'real' knowledge (Stenske, 2008). Local knowledge has to be perceived as on the same level as scientific knowledge (Brown et al., 2004; Pinto-Correia et al., 2006). In contemporary planning practises some of the knowledge that is locally produced can be excluded by exclusionary mechanisms (Duineveld & Dix, 2011). They state that certain dominant discourses have the power to exclude knowledge and by that, continue existing power relations. Foucault (2003: p. 7) elaborates on how some knowledge is seen as "naive knowledge" or "inferior knowledge" by certain discourses. By that, knowledge has a hierarchy (Duineveld & Dix, 2011). Knowledge can be accrediting a different value. Good knowledge contributes to strategic power (Hall et al., 2007). There are many sources that can value knowledge (Colebatch (2009).

Although there is a shift in power, the construction of power is not seen in the core of planning articles and researches (Flyvbjerg, 2002). Yet power relations are important to acknowledge. Power is needed to create a change in thinking (Healey, 2006). While some statements are accepted as truth, others are dismissed (Duineveld & Dix, 2011). The question about who is right or wrong depends on people's practises within society. Power is everywhere (Foucault, 1998) and creates some discourse, realities, knowledge and values (Duineveld & Dix, 2011). Keeney (1992) argues that thinking in values is acknowledging what is important. According to McDaniels et al. (1999) value-focused thinking has been the beginning of implementing public participation into policies.

The construction of policies in spatial planning

Governance

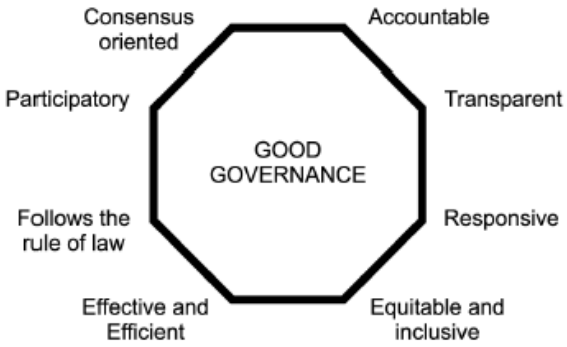
Governance is a concept that is connects the construction of spatial quality in policy-making processes. The government shows shifts in responsibilities towards regional or local (governmental) organisations to construct multi-dimensional concepts as spatial quality. The government decentralized its tasks to lower governmental organisations and the government involves more private parties and citizens to participate in the decision-making process (Beunen & Opdam, 2011). The emerge of governance has also several other reasons, for example, an ideological shift towards market involvement, trends towards globalisation, technological developments and so on (Jessop, 2000). Several changes have weakened the position of the central government (Berger, 2003). Governance is also encouraged in the European policy framework. The European Union defines governance as "a negotiation mechanism for formulating and implementing policy which seeks actively the involvement of stakeholders and civil society organisations besides government bodies and experts" (EUROPUB, 2002: p. 18). According to the English Dictionary (2012) governance can be either a synonym for government but is also defined as "a method or system of government or management". Rhodes (1996) argues that governance has become more than its meaning in the dictionary. He discusses that governance is the change of the concept of government. Stoker (1998) uses the same definition and argues further, that the outcome of governance can be the same as an outcome based on the principles of government. In research governance is generally perceived to be the discussion about the relationship between government and society (Berger, 2003). More recent publications (e.g. Bevir, 2009) seem to agree that governance is used to describe changes that occur concerning the role of the state in policy-making. Although governance is discussed in literature, it is also argued that there is no consensus on a definition of governance (De Graaf, 2007). Scholars often connect participation with governance (e.g. Blair, 2000; Fung, 2006). Besides that, governance is also often interlinked with the transition towards another multi-level and multi-staged type of state involvement (Albrechts et al., 2003).

The division between tasks and responsibilities of the government, market or other stakeholders is not always clear. In projects decisions have been made across several institutional levels (Janssen-Janssen et al., 2011). Various levels have various stakes. These stakes can complement each other but can also contradict. Multi-level governance has a strong history in most European countries (Albrechts et al., 2003) and has emerged in other advanced capitalist countries as well (Geddes, 2006). In countries with different political structures governance has also been part of small-scale changes in the relation between government and society (Kjaer, 2003; Geddes, 2005). The contemporary concept of governance has occurred through neo-liberal changes in the 1980s and

1990s (Bevir, 2009). By neo-liberal perspective it is seen as the difference between the unfavourable government and necessary governance. The perception of the government in a way of governance is widely shared in literature (Van Assche & Djanibekov, 2011. In that respect, governance is perceived as roll-out neoliberalism while the strategy of deregulation is more related to roll-back neoliberalism (McGuirk, 2005). Roll-out neoliberals would argue that public spending would be accessible when related to terms of governance while the mantra of a small government is connected with roll-back neoliberal views.

Governance is related to policy-development in general as well as on specific policy-development related to spatial planning. It is a constant shift between the multi-level process (see: Rotmans, 2005) of policy-making processes and implementation (Foucault, 2003). Classic spatial planning used to create a plan or policy (Louw et al., 2003) which was the main goal in the process. According to Louw et al. (2003; p. 357) in that period of time "the implementation [...] was taken for granted". Alexander (1998) argues that planning and the implementation of the plan into practise did not fit whilst there is a severe relation between them. In the last decades this view has shifted by a shift from government to governance, led by a reconsideration of the state-society relation (Louw et al., 2003). McLeod and Goodwin (1999) see more non-governmental stakeholders involved in policy-making which he perceives to be the shift, resulting in less state-oriented direct management. Stoker (1998) argues that this shift focusses on the type of governing style. In that way, the government does not have less power, but has a different focus point. As a result of involving several (non-governmental) stakeholders into the process it often is argued that the government has become fragmented while the government first was seen as an institute with controlling power (e.g. Madanipour et al., 2001). Because of the shift in governmental styles Jessop (1998) argues that there has been a proliferation of several different scales. Louw et al. (2003) argue that policy- and institutional building need to focus on the development of different scales in order to create a well-structured process.

Governance has been a research area of the United Nations (1997). According to them, governance has eight characteristics that are able to create 'good governance'. The United Nations are perceived this way of governance to be sustainable for present and future generations (UNESCAP, 2005).



Good Governance (UNESCAP, 2005)

Governance also leads to other considerable issues. But is there something like good governance (UNESCAP, 2005) or is it just a temporarily stabilisation of power relations (Van Assche et al., 2011)?

Because open concepts can bring people together (Bachus, 2009), concepts can be defined amongst stakeholders. When there (partly) is a common understanding, agreements are registered in documents, such as ambition documents or policies. They are a temporary stabilization in the configuration of power and knowledge amongst stakeholders (Van Assche et al., 2011).

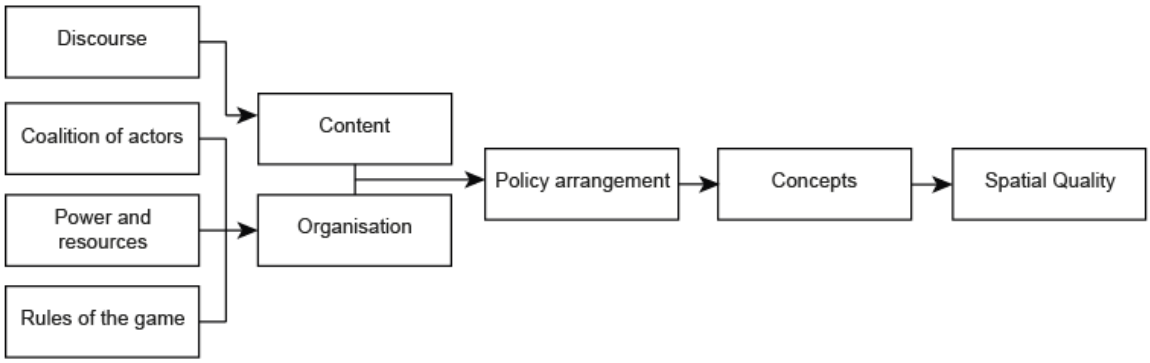
Governance and policy-development

The original planning network in the Netherlands exists out of three governmental layers; national, provincial and municipal level (Wolsink, 2003). Spatial planning is related to the policy context on these levels. It is an aphoristic aspect to involve in policy-making or project development.

Policies are more than just the rules and what people see. They have underlying reasoning and often exist out of more than one (policy) document. Policies can be seen as coordination between governmental and non-governmental demands in order to provide a structure in their strategies (Van Assche et al., 2011). In contemporary planning practises everyday policies are often rooted in one sector (Wiering & Immink, 2006). Policies are never fixed and can change in time. Therefore the implementation of a policy is perceived to be a "temporary stabilisation of the content and organisation of a specific policy domain at a certain level" (Wiering & Immink, 2006).

As they elaborate further, organisations, but also politics, have established certain positions in the policies. They exchange ambitions, views or guidelines with each other. By that, the policy framework is becoming institutionalized.

The relationship between aspects that are of influence on the conceptualization of spatial quality can be visualised as follows.



Adapted from: Van Tatenhove et al. (2000).

Policies are influenced by discourses and power relations between various stakeholders (Van Tatenhove et al., 2000). Policies on spatial quality cannot be detached from their organisational context. The concept is constructed by content and by organisational aspects (coalition of actors, power and resources and rules of the game). Established positions in policy-making processes create power over marginalized stakeholders. Policies are constantly changing (Van Assche et al., 2011). A policy cannot be placed outside the current framework of laws, policies, ambitions and other documents. These so called 'rules of the game' distinct formal and informal rules. Formal rules are defined by rules that the stakeholders have (formally) agreed on while informal rules are mainly influenced by the political culture. The coalition of actors is formed by shared policy-goals or programmes, for example, created by institutional frameworks (Wiering & Immink, 2006). They operate in a specific policy-domain. Otherwise, policy discourses use common concepts, ideas and categories which give meaning to the social construction of the problem (Van Tatenhove et al., 2000).

The space in which a discourse can operate depends on the coalition of actors, power and resources and rules of the game. These aspects are important for the process while the concepts and ideas are severely influenced by the dominant discourse. The combination of ideas by discourses and the (constitutional) organisation form policies.

It is argued that because of the interrelation between stakeholders and their changes in responsibilities, spatial planning needs to alter its role in order to anticipate on developments, think about alternatives, reflect and co-ordinate with stakeholders (Eggenberger & Partidario, 2000).
It is important to understand the concept of spatial qualities as well as its context. Embedding spatial quality cannot be separated from institutional contexts because institutes, private parties, citizens are inherently connected which influences how spatial quality is constructed.

Stakeholders often are interlinked or even considered to be partners in planning practises which can imply a rescaling of governance (Edwards et al., 2001). The partnerships are the result of a transition of the institutional framework (*ibid.*) which has occurred after changes in paradigm in water management, infrastructure and planning. Rescaling of stakeholders (e.g. by partnerships) can lead towards "a redistribution of power" in governance (Edwards et al., 2001: p. 290). As stated by them, the scale of governance is never the same.

Although spatial planning and other fields are heavily influenced by governance, in legal terms, in the Netherlands the heart of spatial planning still can be found at the municipal zoning plan (Needham, 2004). Other plans that are created are used for references or as a framework but are not as fixed and legally bounded as the municipal plan is. The zoning plan on municipal level is the only plan which is legally bound by law and therefore is important to take into account in the policy-making process.

One of the Dutch examples in spatial planning of governance is area-based development (in Dutch: *gebiedsontwikkeling*). The term area development has arisen since 2003 in order to describe a new way of spatial planning (van Rooy, 2009). Area development is not a new concept (Groeneveld, 2009). It has been used for some years, for example the VINEX residential areas are constructed by the characteristics of area-based development (Van der Cammen, 2006). Area development is the revision of cooperation between public and private stakeholders (Groeneveld, 2009). Area development differs from the original development planning by different relations between stakeholders (Dwarshuis & Van Rooy, 2005) which can be connected to trends in governance. In the area-based approach the status of the plan differs compared to classic spatial planning. Area-based development perceives the area at the centre of the plan rather than the plan is the heart of the area (Van der Harst, 2012). The integrative approach of area development is interlinked with the ambition of spatial quality (Groeneveld, 2009). In classic planning practises the (landscape)

architect created the final design for the area whilst in contemporary planning practises the architect has to be able to link stakes between participants (Van Rooy, 2006). In other words, the area is now closely related to projects rather than the project is detached from its surroundings.

Policy-integration

Concepts as 'area-based development', 'sustainability' and 'spatial quality' are concepts that cannot be linked to one sector but are considered to be integrative. The demand for integrating concepts into policies is increasing, but it is a hard job that depends on many factors (Geerlings & Stead, 2003). If the same problem with common objectives needs to be tackled by two different persons, each with a different view, it can be called integration (Eggenberger & Partidario, 2000). Earlier writings on policy-integration argue that the consequences for a policy have to be "recognised as decision premises, aggregated into an overall evaluation and incorporated at all policy levels and into all government agencies involved in its execution" (Underdal, 1980; p. 162). Integration of policies is part of the modernising spatial agendas and planning systems (Counsell et al., 2006; Nadin, 2007). This trend is not only visible in the Netherlands but also in the rest of Europe (Stead & Meijers, 2009). Policy-integration is interlinked with the emerge of governance (Albrechts et al., 2003). The implementation has a political context (Barret, 2004). It is argued that in Germany, Austria, Denmark, the Netherlands and the Scandinavian countries have a tradition in integrating policies (CEC, 1997). But also in other countries the physical environment is becoming involved in socio-economic development (Cameron et al., 2004). In literature it is shown that in order to let the policies work at every level, policies need to be reflected in all other related socio-economic developments (Lenschow, 2002; EEA, 2005). The demand for integration is not only the result of ambitions of the national government, but it is also originated in European policies such as the European Spatial Development Perspective. In 1999 the ESDP considers integration to be a key issue in spatial planning (Stead & Meijers, 2009). In 2007 the European ministers for urban development recorded that economic development has to involve environmental, social and cultural aspects as well (Territorial Agenda, 2007). One year later, in 2008, the European Green Paper on Territorial Cohesion requires an integrative approach including the involvement of stakeholders as well as authorities (CEC, 2008). Besides policy-documents, literature has also a severe amount of writings on policy integration, often related to slightly other concepts such as holistic government (Wilkinson & Appelbee, 1999), policy-coordination (Alter & Hage, 1993), inter-governmental management (Agranoff, 1986), network-management (Kickert & Koppejan, 1997).

Many conditions influence support to include spatial qualities into the method, process or policy. The support depends on; (1) political factors, (2) organisational factors, (3) economic factors, (4) process factors and (5) cultural factors (Stead et al., 2003).

Integration of a concept is more successful if there is a consensus on the development in politics (Halpert, 1982). The amount of common understanding relates to the way in which the integration is shaped. If there is a lot of resistance on including spatial quality in the process, much energy will be put into defending underlying reasoning (Challis et al., 1988). Alter & Hage (1993) argue that fear for rejection can be a barrier for the policy-integration. Secondly, organisational factors are of importance when implementing spatial qualities into the process. Bureaucratisation does not support integration (Halpert, 1982). The structures within the institutions and organisations need to be clear and transparent to work. The third factor of influence is related to economics. Resources need to be available to implement spatial quality into developments. Having sufficient resources limits uncertainty (Halpert, 1982) and shares risks (Alter & Hage, 1993). The amount of resources often and for a large part depends on economic situations within a country. Fourthly, process factors are important to address. Whereas organisational levels focus on internal organisational structures, the process focusses towards external practises. Communication is important for integrating (Halpert, 1982). Finally, cultural factors are of influence as well in integrating spatial qualities into policy-making. The perceived spatial quality is the result of a process between agencies and individual stakeholders (Stead & Meijers, 2009). Cultural factors can be seen on several levels. A culture of trust can improve the process (Stead & Meijers, 2009), or an organisation who aims to work with other stakeholders contribute to the public support of the outcome of the process (Alter & Hage, 1993).

Besides the five factors Stead et al. (2003) discuss, the integration of a concept in policies can be achieved through several levels. Partidario (1998) has identified five main levels of integration. The first level is referred to as substantive integration. This way of integration aims at integration at higher levels, to include emerging concepts of great importance (e.g. health or risks). The second way is a methodological integration. In this way spatial qualities can be implemented in the methodological assessment by governmental stakeholders (e.g. multi-criteria analysis or cost-benefit analysis) and by that, be taken into account. Thirdly, the procedural level – which is different from the methodological level – embeds the concept of spatial planning into the steps that are taken in order to assess spatial quality. In this respect, the methodology refers to the tools or frameworks provided by the government (e.g. GIS mappings, policy-framework). While the methodology is used top-down, the procedure is able to also use governance principles in the

process in order to assess spatial quality. Fourthly, the concept of spatial quality can also be integrated at institutional level in which will be documented that the organisation includes spatial quality in their (policy) developments. It is used as an ambition recorded in the articles of association. Finally, spatial quality can also be embedded in the policies their selves (e.g. sector regulations). Also the place in which these spatial values are embedded is important to address. A concept can be embedded starting from ambitions documents to the final implementation of the project. Embedding spatial qualities into legislation will influence the content and final outcome (Beunen, 2006).

Integrating a concept does not mean that the problem automatically is solved (Wiering & Immink, 2006). Because spatial quality is a complex without meaning (Miciukiewicz et al., 2010) different stakeholders can see different solutions to the same problem. How (integrative) policies are used, depends on the interpretation (Beunen, 2006).

Overview

Due to changing societal perspectives on the landscape (Antrop, 2005), canals gained another understanding over time. While created for their utilitarian value, canals are valued differently in contemporary society and can have a diverse set of perceived qualities. Changing perspectives and experiences have led to new paradigms in water management, infrastructure and planning. The conceptualisation of spatial quality does not only depend on its content, but is also influenced by organisational aspects - coalition of actors, power and resources and rules of the game – which make it possible to come to a policy-arrangement for embedding spatial quality.

Governmental institutions try to construct concepts using different approaches in the policy-making process, often related to governance. The different approaches have led to a shift in power relations. Spatial quality is not only based on the input of scientists or experts but the concept has become the area of multiple resources. Planners use ideological concepts in policies (Žižek,, 2002) as, for example, spatial quality, to express – often commonly shared – ambitions (Gunder, 2004).

Concepts remain often rather vague and therefore can reach a large public. It is important to acknowledge that many concepts are not static but are constructed by society and can change in time. One aspect of spatial quality is sure; the concept is hard to define (Hooijmeijer et al., 2001).

Science and practise need to cooperate to effectively work together (White et al., 2008). Research can provide a better understanding for policy-makers into the social context (*ibid.*).

Methods

Methodological grounding

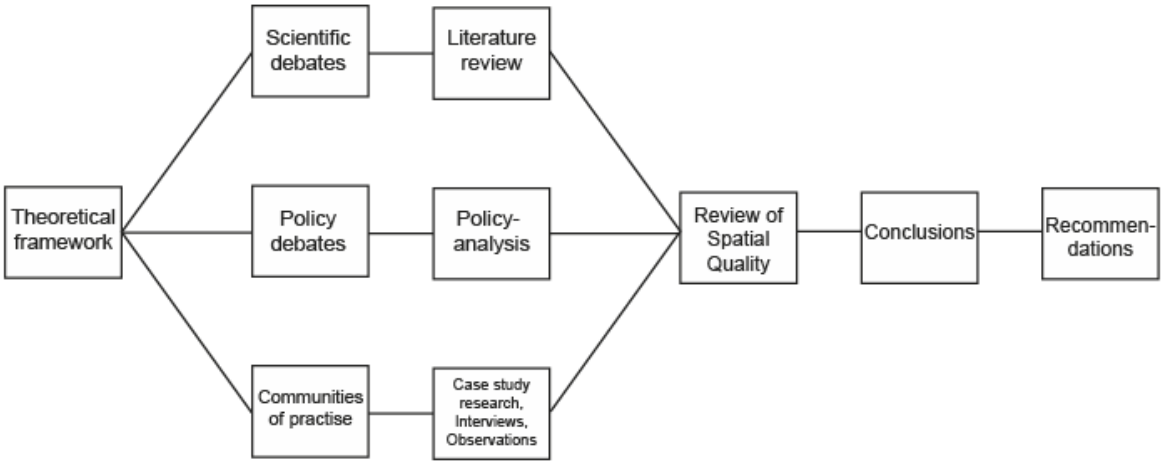
Societal and scientific shifts in water management, infrastructure and spatial planning have led to the inclusion of spatial quality. Although spatial quality has been researched in science, Rijkswaterstaat faces issues embedding the concept in practise. In planning many concepts are used to identify ideological ambitions (e.g. sustainability, surplus management). The concepts do not have a static meaning but meaning is constructed to the concepts by society. The content of spatial quality is severely linked with the organisational context in which the concept is constructed. Therefore this research will reflect on scientific writings, but also on policies and organisational aspects which form the basis for the operationalization of spatial quality in practise (projects).

The conceptualisation of spatial quality is different at the levels of science, policy development and implementation. In literature concepts as spatial quality are elaborated as social constructions. Planning practises are connected to an institutional framework which tends to construct the concept by utilitarian values. Due to shifts in paradigm this technocratic view is changing although there is still a severe connection between experts involved in planning practises. The position of discourses is severely interlinked with the production of knowledge and therefore with the definition of the concept.

Spatial quality adjoins several other concepts, such as place attachment, place identity, sense of place, and so on. These are important concepts that influence what humans consider to be valuable in the landscape. The concepts are of great importance but are not considered to be core concepts within spatial qualities. Although various geographical concepts can be linked with spatial quality, other concepts (e.g. place attachment, sense of place and others) do not match the formal definition in which spatial quality is conceptualised. However, methods related other geographical concepts are used as, for example, landscape values (e.g. Brown, 2006) or landscape perception (e.g. Conrad et al., 2011). This research aims to understand different conceptualisation and applications of spatial quality by using qualitative interpretations through scientific literature, policy-analysis, case-study analysis, in-depth interviews and anthropological observations. By that, the research creates a link between theory (e.g. scientific literature) and practise (e.g. canal projects) which enhances the results of the research.

The structure of the research

The conceptualisation and implementation of the concept of spatial quality is analysed through different contexts which can be visualized as follows.



Scientific debates

First, scientific literature will be review for a better understanding of the conceptualisation and application of spatial quality in science.

Data collection: At the heart of the literature review are two main aspects. First, scientific literature is reviewed to understand how spatial quality is perceived in literature and how the concept is constructed. The literature review will also discuss various geographical aspects that have strong connections with the concept of spatial quality. Secondly, the literature review elaborates on scientific discussions of the operationalization of spatial quality in policy processes. The review will discuss scientific writings that reflect on the policy-making process of spatial quality whilst the policy-analysis (see below) describes policy-documents embedding spatial quality.

Data analysis: The literature review will focus on how meaning can be constructed about the concept of spatial quality. It is important to explore, because there is no single or static meaning for of spatial quality. Scholars have issued diverse challenges concerning the translation of concepts in policies and looked for answer which methods are preferred to solve these challenges. Various perceptions and methods to embed spatial quality are discussed.

Policy debates

Secondly, policies will be described in order to understand the context in which the concept of spatial quality is conceptualised.

Data collection: The policy-framework does not discuss scientific literature on policies (see literature review) but describes policies concerning the concept of spatial quality in relation to canals. Various documents are of influence on the conceptualisation of spatial quality. The documents are divided in three (governmental) levels that are of influence on national canals: world level, European level and national level. Policies create a framework which can – or sometimes legally has to – be implemented in local projects on canals depended on the status of the document. The policy analysis provides a better understanding and includes a framework in which spatial quality is used in the policy-making process.

Data analysis: The policy-analysis elaborates on how spatial quality is perceived in literature. Definitions and elaborations of spatial quality in policy-documents are discussed. In addition, the organisational context of Rijkswaterstaat will be analysed. Rijkswaterstaat has a large input on the content and the context in which spatial quality is conceptualised.

Communities of practise

Embedding spatial quality cannot be detached from planning practises. Therefore this chapter will provide a better understanding in how the concept is perceived and used in practise.

Data collection: The data is collected through case study research, in-depth interviews and observations. The research aims to explore what role and status spatial quality has had within the project and how spatial quality is embedded in practise. The following projects have been selected for case study research[1]:

- Case study 1: a forth lock for Ternaaien _
- Case study 2: expansion of the Juliana canal
- Case study 3: expansion of the Wilhelmina canal
- Case study 4: bypass Zuid-Willemsvaart
- Case study 5: increasing the capacity of lock Eefde and the Twente canals
- Case study 6: transition from provincial management to national management
- Case study 7: maintaining spatial quality

[1] For a detailed description of the case studies, see appendix 1.

Projects are not bound to any size. Small-scale projects (e.g. sluis Eefde) and large projects (e.g. divison Zuid-Willemsvaart) are both analysed. The focus area of case studies is the Netherlands although one project (lock Ternaaien) is located in Belgium. Due to its location near the Dutch-Belgium border, minor parts of the project are located in the Netherlands. The Dutch influence on spatial quality within the Belgium project has been analysed. The case studies are located in diverse provinces: Utrecht, Gelderland, Noord-Holland, Friesland, Noord-Brabant and Limburg (Lock Ternaaien: Wallon, Belgium) and are part of various regional services of Rijkswaterstaat: Utrecht, Eastern-Netherlands, Northern-Netherlands, Noord-Brabant and Limburg. Thus, some of the services are based on provincial borders whilst others are inter-provincial. The case study areas are analysed through documents and interviews with key-figures of Rijkswaterstaat. Because spatial quality can be constructed in many ways, the interviewees need to have (empirical) knowledge of the concept. Other stakeholders are expected to construct spatial quality from their individual perspective.

Observations are used to gain an in-depth understanding through various planning practises. The cases of observation are linked with infrastructural developments on national level, but are not necessarily connected to canals (e.g. Zuidas A10 Amsterdam, N18 Varsseveld- Enschede). In order to have a better understanding about the history and context of (both analysed an observed) projects, documents (e.g. landscape plans or ambition documents) are studied. The documents provide a guideline to see how spatial quality is used within policy-documents related to each project. Hereafter, a relationship between spatial quality in policy-documents and in planning practises can be discussed.

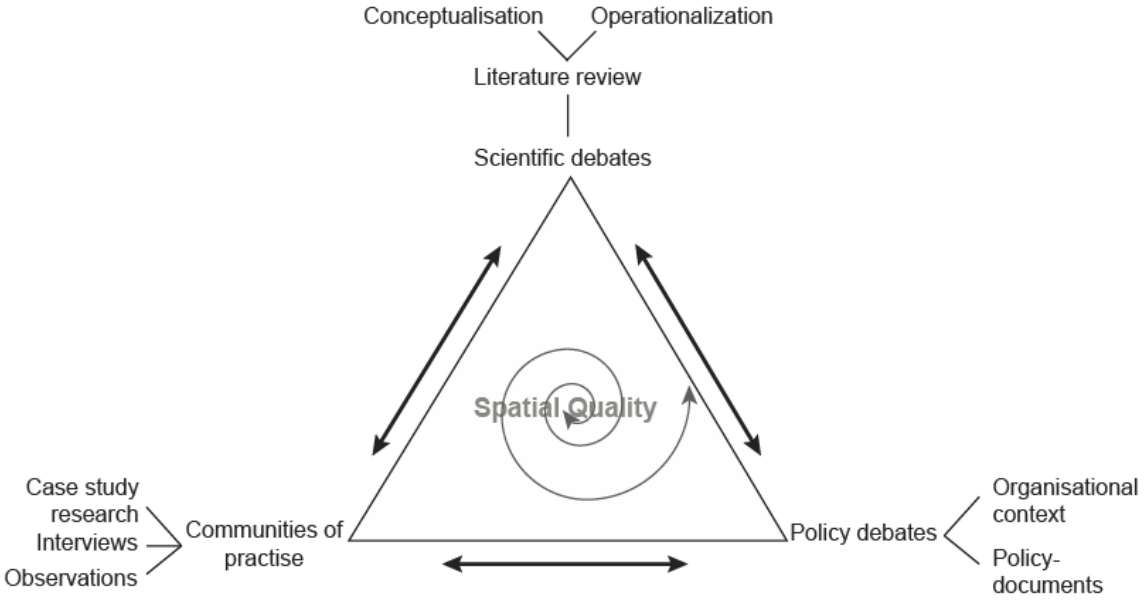
Data analysis: Case study research addresses the context in which spatial quality is implemented. Documents have defined ambitions and tasks for regional services on how to embed spatial quality at local sites. The selected cases are either finished projects on canals or projects that are in the realisation phase. Therefore the analysis can completely discuss spatial quality, from initiation phase (preliminary idea) to the phase of realisation (completion of the project). Besides that, an analysis of finished projects can also address how spatial quality is maintained after realisation. The interviews form the basis of how governmental officials perceive the concept of spatial quality in relation to specific projects. Governmental officials are at the heart of embedding spatial quality in canal projects. They form the connection between national services and (local) practises. Besides how the content of spatial quality is constructed, the interviews will also reflect on the process on operationalization.

The observations will provide an in-depth understanding of how spatial quality is discussed in practise. The observations do not focus on only canal projects but also take other infrastructural project into account (e.g. new roads, widening existing roads, construction of ecological riverbanks). The time for each meeting depends on the time that is agreed on by the project team, varying from almost 3 hours to a minimum of 1 hour. The observations have been conducted without direct participation of the observer in discussions, also referred to as passive participation (De Walt et al., 1998).

Triangulation of the research

This research studies one subject (the conceptualisation and application of spatial quality) in different contexts, using different sources and methods.

When a single phenomenon is analysed through at least three different sources it is considered triangulation (Decrop, 1999). Triangulation is used in qualitative approaches to address validity to the research (Rossman & Wilson, 1985). This will restrict personal or methodological bias (Decrop, 1999).



The use of multiple data sources in various contexts

Spatial quality is researched by analysing scientific debates through a literature review on the conceptualization and operationalization of spatial quality in science. Policy debates are analysed by looking at policy-documents that influence spatial quality on multiple levels and by analysing the organisational context of Rijkswaterstaat in which the spatial quality of canals is framed. In order to study the application of spatial quality in practise, the report will also elaborate on communities of practise by means of case study research, in-depth interviews and observations.

Spatial Quality: an Analysis of Scientific Debates

Spatial quality is a concept which is conceptualised in many different ways in literature. Spatial quality can refer to data, to landscape features, to economical costs, to air pollution and so on. Scientific literature also reflects on how spatial quality is constructed and applied in practises. Scholars often link it with other concepts used in the spatial planning arena.

The conceptualisation of spatial quality

What is spatial quality?

The concept of spatial quality is already seen in the year 60 B.C. where Vitruvius, an architect and engineer in the old Roman Empire, introduced it. Vitruvius used three conjugations, that is, *ultilitas* (utility), *venustas* (external beauty) and *firmitas* (strength) which he has written down in his famous book 'Architectura libri decem'. The book was used as a catalogue for the construction of Rome, by Caesar Augustus. Vitruvius has been cited in several Roman writings. In the period hereafter the works of Vitruvius disappeared until 1416 when the manuscript of Vitruvius was found again in the Swiss monastery of Sankt Gallen. In the following years, Vitruvius' definition of spatial quality has been applied to several buildings during the Renaissance in which his work was inspiring. In 1542 a Vitruvian Academy has been established in Rome. His work, including spatial quality, has been of great influence on scientists but has not often been seen in practise (Masterson, 2004).

In time, the concept of spatial quality has changed. In the industrial revolution, spatial qualities were perceived in characteristics as transport costs or labour costs linked to neoclassical theories (Assink & Groenendijk, 2009). As they elaborate further, since half of the 20th century urbanisation was an important aspect which dominated the conceptualisation of spatial quality. Starting in the 1950s onwards, the proximity to shops or services is an important factor in people's lives relating to the growth-pole theory. In the last (two) decades more factors were linked to the concept of spatial quality, such as environmental factors, governmental policies or recreational environments (Louw et al., 2004). According to Assink & Groenendijk (2009) an important shift in location preference can be seen. The integration of urban or rural areas is an important factor as well as the quality of the total development. Assink & Groenendijk (2009) argue that this is the result of a shift in economics from industrial activities towards knowledge based activities. Habiforum (2011) also acknowledged that spatial quality is changing over time.

In contemporary society spatial quality has many different understandings. Spatial quality can relate to, for example, a concept that is related to ecology and species (Opdam, 2002) or visual perception of the landscape (Arriaza et al., 2004). Spatial quality cannot be defined by science but is constructed through (a representation of) society. To maintain specific characteristics is important and requires a special approach (Gil et al., 2011).

The establishment of spatial quality

The search on how to construct spatial quality has led to various attempts. Literature elaborates on spatial quality and connects it with the effects it has, that is, economical value, social value, ecological value and cultural value (Dauvellier & Luttik, 2003).

	Economic profit	**Social profit**	**Ecological profit**	**Cultural profit**
User value	Accessibility, fine-tuning of functions	Public access, participation	Ecological gradients, structure	Water fronts, diversity
Future value	Attractiveness, image	Safety, Connectedness	Tranquillity	Beauty, contrast, individuality
Amenities	Stability, flexibility, safety hinterland	Public support for change, responsibility	Environmental friendly materials, robustness	Cultural heritage, renewal

Dauvellier & Luttik, 2003

This matrix does not only divide spatial quality into three components but also connects it to beneficial effects that the implementation of spatial quality can have (Hooijmeijer et al., 2003). However, the confrontation of values and effects does not provide sufficient handles to work with in practise (Jorna et al., 2006). Moreover, there is no weight attached to each subject. Every subject has the same value (Van Gerwen, 2006). Using a matrix also has positive effects. By this matrix the same aspects will be used an analysed in every case rather than changing criteria that will be used (*ibid.*).

Dauvellier & Luttik (2003) discuss three cases which have used their matrix to valuate projects. The outcome of using the matrix were findings as 'we want […] a close community' (social profit), 'sustainable water management' (ecological profit) or 'identity' (economic profit). These are words which do not say too much and are rather general. In their findings they perceive the matrix to be a good starting point for including spatial quality into projects although some major remarks can be argued. What is identity or what do participants perceive to be sustainable water management? It

is hard to define actions related to these findings. With respect to that, the results say as less as the concept of spatial quality. It can be argued that nobody opposes to these findings, but the interpretation of it can differ a lot. One of the other outcomes is that participants rank user value higher than future value. It is argued that one of the reasons is that participants are not able to see future value and, because of that, user value is the easiest to define (Dauvallier & Luttik, 2003). Whereas user value is ranked highest, future value is ranked lowest and social value in between them. Another issue that Dauvellier & Luttik (2003) address is that participants tend to perceive definitions broadly compared to policy-makers which can create (higher) expectations of the process. The content of the concept of spatial quality finally depends on pragmatic choices related to the project and strategic behaviour of stakeholders (Soeterbroek et al., 2003).

Weebers (2013) has connected the matrix of Dauvellier & Luttik (2003) with a layer-based approach often used to conceptualize sustainability. The layer based approach has been used in planning for many years. The approach exists out of three main layers: (1) spatial use of short term (0-40 years), (2) networks which provide structure in spatial use along (25-80 years) and (3) the foundation (soil) in which changes take centuries. In the matrix of Weebers (2013) these layers are connected with the three criteria of spatial quality (user value, future value and amenities).

	Layer-based approach	**Profit (economical profit)**	**People (social profit)**	**Place (cultural profit)**	**Planet (ecological profit)**
User value: diversity	Spatial use	Mixed use	Access and freedom of choice	Diversity and meeting grounds	Clean and safe
Amenities: identity	Networks	Attractiveness and image	Connection and safety	Identity and beauty	Natural living-environment
Future value: frugality	Foundation	Stability and flexibility	Public support in own environment	Heritage and integration	Healthy ecological (soil) systems

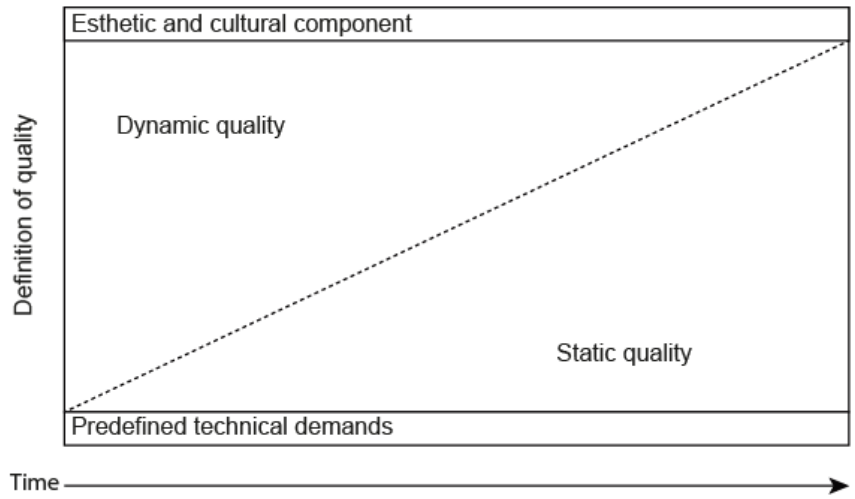
Adapted from: Weebers (2013)

Although minor differences in definitions appear, the layer-based approach of sustainability has many similarities with the matrix used to conceptualize spatial quality. The major difference is that in time, the search for measurable indicators for spatial quality has disappeared whilst sustainability is perceived to be (at least partly) measurable (Weebers, 2013). Whereas sustainability can be perceived as long-term aspects (e.g. CO2 emission, life-cycle, etc.) spatial quality cannot be put on a checklist and is closer related to integrative aspects of a 'good' qualitative planning project (*ibid.*). In that respect sustainability has a more normative character than spatial quality. Spatial quality has focused its attention to inter-subjective evaluation (*ibid.*).
One of the main issues of both matrixes is that all aspects have the same weight. There is no differentiation between values. Ellen et al. (2002) argue that the valuation is project depended. They discuss on TNO's research on four main divisions. TNO has divided the focus of the project in (1) a pizza-based scenario in which the foundation is the most important value, (2) a lasagne based scenario in which every layer gets attention, (3) spaghetti scenario in which the layers are not separated but are linked to each other, (4) a ravioli scenario in which every stakeholder optimises their own layer-based stake.

Bartlett (2012, p. 2) connects the use of sustainability to the fairy-tale of Alice in Wonderland, as he quotes Humpty Dumpty; "When I use a word, it means just what I choose it to mean, neither more nor less". Barlett also argues that because of the deficit, in terms of content, everybody is able to become an expert on sustainability. Hence, everybody wants to be sustainable. The concept of sustainability is used as a continuum (Hajer, 1995) in which there is a common understanding (that is, to be sustainable) but major differences occur in the detailed interpretation of the concept. During the years sustainability has become more complex rather than less complex due to its growing amount of different meanings (Jickling & Wahls, 2007).

Valuing quality

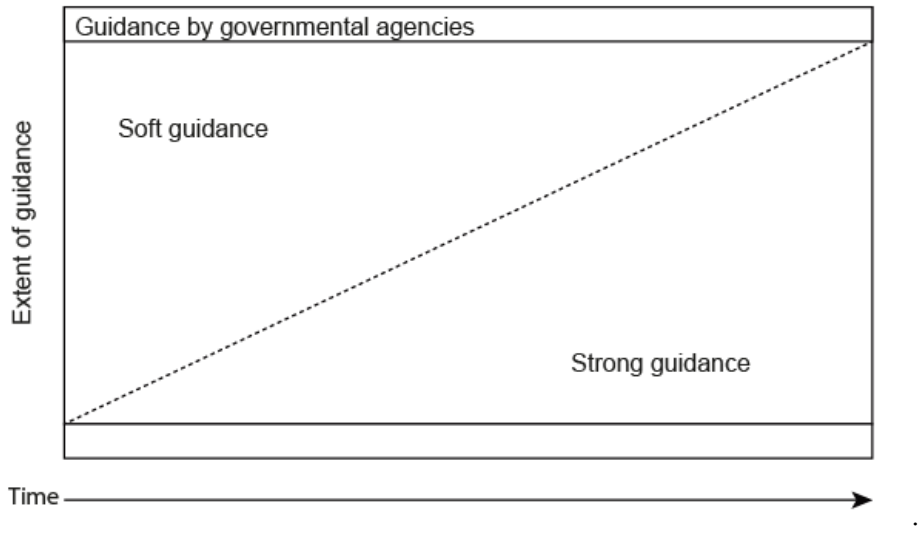
Several attempts have been done to create the good, better or perfect city (Gunder & Hillier, 2009). The 'good' has been the subject of many researches (Campbell & Fainstain, 2003; Healy, 2005; Sandercock, 2003). Good can refer to many things. In 2004 (Nota Ruimte) the government – by the ministry of public housing, spatial planning and environment (VROM) and others - defined spatial quality as inter-subjective. When spatial quality is projected on an area there is no definition of *the* spatial quality. Spatial quality changes and is a dynamical process rather than a static way to measure projects (Van Gerwen, 2006).



Adapted from: Van der Toorn Vrijthof & Talstra (2004)

Static spatial quality is elaborated as the extent to which quality meets predefined requirements (Van der Toorn Vrijthof & Talstra, 2004). This definition implies that spatial quality can be measured among predefined aspects. In project planning spatial quality has also dynamic aspects. Then spatial quality is not predefined but is given meaning to during the process of the project (Van Gerwen, 2006). In the dynamical aspect of the concept spatial quality has to be contextually operationalized by stakeholders.

Another distinction in spatial quality that Van der Toorn Vrijthof & Talstra (2004) discuss is the difference between strong guidance and soft guidance of the government. Strong guidance is linked to static use of the concept in which requirements need to be met. Soft guidance relates to process management and a dynamic meaning of spatial quality (*ibid.*). But both definitions are interlinked. Over the process a shift is seen from dynamic process management towards a more static project approach (*ibid.*)



Adapted from: Van der Toorn Vrijthof & Talstra (2004)

Values in the landscape have become complex to handle. Contemporary society is focussed individually and is not based on traditional values any more (Bauman, 2000). Social values and norms are blurred (Janssen-Jansen et al., 2011). Values on what the quality of canals is are not commonly shared anymore. Values originate in individual preferences rather than being defined by social institutes, for example, a church. The individual focus results in many meanings and a decrease of authority (Janssen-Jansen et al., 2011). This will be visible in defining spatial quality as well. Involving many meanings makes defining a concept difficult and explains why concepts (e.g. spatial quality, sustainability, identity and so on) have many meanings (*ibid.*).

Concepts in literature

There is almost no scientific international literature on spatial quality (Janssen-Jansen et al., 2011). Almost only Dutch scholars discuss spatial quality. Albeit spatial quality cannot be seen in international planning literature it is discussed but somewhat hidden. In early literature on spatial planning, the concept cannot be seen directly but is linked to usage of space and how people practise space (Rapoport, 1970). Other authors (e.g. Lefebvre, 1974) also discuss the transformation of space. But most authors do not define spatial quality or even quality (Miciukiewicz et al., 2010). Authors often refer to the other concepts, such as landscape values, identity, sense of place, attachment and so on (e.g. Hay, 1998; Raymond & Brown, 2007; Stedman, 2003; Gustafson, 2001). Others focus on design (e.g. Carmona et al., 2003; Gehl, 1987). Landscape quality is one of the most used concepts that can be related to spatial quality (Janssen-Jansen et al., 2011). American scholars often use environmental quality which is often related to environmental issues on nature and living space (*ibid.*).

Main concepts in scientific literature that have strong connections with spatial quality are: place, sense of place, attachment, identity, the quality of public areas and place branding.

Place

In English 'place' often refers to a general location. In geographical terms place refers to a more specific location where a person can feel attached to (Hay, 1998). What is important to address is that this feeling is dependent and differs from person to person. That is, if a person is more widely travelled the bond between him and the surroundings can cover a wider area than other persons. If a person lives in that place the feelings of that place might be even stronger. The environment does not have an intrinsic value but through experience human interpretation constructs meaning about the surrounding landscape (Stedman, 2003). Then that person develops a sense of place (Hay, 1988; 1990). People would create feelings for that specific place. According to Hay (1986), it can be seen as "an anchor for his or her identity". As Stedman (2003) discusses, in social sciences there are three main properties assigned to the concept of sense of place; (1) the place exists out of a physical setting in which (2) human activities take place, and last, (3) human social and psychological processes are rooted in the setting (Brandenburg & Carrol, 1995). As Stedman (2003) discusses, the place is also assigned by symbolic meanings that contribute to the sense of place. As Kant discussed; "*Das ding an sich ist ein unbekannte*" (Van Assche, 2004). A lot of the literature focusses on place as being a social construction (e.g. Hufford, 1992; in: Stedman, 2003). Other scholars perceive sense of place to be incorporated with landscape (e.g. Shumacher & Taylor, 1983; Ryden, 1993). As these scholars elaborate, perceived experiences are dependent on the features that are present in ones surroundings (e.g. Jackson, 1994).

How humans make sense of the world is expressed in places (Davenport & Anderson, 2005), constructed by spatial, social and physical patterns. Several geographers have expressed a relation between space, emotions, meanings and experiences people attribute to that space in which it becomes place (see Relph, 1976; Brandenburg & Carroll, 1995; Williams et al., 1992; Moore & Graefe, 1994). Space has value whereas place is seen as blank (Ryden, 1993).

Space is also seen as the opposite of place (Tuan, 1977; in: Stedman, 2002). Space is not attached to meanings or feelings whereas place is. Tuan (1977) elaborates that a place is the space where values are made concrete. Every person has its own value. Therefore a single space can exist out of multiple places, each attached to their own value.

According to Stedman (2003) space turns into place through personal experience. Relph (1976) argues that the person who has spent the most time in an area has the strongest bond to the place.

Sense of place

In contemporary geographical studies sense of place has been a point of attention (Kaltenborn & Williams, 2002). It can be seen as the emotional bond that people have with a place (Altman & Low, 1992). The concept often links to people who live in an area and therefore is determined by residential status (Hay, 1998). As Hay elaborates further, people who do not live in a certain area (e.g. tourists or travellers) do not have the same strong attachment to a place inhabitants have, often influenced by being raised in that same area for a large part of their life. Then there is also a sub-concept of place. Everywhere this concept is understood differently. Most people in Western-societies do not live in one place during their lifetime (Tuan, 1980). In other parts of the world (e.g. in some part of the continent of Africa) people remain living in the village or close surroundings where there were born. This theory states that people, who live in the same place for a longer period of time, would be provided with a bigger sense for that specific place (Gustafson, 2001). Mobility can be a factor that might threaten sense of place although that does not has to. The second perspective favours mobility rather than the sense of place. As Gustafson (2001) elaborates further, both perspectives see mobility as the opposite of sense of place or place attachment yet value it differently. Mesch & Manor (1998) argue that there are other, more important elements of creating a sense of place. According to them, physical and social structures are having a major role in belonging or feeling attached to a place, even "at a time of high geographical mobility" (p. 518).
As sense of place often is linked to the length of one living in a certain area, place attachment is linked to that idea as well (Manzo & Perkins, 2006).

Attachment

Sense of place also refers to the concept of (place) attachment (Williams & Stewart, 1998). Place attachment is linked to the field of environmental psychology and can be seen as the equivalent of sense of place in the language of a geographer (Brown & Raymond, 2007).
The concept of place attachment links to a positive bond between people and their environment (Moore & Graefe, 1994). According to Davenport & Anderson (2005) most scholars agree on the basic definition of place attachment, generally perceiving this concept as an emotional bond between people and places (e.g. Tuan, 1980; Williams et al., 1992; Cuba & Hummon, 1993). There are many other concepts which take the same definition into account yet are called differently (Hidalgo & Hernández, 2001) such as community attachment (Kasarda & Janowitz, 1974), place dependence (Stokhols & Shumacher, 1981), place identity (Proshansky, 1978) and so on. Hidalgo & Hernández (2001) agree that it is confusing and argue that this confusion has led to minor progress

in research (e.g. Lalli, 1992; Giulani & Feldman, 1993). In contemporary literature the term of place attachment is often used in order to recapitulate these concepts into one term.

Several studies (e.g. Brown et al., 2003) also link the concept of place attachment to the way in which people behave. Citizens who face (re)developments in their surroundings will have a different reaction and intention to these plans when they feel more attached to that place than others who do not (Manzo & Perkins, 2006).

Place attachment is able to let people feel and act in a certain way. These power relations are present in physical surroundings and in how everyday space is used (Manzo, 2003; Dixon & Durrheim, 2000). For example, a person lives in a certain area, with a specific type of houses in specific (street) patters. As research shows (Cresswell, 1996; Hayden, 1995; Yaeger, 1996), participation in neighbourhood processes and how we use space is heavily influenced by a person's gender or class.

Contemporary literature emphasis on a landscape as being more than just geographical blank space but meaning is being attached to it by dynamic characteristics. Also in resource management this has become a widely accepted paradigm (Brandenburg & Carrol, 1995). In social studies place attachment has focussed on communities or neighbourhoods (Brown et al., 2003; Woldoff, 2002).

Identity

Places are perceived and influenced by physical factors, but also by activity and meaning (Montgomery, 1998). The meaning assigned to a place is influenced by physiological and social processes (Stedman, 2002; Stokols & Shumaker, 1981). In other words, the meaning is not only formed by physical settings but also by complex processes between people and their environment.

By giving a place meaning and feeling attached to that place it appends to one's identity. Therefore the concept of place identity is closely related to sense of place and place attachment.

Place identity has become of importance for research because of its relation with place attachment (Wester-Herber, 2004).

Mannarini et al. (2006) address a gap in research because of a missing link between these concepts. Hernández et al. (2007) discuss even more issues regarding the concept of identity. As they argue, several authors tend to give several concepts the same meaning although there are some minor differences of interpretation. Identity can be perceived as a concept on its own. But identity also can be perceived as being a sub-concept of place attachment (Lalli, 1992). The sum of both, identity as well as place attachment, can also be perceived as belonging to the concept of sense of place (Jorgensen & Stedman, 2001). Hidalgo & Hernández (2001) argue that there has not been full

agreement on these concepts which makes it hard to define them. Ujang (2012) discusses that urban and rural developments have focused on physical settings. As Ujang elaborates further, design research in urban and rural development does not completely understand the concept of sense of neither place nor place identity.

Place identity is part of personal identity (Hernández et al., 2007). According to Proshansky et al. (1983) this identity is not restricted to single persons, but also to objects in their surroundings. As Moore and Graefe (1994) argue, place identity is influenced by physical surroundings but is also heavily influenced by emotional factors of environmental experience. It is a reciprocity between factors that creates identity.

Several researches have shown that four main processes can be extracted that influence place identity: (1) the distinctiveness of a place (e.g. being in Amsterdam and not in Hong Kong), (2) the continuity of a place (e.g. reminders of your childhood in a place), to what extent a place creates self-esteem (e.g. feeling part of a rural community, not closely linked to metropolitan areas) and (4) the self-efficacy of a place (e.g. daily needs are present) (see the researches of e.g. Twigger-Ross et al., 2003; Breakwell, 1992, 1993; Twigger-Ross & Uzzell, 1996). These factors are both social as well as physical.

Sense of place, place attachment and place identity are concepts that do not differ much from each other. These are important concepts in order to understand how people can perceive public space. Public space is blank (Ryden, 1993). Only when people construct it, it can become a place. This counts for spatial quality as well; the concept is defined according to how society constructs it.

The quality of public areas

Another approach related to place, sense of place, attachment and identity is the quality of public areas. It is the domain of (behavioural) geographers or urban designers.

There are many types of public areas, from large metropolitan areas to small-scale rural areas. The physical component of an area can be very broad. Shamai (1991) relates the emotional component of place attachment to the (physical) symbolism of a place. Lynch (1960) elaborates on how landmarks, paths or edges influence people's behaviour and social code. Symbolic elements (e.g. landmarks) are clearly physical components relating to social or emotional aspects. There are also in-between factors that are not direct physical components but are heavily influenced by the physical settings in an area. For example, pedestrian movement heavily influences people's perception (Jacobs, 1961) as shown in the research of Shuhana et al. (2004) of shopping streets in Malaysia. As Shuhana elaborates further, attractive areas have a direct relationship between

purposes and attractiveness. In the example of Malaysia, Shuhana shows a relation between building uses, activities that take place and kind products that are sold in the surroundings.
These are general aspects which need to be taken into account. Without regard to concrete landscape values, it can be argued that public space at least need to be clean (Ujang, 2012), offer physical comfort (Carmona et al., 2003) and should be safe (Gehl, 1987).

Place branding: promoting spatial qualities

Because of the dynamical and context-related meaning of spatial quality (Hooimeijer, 2000) it is hard to relate the concept to a single point of view. But some of the qualities of an area are used for promotion and seem to have a common understanding. Place branding promotes (often spatial) qualities of a region. On the one hand, this concept is an example of how people see the landscape or how they perceive the value of space. Marketers develop a strategy to use perceived strengths of the landscape to brand the area. It is often used in areas relating to tourism, international relations or for local beneficial goals (Papadopoulos, 2004). On the other hand, it does not necessarily have to be a concept that uses strengths of the landscape. Place branding might also focus on how people want to see the landscape, not necessarily how it is. Van Assche & Lo (2011) argue, meanings, or reactions, to places or their history are not necessarily positive. As they elaborate further, the identity of a place is not perceived as a single identity. Where a place creates a positive identity for a person, it might feel negative for another person. Besides that, it is also not feasible to brand a place in a single way. One of the main issues of place-branding is that a place can be replaced by others (Moilanen & Rainisto, 2009). One of the challenges of the future is to brand a place by its complete character which will cover a possible replacement. In the past, the focus was often on single characteristics (e.g. location A: 'we are green' while destination B is at least as green). Yet multiple factors are hard to define and therefore difficult to brand a place. A place is not just a single subject; it is a complex product related to networks and services (Moilanen & Rainisto, 2009).

Where place identity is a widely shared concepts (e.g. in the works of Hildreth, 2010; Anholt, 2009) place branding has been a focus of marketing and corporate branding (Van Assche & Lo, 2011). Place branding is a different concept. Van Assche & Lo (2011) compare place branding with spatial planning; "there is no formula that works in every place". Most of the branding institutions (often municipalities or tourist organisations) want to construct a place. For example, place X is 'green' and place Y is 'vibrant'. Municipalities focus on one topic that should enhance the region. That creates blind spots (Hansen, 2010).

Baker (2012) does not provide a definition but elaborates on four main questions that are at stake when an institution is likely to brand their surroundings in a certain way. According to him, four questions need to be asked when regions want to brand their selves; (1) what can we be known for, (2) how can we stand out from the crowd and be more competitive, (3) what thoughts and feelings do we want to come to mind when people are exposed to our name and (4) how can we gain improved results from our resources? This would seem to be a rather simple solution. By filling in these questions, answers can be extracted which will led to solutions. But places are not homogeneous (*ibid.*). There is no single answer on a question.

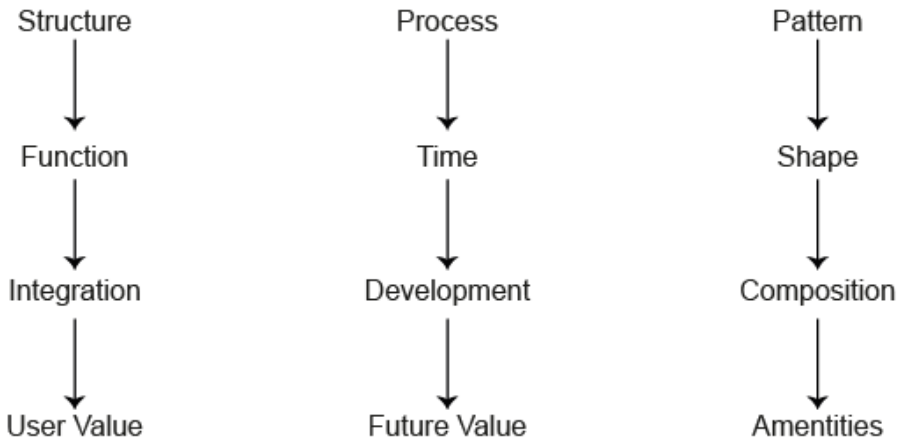
Place branding is a concept becoming familiar in environmental sciences. The concept of place branding has already been used for several decades but, for environmental sites, the use of the concept began to appear in the 1990s (Baker, 2012). As Baker argues, branding is often used because of financial benefits, although personal thoughts also can have political or social value. Place branding links to the identity of an area, what do "we" (the inhabitants) think of as important? There seems to be a common understanding in landscape characteristics.

Place branding is more than only creating slogans and good-looking images (Van Ham, 2008). Feeling attracted to a place is taking into account "the totality of thoughts, feelings, associations, and expectations that come to mind when a prospect or costumer is exposed to an entity's name, logo, products, services, events or any design or symbol representing them" (Lindsay, 2000). Besides working in a single way, that is, from the image to the costumer, it also has to have a positive effect from the costumer to a country's economy and its inhabitants (Van Ham, 2008). Because of the positive effects on the landscape quality it should be part of place branding (Tobias & Müller Wahl, 2013).

The operationalization of spatial quality

Involving concepts in spatial planning is the result of a crisis in spatial planning (Dauvellier, 1991). In the 1970s many policy-documents have been written. The documents are the result of a strong central government in the 1960s and 1970s. In the 1970s policy-makers asked themselves whether these documents added value to spatial planning (*ibid.*). The crisis in spatial planning was the indirect result of the urge of the growing number of documents (*ibid.*). The National Planning Agency (*Rijksplanologische Dienst*) argued that spatial planning had a value, without regard to all the prescribing documents. They discussed the aim of spatial planning as defined in 1974

(*Orienteringsnota, Ministerie van VROM*). The second part of the goal of spatial planning was to enhance diversity, cohesion and sustainability (*ibid.*). In policy-making these three main goals were closely linked to the three aspects of spatial planning, which are, pattern, structure and process. These components have been used in spatial planning for many years. Also the definition of spatial quality, as defined in the Fourth Note on Spatial Planning (1988) originates in the three layers of structure process and pattern.



To: Dauvellier (1991)

The same organisation that defined spatial quality in 1988 – ministry of VROM – has reviewed the concept in 2011 again. The Council for Living Environment and Infrastructure (hereafter: VROM-council) shows deficiencies in the using spatial quality almost 20 years after its inclusion in policies. As they argue, spatial quality has been disconnected from spatial planning. Spatial quality is a concept that faces severe challenges in implementation into projects. The VROM-council discusses that spatial quality often is lost during the process. But spatial quality is also considered to be an important concept which is discussed in society as a result of, amongst other, a higher public demand for quality of the living environment (Reijndorp et al., 1998, VROM-raad, 2009). The VROM-council (2011) acknowledges that spatial quality is an abstract concept which can be perceived differently depending on each person. It is not possible to objectively define spatial quality. They conclude that in projects spatial quality is often linked with aesthetics which differs from the official definition of user value, amenities and future value. They perceive a difference between the theoretical definition and practical implementation. The VROM-council advises to determine spatial qualities together with local stakeholders instead of top-down. To give meaning to spatial quality is to include it into "leading societal themes" (VROM-council, 2011; p. 40). One of the examples they address is "sustainable urbanisation" (VROM-council, 2011; p. 41).

Reflections on policy-making processes

The meaning of spatial quality in policy-making is relatively open for discussion. Literature often advocates the involvement of stakeholders to construct spatial quality. Also in practise this has often led to more participation, a result of the communicative turn in the 1990s (Woltjer, 2002). Various projects have involved stakeholders. Several words have been used to express this, for example, interactive-decision-making, open plan-making or consensus planning (*ibid.*). The idea of participation is that stakeholders are earlier involved in the process than to the formal consultation after the decision has been made (Woltjer, 2002). Although several planning processes embed stakeholders into the projects, infrastructure planning does not have a strong focus on the inclusion of stakeholders (*ibid.*).

There are two underlying differences in defining spatial quality through stakeholders' participation. Why stakeholders have to be involved in the processes can be based upon normative assumptions or participation can be argued to have an instrumental value.

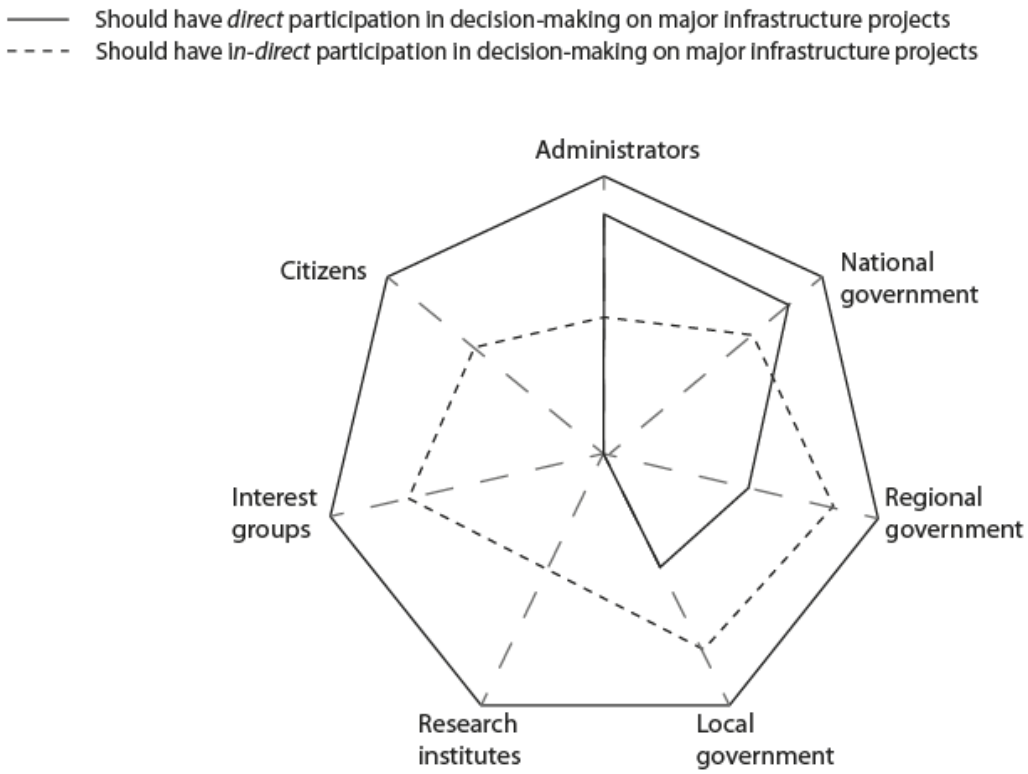
Normative	Instrumental
• Functioning of democracy: —democratic legitimacy of the decision-making process —emancipation and self-development of citizens —direct or indirect involvement of citizens • Functioning of the constitutional state: —promotion of interests —protection of interests	• Influence: —make one's specific interests felt —gain control • Effectiveness: —additional source of knowledge, argumentation, ideas and information. —broadening of public support for specific decisions • Efficiency: —gain time —save money —prevention of objections and appeal

Woltjer, 2002

Normative epistemology is related to direct democracy on behalf of a good constitutional state (Jolles, 1974). As Woltjer (2002) argues, direct democracy should enhance the legitimacy of the process through the opinion of people.

On the other hand, using participation as an instrument is more related to the effectiveness of the planning process. It can enhance public support and creates new and improving ideas (Woltjer, 2002). Planning policies in the Netherlands are linked to the second (instrumental) type of use of a participatory approach. Policies perceive participation to create efficiency in the process, public

acceptance and better outcomes (e.g. see *Rijkswaterstaat,* 1997; Altena, 1997). Amongst general concerns on participation as elaborated before, especially in infrastructure planning, it might be too complex to give stakeholders direct influence (Woltjer, 2002). Although spatial quality is a concept that is highly subjective, it also includes a certain amount of technical expertise which needs to be taken into account in practise. Therefore, governmental institutions cannot take stakeholders opinion for granted which might decrease the support of a plan. Even more, stakeholders do not want to participate when it is unnecessary (Latour, 1987), for example, when their opinion is degraded due to higher valued technical expertise. In the Netherlands participants are included in the process but are not completely active in the planning-process (Woltjer, 2002). They also do not have any kind of responsibility. In this institutional involvement governmental agencies (e.g. municipalities, provinces, Rijkswaterstaat or ministries) are responsible for the process and implementation of a project.

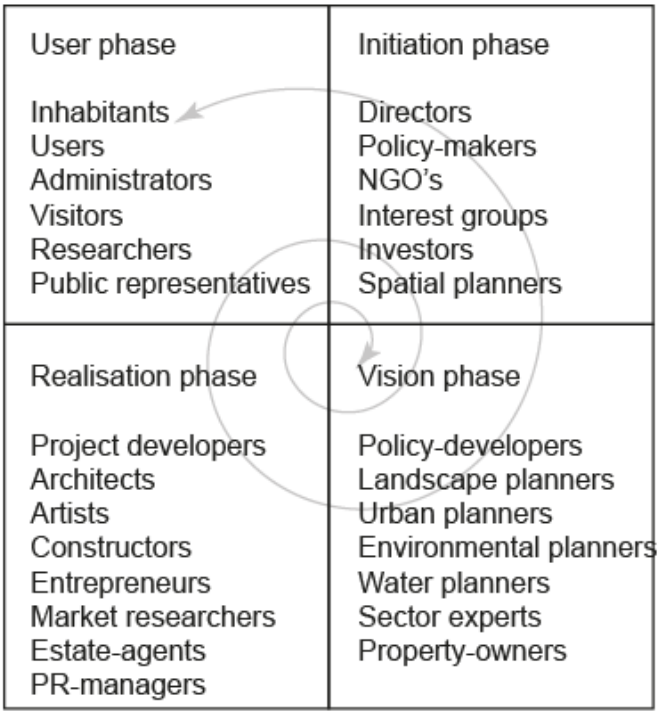


Adapted from: Woltjer (2002)

According to many planners, the question whether a certain group should participate directly or indirectly shows that most planner consider the government to take decisions (direct) whereas other groups (e.g. interest groups or local citizens) should only have an (indirect) voice in the process (Woltjer, 2002). The image shows that in infrastructural projects the technocratic discourse

is dominant. Most experts would aim for an expert-based approach in infrastructural projects (*ibid.*). However, literature on spatial quality argues that spatial quality cannot be defined by experts. The heptagon shows that there is a difference in how scholars and governmental officials in practise perceive the concept. The implementation of a subjective concept within a technocratic framework is considered to be a challenge (Goverde, 2012).

Dauvellier & Luttik (2003) have created a framework in which the quality of a place can be determined. The framework is based on involvement of experts as well as on local stakeholders, for example inhabitants or visitors.



Adapted from: Dauvellier & Luttik (2003)

The framework has four main stages which interact with each other. In every stage certain stakeholders are involved in the process in order to create the most sufficient outcome in each phase (Dauvellier & Luttik, 2003). Besides the framework for stakeholders' involvement, Dauvellier & Luttik (2003) also created a specified programme to deal with spatial quality. Their programme is a detailed schedule which outlines several steps that would lead to defining spatial quality within a certain area. The handbook elaborates on specific steps which are limited to time. For example, amongst others, the first day exists out of an excursion to the area and the outlining of so called quality profiles. The quality profiles give an indication of what the attendees of the

meeting think is a quality of the area. The second day is scheduled for the development of more specific scenarios. Finally, the scenarios are a starting-point for further elaboration.
On the basis of the interlinked stages is an ideological situation in which every of the mentioned stakeholders are equipollent represented, which is rather questionable regarding earlier experiences with participatory approaches.
The overall remark on this handbook is that the definition of spatial quality depends on the area. When it is desired to define the spatial quality of an area, the approach depends on whether the area concerns a municipality, a region, a province or beyond. Not everything can be visited in an area, especially not in larger projects. Therefore the starting point of the meetings, that is, the excursion, is highly subjective. The organizing institute is able to choose strengths in the landscape which can enhance their own story. Another remark is at the initiation phase. In this phase mainly governmental officials are active (e.g. directors, policy-makers or planners). Besides that, interest groups are also represented in this phase. Hence, it is argued that their inclusion is not legitimate. Why are only grouped stakeholders involved whilst individuals are not involved? Purely involving interest groups would leave an important group out of the process, that is, inhabitants. As elaborated before, the exclusion of individual non-grouped stakeholders is considered to be an issue in participatory processes and leads to democratic deficiencies.
What has to be questioned is that willingness of stakeholders to be involved in this process concerning relatively long days (generally from 9 am till 5 pm).

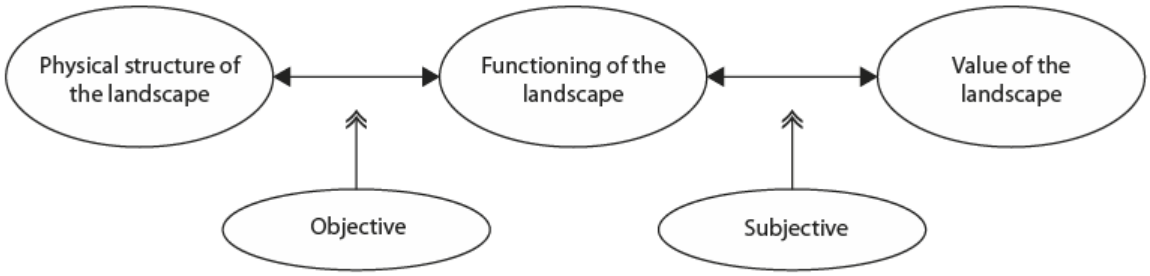
Spatial planning processes face some severe challenges that are factors of failure. Examples of these factors are; the complexity of procedures, political movements during projects, changes in policies, unclear agreements and so on (Van der Cammen, 2006). Spatial planning needs to take societal, ecological and economic consequences into account in the future (Needham, 2007). The satisfaction of spatial planning projects becomes less due to increasing complexity (Van der Cammen, 2006).

It is clear that spatial quality is not only a definition but it is also related to the process (Groeneveld, 2009). The content of the plan and the process cannot be separated (*ibid.*). Spatial quality needs to be monitored in the process and is dependent on more than purely spatial factors (De Ruyter, 2011).

Valuing the landscape

The process of valuing what are spatial qualities is highly subjective. Contrary, in the technocratic field of canals, reflections on planning practises show that assessing the landscape is often perceived as objective. Hence, good spatial quality does not aim for utilitarian values as John Stuart Mill or Jeremy Bentham would consider – the greatest good for the greatest number (Friedmann, 1987) –although planners might be looking for absolutist answers (Gunder & Hillier, 2009). However, urban designers try to value a 'good' design by measuring the relation between the design and its effects, for example, crime prevention (Gunder & Hillier, 2009) or the attractiveness of paths in order to prevent obesity (Middlemiss, 2008). Through the creation of self-competencies urban designers create a better life and a good city (Gunder & Hillier, 2009). Research has showed that some elements are likely to be able to predict whether a space is perceived to be good or not (see Berlyne, 1960; Gehl, 1987; Carmona et al., 2003). Several aspects of the landscape have been researched and refer to innate preferences, something that is in us without the influence of culture, age, ethnicity and so on. For example, the variety of edges is of influence on landscape preferences (Bell, 1999). Also other indicators that advocate the naturalness of the landscape (e.g. woodland patches or the pattern of succession) support landscape preferences. Several theories acknowledge the importance of a natural landscape (Kellert, 1996) which urges the restorative effect of nature (Kaplan & Kaplan, 1989; Ulrich, 1979).

An objective description differs from a prescription. In their research, Termorshuizen & Opdam (2009) discuss landscape aspects that can be objectively measured and other aspects that are subjective.



To: Termorshuizen & Opdam, 2009; in: Janssen-Jansen et al., 2009

The scheme is considered as a good approach to discuss the value of the landscape. Of course, the description of the physical structure of the landscape is not objective as is argued by Termorshuizen & Opdam (2009). On some aspects more emphasise will be put than on other aspects.

Especially when the structure is described connected by institutional ambitions in projects, it cannot be called objective. Hence, the description is a good way to let stakeholders understand the interrelation between separate landscape elements. A description of the landscape is considered to be a good starting point for discussion.

Reflections on practise

It is important that the inclusion of spatial quality is embedded into the process as well as the final realisation of the project (Dauvellier & Luttik, 2003). Yet spatial quality is often lost during the process. Spatial quality is often not monitored whether the project is developed as it should be on paper (VROM, 2011). In practise spatial quality is often embedded in the first phase. Spatial quality is often lost in the realisation phase where the discussion often focusses on other aspects, for example, financial aspects or the feasibility of the project (Van Buuren et al., 2010). One of the underlying reasons is that the other concepts or outcomes often can be expressed into monetary terms whilst that seems to be impossible for spatial quality (Albers, 2011).

To enhance the spatial quality within the project several resources can be used. Puylaert (2008) sees, for example, the installation of a quality manager in the project as a possible solution or a strict reflection after each phase. In Belgium this already has been implemented and is called the *Kwaliteitskamer* ("Quality Chamber"). This is a board exists out of experts on (landscape) architecture, urban development, accessibility, municipal development and so on. The board comments and approves public and spatial project proposals. In the Netherlands current policies oblige an approval through the welfare commission (*Welstandscommissie*). The welfare commission considers projects on local (municipal) level. The commission advices the mayor and the municipal council whether the project proposal is in accordance with the requirements that are embedded in the law. The welfare commission in the Netherlands mostly exists out of architects and a municipal officer. Their meetings can be visited by public. The welfare commission does not make any decisions but only advices the municipality which is an important difference. Therefore it is not possible to object to the decisions that are made by the commission but people can only object to decisions made by the municipality that can be the result of the advice. But this system does not stand strong anymore. Municipalities have larger questions that are related to more issues such as spatial quality which is more than purely exterior design. Therefore welfare commissions are extended with other experts involved which is often referred to as an 'Advisory Commission Spatial Quality'.

Overview

Literature elaborates on spatial quality as being user value, future value and amenities. The definition has been used for a long time although the concept has been constructed differently over time. Contemporary literature argues that spatial quality is not have a static interpretation and is socially constructed. It is interesting to notice that many scholars have focused on the conceptualisation of spatial quality. Hence, they do not take the institutional or organisational framework in which spatial quality is framed into account. Therefore science cannot connect to planning practises. Governmental organisations have a strong guidance and perceive spatial quality in a rather static way. Although explorations on spatial quality also acknowledge the concept to be socially constructed, reflections on planning practises look for ways to measure spatial quality. Although there is no consensus in literature how to conceptualize spatial quality, literature clearly shows that spatial quality is an inter-dimensional concept. Spatial quality is a challenge between various levels (Janssen-Jansen et al., 2011).

Spatial Quality: An Analysis of Policy Debates

It is important to take the institutional context into account in order to understand the context in which the concept of spatial quality is conceptualized. Researching the implementation of a concept is related to its institutional context (Beunen, 2006). Because policies are framed within a network, it is important to explore the policy-making process (Allmendinger & Haughton, 2009).

Let's start with an elaboration on the organisational structure in which the spatial quality of canals is conceptualized.

The organisational context: Directorate-General

Organisational structure

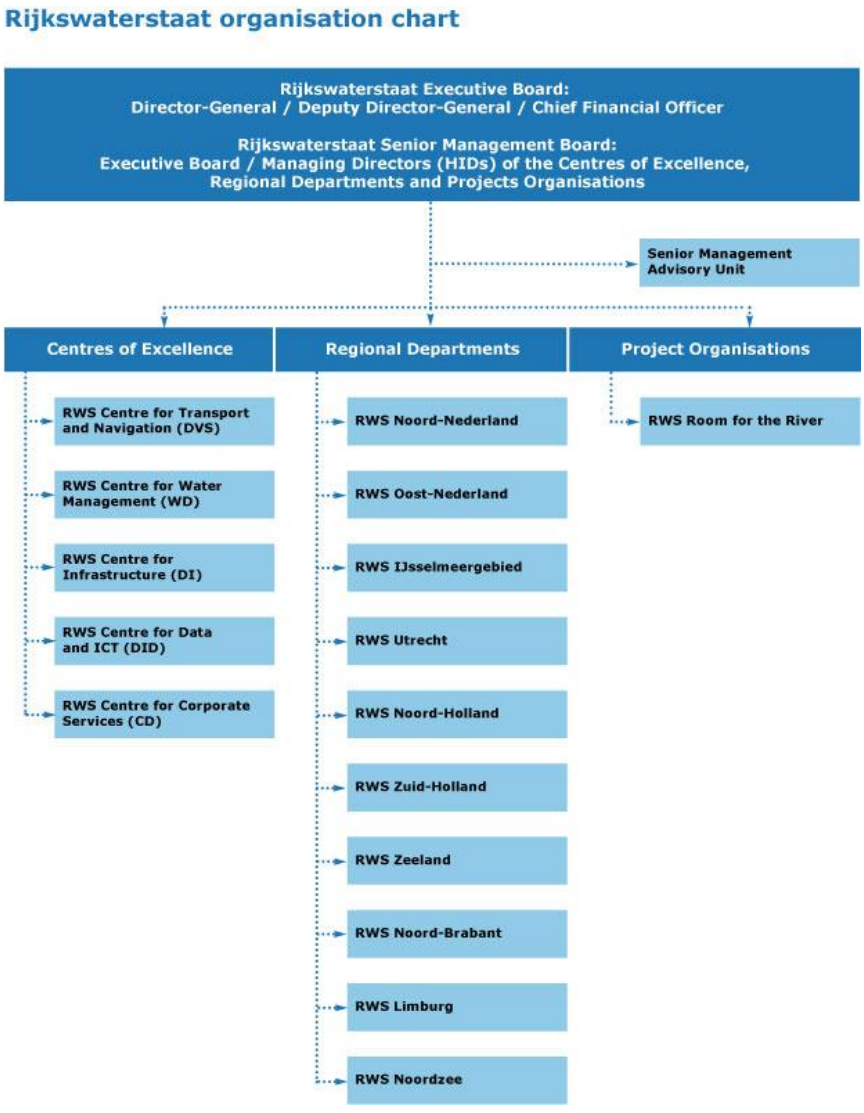
The ambition to embed spatial quality originates by Rijkswaterstaat. Policy-documents of Rijkswaterstaat have a large impact on the inclusion of spatial qualities on canals because the documents influence the conceptualisation and operationalization of spatial quality in practise. For a better understanding of how the policies are established, a short elaboration of the organisational context in which these policies are framed is provided.

Rijkswaterstaat is a national agency under direction of the Ministry of Infrastructure and Environment, in English referred to as the Directorate-General for Public Works and Water Management of the Netherlands. Rijkswaterstaat is the governmental institute for national infrastructure such as roads, rivers or canals and therefore linked to this research. By many, Rijkswaterstaat is considered to be "a core component of Dutch national identity" (Goverde, 2012; p. 334). It is the result of the struggle with and against water during the past year in which Dutch engineers have succeeded in managing "the complexity of Dutch Delta Urbanism" (Meyer et al., 2010). The agency has been founded in 1798. Rijkswaterstaat manages 75 water ways across the Netherlands. Currently, Rijkswaterstaat has four goals; to take care of (1) 'dry feet', (2) a sufficient amount of drinking water, (3) safe and smooth traffic and (4) reliable and useful information. Therefore Rijkswaterstaat manages the system of national roads, national waterways and the national water system.

Rijkswaterstaat has the task to do what is best for the country and in that sense not so much deliberation. Goverde (2012) discusses that Rijkswaterstaat is both, a power and knowledge institute which strongly influences infrastructure management discourse. Until the 1980s Rijkswaterstaat was a technocratic bastion. Later on, the organisation was influenced by ecologists,

the democratisation of society in the Netherlands and stakeholder's participation, caused by neoliberal reforms (Goverde, 2012).

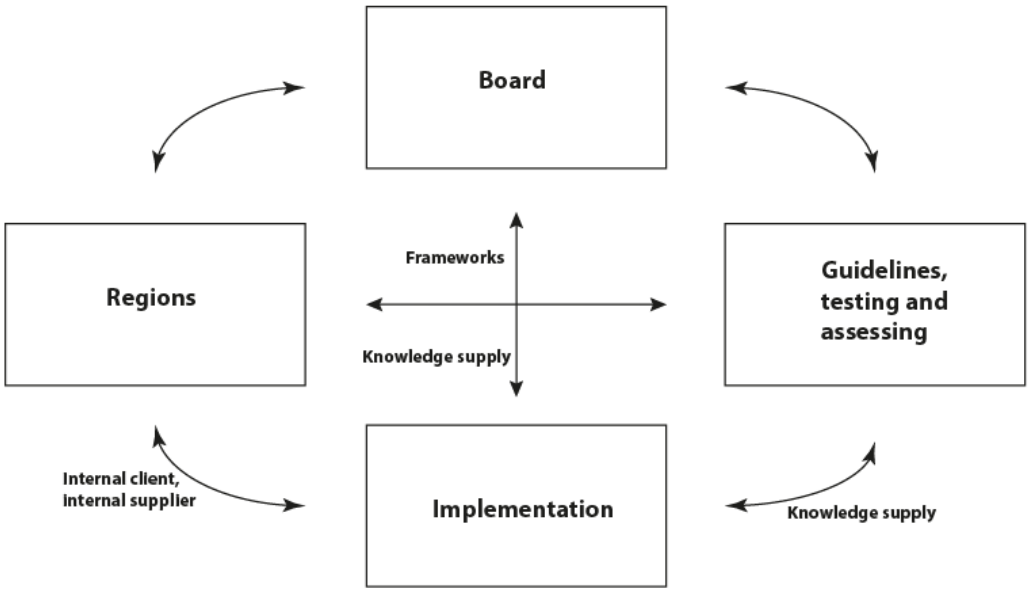
The national government manages canals – by hands of Rijkswaterstaat - including policy-making as well as (local) maintenance. As being an agency of the Ministry of Infrastructure and Environment, Rijkswaterstaat preserves their core goals and takes care of water and infrastructure.



Rijkswaterstaat organisation chart[2] (2012)

[2] *Note that there has been an organisational reorganisation, valid from April 1st 2013. The case studies are based on the organisation chart mentioned above.*

In general, Rijkswaterstaat has 3 main levels: the Board, national services and regional services. Spatial qualities are framed within the context of the Centre for Transport and Navigation (DVS). At DVS, a Centre of Excellence, knowledge is being produced at carried out to regional services.



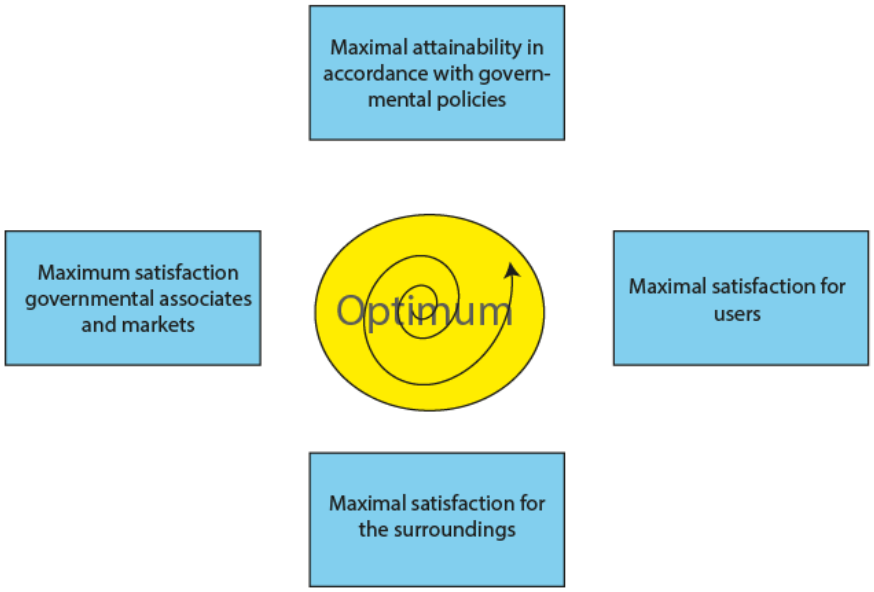
Adapted from Organisation Plan 2015 (2011)

DVS is connected with regional services as well as the board. Knowledge is constructed at national level (DVS). Input for this knowledge is provided by regional services, by realisation services and by the management. In relation to spatial quality, DVS creates guidelines about spatial quality on national level after which the guidelines need to be implemented at regional level. The regional services are not based on trajectories of highways or canals, but on areas (often 1 – 3 provinces).

The origin of including spatial quality in policy-making

Although there are documents to enhance spatial quality in projects on national highways and canals, enhancing spatial quality is not one of the official main goals of Rijkswaterstaat, as elaborated in the Organisation Plan 2015. However, indirectly it is implied through the planning process.

According to Rijkswaterstaat (2011) the planning process has an ideal starting point.



Adapted from Organisation Plan 2015 (2011)

The scheme shows that Rijkswaterstaat does not only take technical demands into account but also aims at maximal satisfaction for users or markets. To strive for optimum satisfaction for multiple stakeholders can be seen as a sign that there is a shift in paradigm within Rijkswaterstaat. They do not only take technical demands for shipping into account but have changed into a multi-dimensional partner in spatial developments. The connection with the surroundings shows the internal shift in paradigm as elaborated earlier which is conceptualized as spatial quality.

A description of policies

International policies

Although Rijkswaterstaat creates policies on national level, the institute has to take several guidelines and policy-frameworks on higher level into account. European legislations are often superior to national policies or frameworks (Beunen, 2006). However, with regard to spatial qualities, there are no policies that directly discuss the concept of spatial quality. International policies discuss the landscape, often focussing on (sectorial) networks of, amongst others, ecology or infrastructure. For example, European policies discuss landscape qualities, quality of life, environmental quality, ecological quality, recreational quality and many other qualities a landscape can have.

There is one framework which is of influence of the operationalization of spatial quality and needs to be taken into account by policy-makers, that is, the UNESCO World Heritage.

UNESCO World Heritage

Some of the elements that are considered to be spatial qualities are embedded into the World Heritage list of UNESCO (United Nations Educational, Scientific and Cultural Organisation). Hence, spatial developments need to take place within this framework. The UNESCO policy-framework aims to maintain the cultural-historic identity during developments in areas indicated as valuable areas, or specifically, the objects on the list are of "outstanding universal value". In total there are 962 heritage objects on the list of which 745 cultural-, 188 natural and 29 mixed objects. These (962) objects are located in 157 countries.

Although some canals are valued as world heritage (Canal du Midi, since 1996), there are no Dutch canals included in the list of UNESCO. The Canal du Midi is argued to be a symbol of the era after the Middle Ages and is seen as a precursor of the industrial revolution. The canal is 360 kilometres and includes 328 architectural objects as well. Other examples are the Rideau Canal in Canada (included since 2007) or the Pontcysyllte Aqueduct and Canal in Great-Britain (included since 2009).

The assignment of UNESCO World Heritage leads to careful considerations of developments on canals or their surrounding sites. UNESCO World Heritage needs to remain intact. One of the examples is the *Nieuw Hollandse Waterlinie*. The defence line has been part of UNESCO heritage since 1995. Due to its status in policy-documents, it is not allowed to widen the Lek canal on the world heritage site because the defence line needs to be kept intact. In this example, the assignment of UNESCO World Heritage has negative effects (e.g. less flexibility on canal projects), but also has positive effects (e.g. canal projects can connect to the heritage site in order to enhance spatial quality).

National policies

On national level spatial quality is influenced by various framework or laws. One of the document that used be of great importance was The Strategic View on Infrastructure and Space (2012). The document is one of the small numbers of policy-document that literally discusses spatial quality. It is perceived as one of the means to reach National Interest 10: 'space for preservation and strengthening of (inter)national unique cultural-historical and natural qualities'.

However, due to political shifts the extensive document is put aside, nearly two years after it was finished.

Policy-documents that are of influence on embedding spatial quality are based on three laws: Environmental Law (*Omgevingswet*), Trajectory Law (*Tracéwet*) and the Crisis and Recovery Law (*Crisis en Herstelwet*).

Crisis en Herstelwet (2010)

The Crisis and Recovery Law is valid from March 31st 2010. This law does not specifically focus on spatial quality. However, spatial quality is argued to be influenced by changing procedures. The effects of the Crisis and Recovery Law are:

- Shortening procedures (judgement of objections needs to take less than 6 months),
- Pro-forma objections are not possible (objections need to be filed directly),
- The amount of permits is decreased,
- Result of researches are retained longer (not every project needs a new research in order to analyse the effects),
- Limitation of lower governments to object to projects
- Reduces the amount of permits and takes care of a thoughtful consideration.

Because of shortening procedures and fewer possibilities to object, spatial quality – as being an ambition and not an official goal of a project – becomes harder to embed in the process. The focus of projects within the Crisis and Recovery Law is on the main goals and not on side issues. If a project meets the requirements to accomplish the main goals, it is more likely to proceed with less regard to non-core concepts as, for example, spatial quality.

The Crisis and Recovery Law is the temporarily herald of the Environmental Law.

Tracéwet

The Trajectory Law is of great importance. The law is based on a process in which starts at the beginning (start note, *startnotitie*) and is taken into account until the realisation. One of the main documents following from the Trajectory Law is the Record of Decision (*Tracébesluit*). For spatial quality it is considered to be an important document.

To understand the importance of the Record of Decision it is useful to understand the process from initiation towards the final document. At first, the *startnotitie* discusses starting points and backgrounds of the project. The *startnotitie* also discusses which environmental aspects will be researched later in the process. In the second step, stakeholders are able to discuss the plans of the

first step. They can participate by reacting on the plans. The reactions are analysed by independent environmental experts. The group of experts provides an advice which is the foundation for the next step. Thirdly, an analysis of current problems and solutions to the problems is done. The document will also take environmental aspects into account for each solution. Hereafter, in the next step, stakeholders can give their reactions to the (adapted) plan again. Besides, stakeholders can participate by addressing the solution they prefer. Also lower governments (e.g. provinces or municipalities) discuss their preference. Hereafter a commission analyses whether the information of the previous phase was sufficient. Next, the minister of Infrastructure and Environment takes a position which he or she thinks is the best solution. Then (step 6) the position of the minister is discussed in a draft version of the Record of Decision after which stakeholders are involved by addressing their opinions. In step 7, the minister determines the Record of Decision, based on previous steps. This Record of Decision is irreversible. It has a severe legal status. On behalf of the Record of Decision grounds can be expropriated. The Record of Decision is considered to be the area in which developments take place. Provinces and municipalities have to embed the results of the Record of Decision in their policies. The total plan, including spatial quality, needs to be incorporated in the Record of Decision.

Omgevingswet (approximately 2014/2015)

The Environmental Law is in development and will become of great importance to spatial developments. The law will be the legal framework for citizens, entrepreneurs and governments. The Environmental Law will be valid in approximately 2014 or 2015. It combines fragmented existing laws into one framework. The environmental law arranges:

- "Speeding up and improving the decision-making process of the physical domain,
- Integrate plans and frameworks for verifying,
- Enlarge governmental consideration,
- Efficient execution of research[3]".

At the moment of writing (May 2013), a draft version is at the House of Representatives. The report is not public available and published.

Internal policies of Rijkswaterstaat

Spatial quality is a concept that is not included in documents concerning canals. However, on 'dry' projects (highways), spatial quality has been part of various policy-documents. Besides, one of the

[3] http://www.infomil.nl/onderwerpen/ruimte/omgevingswet

documents (see: Kader Ruimtelijke Kwaliteit en Vormgeving, 2012) discusses the concept of spatial quality in general. The various policy-documents are discussed below, in chronological order.

Routeontwerp (2004)

Projects on highways tend to be focussed on technical demands. Influenced by the demand for total designs Rijkswaterstaat has made an attempt to create a coherent area-based vision on the highway by a programme called Routeontwerp (Route design). The programme focusses on a connection between highway and surrounding area. Points of attention are focussing on the strengths of the area as well as on the properties of the road. The programme has been used for the highways A2, A4, A12 and A27.

Routeontwerp involves stakeholders in the process to formulate an assignment for the project. Different landscapes or regions are defined with the stakeholders. The interaction between the areas and the highway has been researched. The research focusses on questions on, for example, whether the highways crosscuts its surroundings or is part of the area or analyses the connection between the highway and surrounding plantations. For example, the Routeontwerp *A2* perceives the following landscapes across the highway: Recreational Peat Waters (*Recreatieve Veenplassen*), Open river landscapes (*Open Rivierenlandschap*), half-open landscapes (*Coulissen Landschap*), forrest (*Continue Bos*), Meuse waters (*Maasplassen*) and the Valley of the Meuse (*Dal van de Maas*).
Routeontwerp is considered to be an assignment based on architectonic expertise. There is a strong focus on the design of the road and its surroundings. Despite its integrative perspective, the elaboration of the programme is outvoted by (landscape) architect or designers.
Amongst many stakeholders, Routeontwerp is considered to be a revolutionary approach towards infrastructural developments.

Geheugen van het Snelweglandschap (2011)

The Memory on the Highway landscape is a policy-document which policy-makers need to take into account in projects on highways. The document exists of various interviews with policy-makers and several project descriptions in the Netherlands. The document is used to share strengths and weaknesses of different approaches. Also (local) knowledge is shared through the document by elaborating on remarkable issues policy-makers had to deal with during projects. The document provides an insight to the experiences of their colleagues. Also quality aspects are issued in the document by discussing several important aspects in each project that need to be taken into account.

Kader Ruimtelijke Kwaliteit en Vormgeving (2012)

Rijkswaterstaat has defined spatial quality in their document *Kader Ruimtelijke Kwaliteit en Vormgeving* (2012). The definition of spatial quality is not new. Spatial quality has been defined almost a quarter of a century ago (1988) by the Ministry of VROM. The definition currently used by Rijkswaterstaat does not differ from the previous definition of the concept, being; (1) user value (e.g. recreational value, agricultural value), (2) future value (e.g. robustness, flexible to changes) and (3) amenities (e.g. identity). Besides the definition, the report also elaborates further on the concept in order to provide a more detailed understanding for governmental officials who have to work with the concept in practise. The document states that the quality of the landscape – on national or regional level – is influenced by, for example, functions of water ways, the identity of landscapes or the unity of water and environment. On lower scales the quality of the landscape is influenced by, for example, the width of water ways, and the view on the surroundings or the equipment of the surroundings.

Also included in the report is the relation between spatial quality and several other concepts, such as landscape values or design. The design of the landscape is expressed in lines, points and planes while the perception of the landscape is related to values. Landscape values as defined in the literature would relate most to the amenities. In the report, landscape values are perceived to be spatial values but spatial values do not necessarily have to be landscape values. By that, spatial values are seen as something more than landscape values which reconciles with the definition of spatial quality as originally implemented into policy-frameworks (e.g. *Vierde Nota Ruimtelijke Ordening*, 1988).

Design is included in the title of the document which might suggest that there is a link between spatial quality and design. It needs to be acknowledged that there is an underlying reason for this. Due to organizational reforms in the past, design is included in spatial quality. The service that was responsible for the design merged with the service that looks after landscapes. The tasks that used to be divided amongst two departments have merged. Both responsibilities are included in one (merged) named. Therefore design is now linked to spatial quality. However, spatial quality and design are not directly linked in practise. In policy-making, on the one hand, spatial quality is not necessarily attached to design. On the other hand, in projects, spatial quality is being linked to design. In the guidelines used in projects, spatial quality and design are mentioned next to each other. Therefore design has the appearance to be closely related to spatial quality, resulting in the adoption of design in projects.

Kijk op de Ruimtelijke Kwaliteit van Snelwegen (2013)

This policy-document is an elaboration of the Kader Ruimtelijke Kwaliteit en Vormgeving.

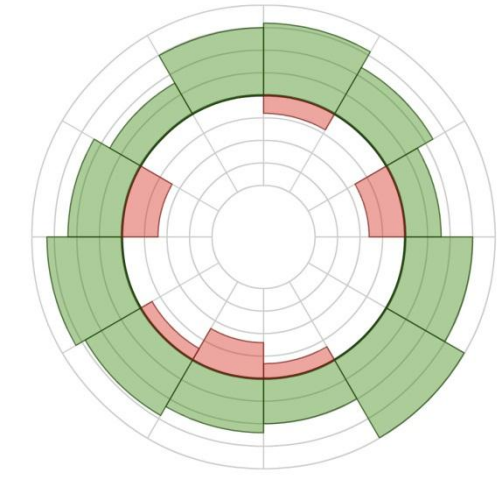
Based on expert opinions, the policy-document discusses the spatial qualities of every highway in the Netherlands. The document does not prescribe spatial quality in detail, but conceptualizes spatial quality on general level. To provide an example, by experts one of the spatial qualities of the highway A79 is that it has an open view to hills which is considered to be unique for the Netherlands. Projects on the A79 need to take this into account. For example, it is not desirable to have trees directly next to the highway which blocks the view, stated as a spatial quality of the area.

The policy-document is obliged, which means that it needs to be taken into account by regional services. Through this policy-document, the national government creates a severe framework and by that, has the power to define spatial quality throughout the Netherlands.

The document is used for highways but has not been created for canals.

A tool to value projects: the Environmental Index

Rijkswaterstaat has made an attempt to visualize spatial quality by providing measurements that are able to show how sustainable a project is. The digitally available *Omgevingswijzer* (Environmental Index) can be used for project manager to assess their project proposals. The *Omgevingswijzer* analyses the project on twelve topics (e.g. water, soil, availability, energy and others).

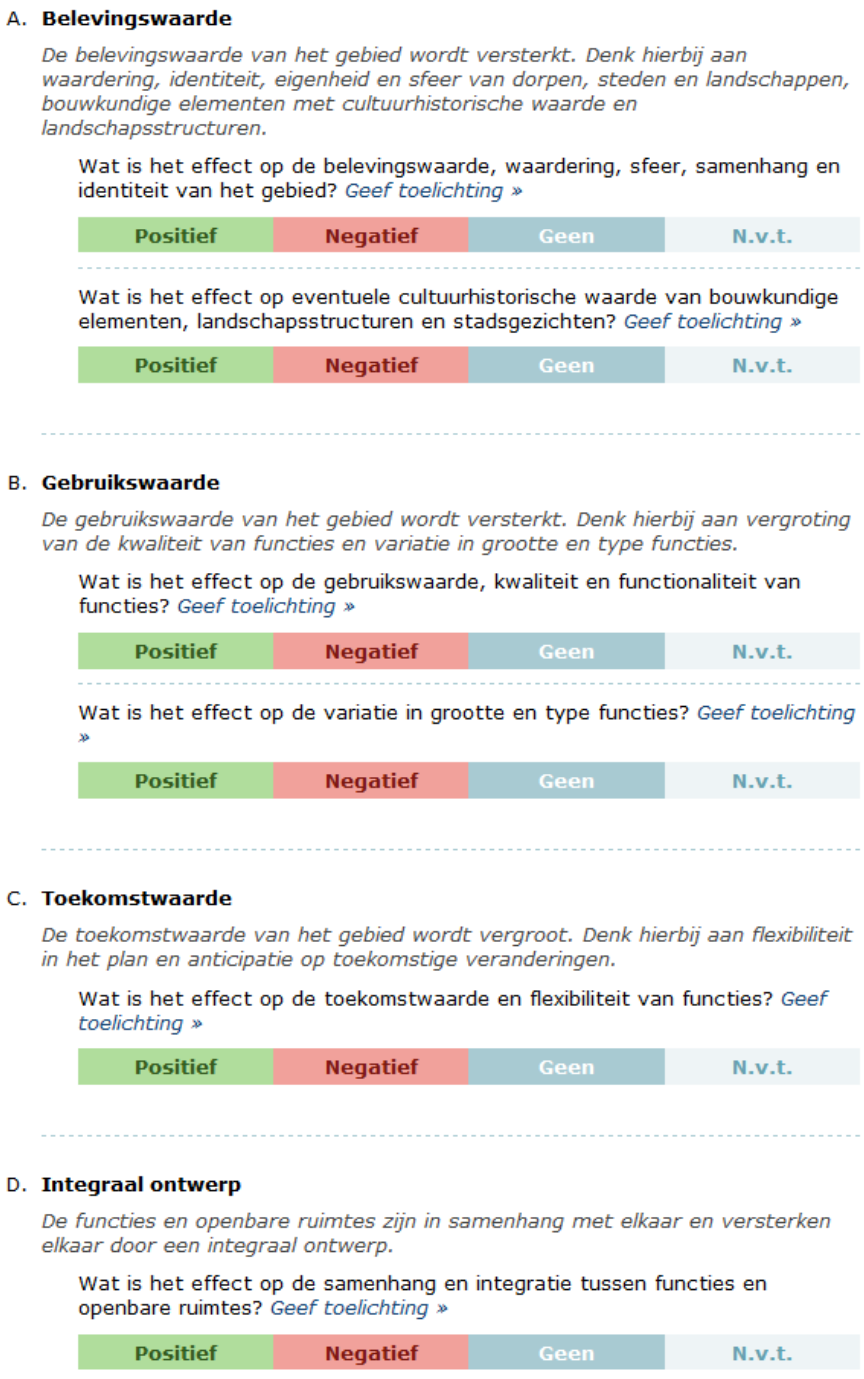


Example of the "Omgevingswijzer"[4]

[4] https://omgevingswijzer.org/ ; version November 2012

The twelve topics have a set of questions (usually 3 to 5 questions). Each question is divided in Positive/Negative/None/Not Applicable. By answering the questions, the extent of the sustainability of the project is shown in a web that links the twelve topics together.

Spatial quality is one of the twelve topics. It exists of five questions that relate to the officials definition of the concept.



Spatial quality as one of the twelve topics in the Omgevingswijzer[5]

[5] https://omgevingswijzer.org/wijzer/ ; version November 2012

Besides linking to the official definition amenities, user-value and future-value (A,B,C) the *Omgevingswijzer* also assesses the integration by questioning what the effects on the cohesion and integration between functions and public spaces are. However, considering whether a plan can be called integrative does not have an answer in policy-making (Beukers & Heeres, 2012). The *Omgevingswijzer* does not provide any weight to a topic. In the visualisation all topics are considered to be important. Moreover, the judgement of the tool is difficult to address. To provide an answer to 'what is the effect on the user-value, quality and functionality of functions" (question B of spatial quality) is difficult. The total effects of user-value have to be merged into one single answer and be simplified to the good or the bad. However, whether the *Omgevingswijzer* is evaluated as good or bad depends on its use. It does not provide an answer to the extent of sustainability of a project. The result cannot be taken for granted as being objective, quantified results. The *Omgevingswijzer* cannot be taken literally. However, it can be used to initiate discussion amongst stakeholders. Hence, it is argued that this is challenging. When the *Omgevingswijzer* is used to set a discussion, it should be used in the beginning phase as an exploration towards several possibilities. However, the amount of subjectivity increases. If effects and risks are not well-thought in detail it is likely that the quality of the judgement decreases resulting in questionable outcomes of the *Omgevingswijzer*.

An example: Room for the River

Room for the River is a Dutch river programme that aims at increasing safety and the reduction of flooding. It is the only example in the Netherlands until now which includes spatial quality as one of the official main goals of programme. The programme is embedded in a spatial planning key decision (*PKB*). Room for the River has two main goals: (1) safety: to meet the requirements for the protection of river areas against flooding and (2) spatial quality: to contribute to the improvement of the spatial quality of the river areas. Thus spatial quality is a specific goal of the programme. Also Room for the River elaborates on spatial quality based on three aspects which are described as utilisation value, perception value and future value (Room for the River, 2007). The translation from these three aspects towards Room for the River projects has been made. The plan argues an area has utilitarian value when the area "can be safely used for a variety of different functions that do not interfere with one another, that reinforce one another as far as possible, and that are accessible to all population groups and classes" (Room for the River, 2007; p. 25). Perception value plays also an important role in people's environment (*ibid.*). There is no strict definition of perception value. The report elaborates on the inclusion of cultural awareness, diversity, human

scale, identity and others (*ibid.*). Future value is connected to sustainability and flexibility (*ibid.*). The document states that the exact meaning of the three aspects will be decided in cooperation with stakeholders.
The national rivers of the Netherlands are of "international importance, economically, ecologically and from the perspective of the landscape (*ibid.*). Therefore the Room for the River programme has a large impact on improving spatial quality as stated in the National Policy Document on Spatial Planning (Nota Ruimte).

The Room for the River programme aims at:

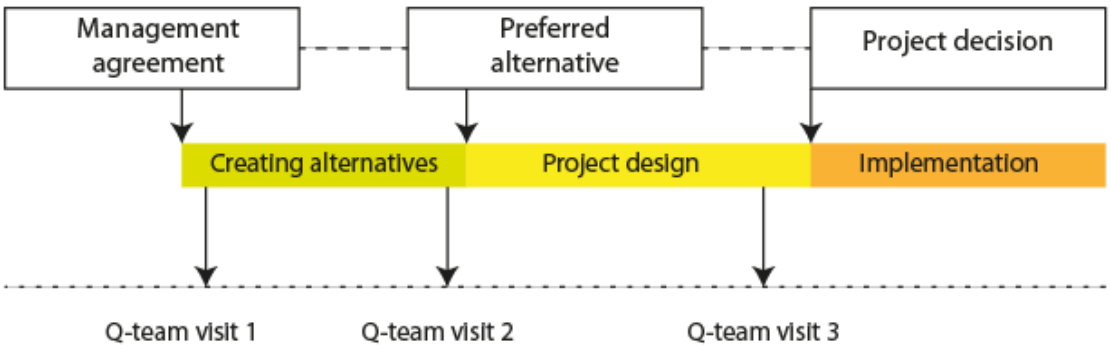
- "Increasing the spatial diversity between the distributaries,
- Maintaining and reinforcing the open character of the water, with its characteristic frontages along the water,
- Maintaining and developing the landscape, ecological, geographical and heritage features, and improving the quality of the environment,
- Improving options for the use of the main water ways for commercial shipping and pleasure cruising".

  (Room for the River, 2007; p. 26).

The government has decided to not take only the river into account in their spatial planning key decision, but also to include the surroundings as expressed by spatial quality. Water-based solutions can create opportunities for nature development and human use as well (Hulsker et al., 2011).
Spatial quality is embedded in various future scenarios. The scenarios are inspired by guidelines (*Handreikingen*) that are made for every river. These guidelines provide characteristics that are considered to be important.

To monitor the status of spatial quality in the process a 'Q-team' present in the project. The Q-team is an abbreviation of 'Quality team Room for the River'. The Q-team focusses on the second goal of the programme, improving spatial quality. Over five years, five experts have provided feedback on measures that are taken in the plan study phase as well as in the implementation phase. Currently the team exists out of Dirk Sijmons (chair; advisor of the national government – Rijksadviseur), Frans Klijn (physical geographer), Maurits de Hoog (urban designer), Dick de Bruin (river specialist) and Sjef Jansen (ecologist). The Q-team does not make any plans themselves but advises project leaders and designer concerning spatial quality in the project. Every project is visited three

times: (1) in the beginning, after an agreement between governmental stakeholders is signed the Q-team will meet the project team, (2) in the plan study phase the Q-team advises on the preferred alternative and (3) during the plan phase the Q-team advises on the design of the preferred alternative, how spatial quality of the design can be translated into the implementation phase and how the plan should be specified in the final result.



Moments of Q-team visiting project (adapted from: leaflet Kwaliteitsteam, 2007)

The quality team is not the designer of the project (Hulsker et al., 2011). The designer has a bigger input on the content rather than the Q-team which has to take procedural and formal principles into account.

Although the process is advised by a team of experts, participation played a big role in the process. Hulsker et al. (2011) argue that participation has decreased resistance towards the plans. Although there are some participatory successes (*ibid.*) the participation has also failed in some cases. For example, in Vianen (in the province of Utrecht) stakeholders were surprised by the plans because they were not involved on time. Participation is not the same as examine concepts of plans (*ibid.*). Also there should be a focus on dominant groups. As Hulsker et al. (2011) argue, participation should separate direct (e.g. inhabitants) and general participants (e.g. representatives of interest groups). They include an aspect of participation what they refer to as 'expectation management'. It should be clear to participants that they can participate in the process which is used as input but are not able to decide.

The inclusion of spatial quality in Room for the River projects has led to a division of tasks in which Rijkswaterstaat is the initiator for technical projects (e.g. deepening a river) and decentralized government take spatial project into account (e.g. creating bypasses, design of river forelands). Hulsker et al. (2011) argue that this has led to a sufficient approach. As they elaborate, spatial quality can be given a place in spatial concepts whereas the focus is on technical aspects in water projects. The result of both of them ensures the two main goals: safety and spatial quality.

Spatial Quality: An Analysis of Communities of Practise

Introduction

This chapter will elaborate on the case studies and discuss how spatial quality is operationalized in planning practises. Case study research, interviews and observations are used as a source of input in order to explore how the concept of spatial quality is operationalized in projects on canals in the Netherlands.

It is argued that spatial quality does not have a predefined meaning in projects on canals. Some case studies elaborate on spatial quality focussing on ecological values; others tend to focus more on decreasing nuisance and so on. It has been clear that in projects on canals in the Netherlands there is nothing like 'the' spatial quality. However, the ambition to embed spatial quality in project is has embodied in policy-documents. Hence in practise there also seem to be some pitfalls how to translate policies in practises.

Spatial quality: the unknown

Planning practises are linked to the formal definition of spatial quality, being balance in user-value, future-value and amenities. However, there seems to be a struggle between policy-making and policy-implementation at local projects. Not only in projects on canals but also in relation to infrastructural projects in general there seems to be no clear attention for spatial quality as being derived from the theoretical and policy definitions. There is a certain lack of knowledge of governmental officers concerning the definition of spatial quality. During the interviews only one time spatial quality has been linked to the official definition. Other interviewees descripted spatial quality freely through their own interpretation. The lack of knowledge is not perceived to be a problem. Other governmental officials are also not able to define spatial quality. In other words, how can someone know an unknown definition is not known?

To provide governmental officials with knowledge, guidelines are made. Guidelines (*kaders*) are descriptions of specific topics on general level which need to be taken into account in (regional) projects. The *Kader Ruimtelijke Kwaliteit* (2012; see previous chapter) is a guideline discussing spatial quality. The document elaborates on the definition of the concept of spatial quality and describes to which aspects spatial quality is linked. In 2012 the guidelines of Rijkswaterstaat have been the focus of a research. The researchers concluded that there are too many guidelines within Rijkswaterstaat. Therefore they aim at reducing the amount of frameworks from 500 to 50 (De

Ridder et al., 2012). Risks need to be managed in order to oversee the effects when frameworks or guidelines are not taken into account (*ibid.*). Another reason for the research is that the users of the frameworks can get lost in the amount of frameworks which might result in not using frameworks in practises at all (*ibid.*). The report argues that there is a growing demand within Rijkswaterstaat to combine and bundle frameworks and guidelines to coherent documents. However, bundling does not mean to staple documents calling it a guideline. The report heads for bundling guidelines with regard to the user's needs. Needs can be different and documents can be bundled on, for example, theme (if coherency in the institute is needed) or process (if coherency in the project is needed). De Ridder et al. (2012) conclude in their report that guidelines are rarely connected from strategic to tactical to operational level. The document shows that there needs to be a connection between policy-maker – the people who create the framework or guideline – and the end-user. According to the report, the end-users need to be involved during the establishment of the guideline as well as after it is being used. The uniformity of guidelines is not a goal but is a mean for the end-user to reach their goals.

The research on the implementation of guidelines into practise, supplemented with issues addressed during interviews, has made clear that there is a need to give publicity to the existence of the framework of spatial quality. Whilst governmental officials are unaware of the formal definition of the concept, spatial quality is used in various projects. However, officials tend to elaborate on spatial quality rather freely, according to their own perception. Due to this substantive confusion, most documents that governmental officers refer to when speaking about spatial quality, have a strong focus on the landscape. In most projects spatial quality has been referred to as landscape values, landscape quality or landscape adaption. Due to frameworks are unknown, regional differences in the interpretation of spatial quality become visible.

Differences in the level of ambition to embed spatial quality

The first main question when embedding spatial quality in a project is whether spatial quality is an ambition within the project. Practise shows that enhancing the qualities of the area is not always self-evident. Four main divisions on the inclusion of spatial quality can be seen.

The minimum level

In some canals there is no particular ambition for enhancing spatial quality. For example, the project of expanding the Twente canal is being done within the current scope of the canal and does not have a spatial impact. Therefore no adjustments are done on the surrounding sites near the canal.

In general, spatial quality is not a task officially included in projects one-on-one. However, when an intervention in the landscape is made, laws and policies need to be taken into account. That means that although the focus is on technical aspects, for example, increasing the suitability of the canal for larger ships, the developments have to meet legal requirements. In every project attention needs to be paid to the effects of the project on the environment. These effects and conditions are elaborated in, amongst others, a landscape plan. To provide an example, when trees – a possible object what can influence spatial quality – need to be removed, trees (legally) need to get replaced. Whether they will be replaced on the same spot or somewhere else depends on the decisions that are made by experts and stakeholders. Thus, when a project does not literally need to focus on spatial quality, the landscape is always monitored at a minimal level by law.

Maintaining spatial quality

In every case study it is argued that the quality of the area cannot be degraded. Thus, spatial quality always needs to be taken into account in order to be continued. The case studies express this understanding by maintaining physical components in the landscape: if there is a path for walking and cycling next to the canal, the path needs to be maintained; if there is a line of trees on the canal side, these trees need to be maintained, and so on. Partly that is the result of laws and policies (e.g. when trees are chopped, it is obliged to plan the same amount of trees by law). But, if the line of trees do not have ecological value within that specific area (an example of the Juliana canal and Lek canal; trees as an approach route for bats), it is the ambition of Rijkswaterstaat to maintain them at that exact spot or somewhere else. In most cases where spatial quality has not been a direct ambition, landscape elements remain the same after realisation of the project. It can be argued that if spatial quality focusses on maintaining the same level of quality, in every case it is expressed as maintaining landscape elements. The level of maintaining spatial quality is not at a minimum level, but Rijkswaterstaat adds an extra element to the minimum by including existing structures of the landscape in the plan.

Enhancing spatial quality

A third way to include spatial quality in the project is by aiming to enhance spatial quality. In cooperation with these stakeholders the project on the canal becomes area-based instead of line-based. If spatial quality needs to be enhanced, it is necessary to involve governmental stakeholders because they have a strong ground position and therefore are needed for area-based development. In many cases municipalities – and indirectly provinces – determine the range of possibilities next to the canal through policies. It is not self-evident that every governmental stakeholder has the same ambitions. Therefore it is also possible that stakeholders would not cooperate with Rijkswaterstaat. Then, due to ground positions, the area-based approach turns into a line-based approach.

Striving for spatial quality

In projects on canals striving does not mean making spatial quality a goal of the project. In none of the projects spatial quality has been an official goal as in, for example, the Room for the River programme. In projects related to canals striving for spatial quality does focus on taking the surrounding area of the canal into account in the plan. Projects that strive for enhancing spatial quality often have a severe link with provinces or stakeholders which are perceived as being 'the region'. These governmental stakeholders are often included in the plan study phase. That phase elaborates on decisions on general level. The Record of Decision – in which the trajectory is decided – also follows from this. Hereafter, other stakeholders (e.g. local inhabitants) are included in the decision making. The region – as represented by the government – decides upon the trajectory (stakeholders can formally object to this) whilst individual stakeholders are represented later in the process. Individual stakeholders are able to make small-scale adjustments to decision made by representatives. Taking all stakeholders into account is argued to lead to enhancing spatial quality.

To be able to enhance spatial quality, in practise it has been argued that it is necessary to cooperate with stakeholders. The inclusion of stakeholders can lead to improving spatial quality.

The perception of spatial quality: expensive

One of the challenges that has been a point of attention in many case studies is the financial aspect in relation to spatial quality. On the one hand, interviewees have argued that the inclusion of spatial quality in projects often costs money but, on the other hand, they also argue that it does not per se have to cost money. Interviews have shown that there is no consensus amongst governmental officials on whether spatial quality increases the budget of the project. Interviewees

point out that if there is a focus on the basics – to take care of shipping – the project costs are least. All the extras – a category where spatial quality tends to belong to – need extra budgetary measures.
However, an example of the Wilhelmina canal shows something else. Instead of using dam walls at the canal, Rijkswaterstaat has chosen to use fluently descended bricks for the construction. Because of this particular design, the canal has been embedded into the environment as a result of its descending wall. The experience of the canal has closer links with its surroundings because of that design. When a tray of bricks was chosen as construction, the boundaries between the canal and its environment would become harsh. It is argued that therefore this financial cheaper solution leads to enhancing the amenity (and possible also user value) of the canal although it needs to be said that the decision has been based on financial arguments. However, the inclusion of spatial quality does not have to be more expensive per se.

The financial constructions of the projects are complex. In some cases extra budget is needed from external stakeholders to enhance spatial quality. For example, when it is desirable to develop surrounding sites near canals, the adjoining landowner (in many cases the province) is needed for development and concerned with budgetary measures. In other cases extra financial resources of the national government are demanded, for example, when trees or bridges can lead to enhancing spatial quality. It cannot be ruled out whether spatial quality increases the budget or not. Spatial quality is not a head of expenditure but can also be hidden within other aspects.

Loosing spatial quality during the process

The majority of interviewees have argued that there is a severe deficiency in the process from planning towards realisation. In many regional services of Rijkswaterstaat, the project team of the plan study phase differs from the project team concerned with the realisation of the project. It is often argued that spatial quality is not being included in the final project because of this shift. As many interviewees argue, the project team in the beginning has a clear story with many – along the process – taken for granted common understandings, agreements and background information which are at the heart of the team. During the plan study phase the project team starts blank, moving towards a coherent story for the canal. Because of the constant involvement of the project team along this process, the team gathers a lot of the knowledge about the project. The knowledge can also lead to common understandings or agreements and possibly result in a single way of thinking. The taken measures are based on a coherent story and are not measured on their own. When spatial quality is taken into account, it is often considered to be a story that is beyond the

measures. After the plan study phase, another project team will lead the project towards realisation. However, when the second project team is handed over the documents of the projects, the logic beyond the documents is lost. Logic is not common to appear only through paper work (e.g. reports, notes or other documents). The understanding of the non-written story is possible not covered by the second project team. One issue forms the basis for this problem: spatial quality is a story, often embedded in other aspects rather than being a set of rules. Thus, the story of spatial quality is also not fully being translated in the final product.

To strive for successful implementation of the project, at several regional services, more officers from Rijkswaterstaat are included in the plan study phase including the other following phases. They are considered to be the key to solution and be key figures which can play an important role to connect the different phases.
In the end of 2012, each regional service is provided a Coordinator Spatial Quality. The coordinator is not related to a single project but monitors spatial quality for the entire service an. In addition, the coordinator is not directly related to one sector, as many project members are (e.g. hydrologists, ecologists and others). In a way, the coordinator is an aerial at regional level. Coordinators are able to monitor the concept of spatial quality in projects whereas the advisor spatial quality on national level has more in-depth knowledge about the concept and can assist coordinators and support them with advice.

In essence the coordination of an inter-sectorial concept is a good attempt to pay attention to spatial quality. However, because spatial quality cannot be pre-defined, for most coordinators it is not clear what they have to monitor. It is the start of a field of expertise that needs to be discovered. In the Regional Service East-Netherlands a research is currently conducted concerning embedding spatial quality on regional level. The goal is to provide the Coordinator Spatial Quality handles about the content of its task.

Shifts from line to area

The external view of projects

Based on observations and interviews, a minority of experts argues that it is of great importance to take the complete trajectory of the canal into account at each separate project. As they argue, canals have been constructed in the past within some years. Because of that, canals have some important characteristics that can contribute to spatial quality. For example, the Juliana canal is known for its arch bridges. The bridges were part of the canal as being a single project at time of its construction.

In contemporary practises, the coherence of canals is not taken into account. Projects are based on organisational level which causes risks and can lead to disappearance of (historically-based) qualities of canals. Documents on spatial quality focus on regional level. But some canals (e.g. Juliana canal or Zuid-Willemsvaart) are inter-regional and cross various territorial boundaries. If a single trajectory has been divided into two or more institutional areas, it also includes multiple (regional) plans. Due to the regional approach, many documents only focus on regional aspects and not on the canal as being one coherent element. In practise, there are a few officials who advocate taking the complete trajectory into account. A majority focusses on the surrounding area. The surrounding landscape of project sites is developed as one area, resulting in qualitative good effects for ecology, water protection, history and many other fields of study. The overall combination of positive effects is often referred to as spatial quality by governmental officials.

Interviewees express concerns about the focus on the area without regard to the coherency of the line. They advocate that projects need to focus on horizontal level (trajectory) as well as on vertical level (area). This diagonal approach, combining area and trajectory, is substantial in order to be able to enhance spatial quality.

The attraction of canals

Highways are often considered as an attractive element for (economic) activity. Since the rise of trucks most freight is transported by highway and not by water. In addition, because ships are merely used for heavy transports, canals do not attract (business) activities in their surroundings other than some centralized harbour activities. On the contrary, highways attract businesses. Interviews have shown that because canals do not have many large-scale activities in their surroundings, canals are perceived as attractive. The wide landscape and the water are two attractive elements for recreational purposes. Besides recreational activities, they also lead to attractiveness for living. In other words, humans tend to get a good feeling of canals (see also Berlyne, 1960; 1971).

A Review of Spatial Quality

This chapter is divided in three parts: a review of the perception of spatial quality in scientific debates, policy debates and communities of practise. In each part, the different data sources are interlinked. Connecting the results will provide an insight on differences and similarities of spatial quality of canals.

Spatial quality: a social construction?

Taking the surroundings into account is seen as the most dominant conceptualisation of spatial. There is an essential difference in methodological groundings in how to reach the ambition to consider the canals' surroundings. The conceptualisation of spatial quality can be divided in two main understandings. The first option is to define spatial quality. Defining spatial quality means that governmental officials or (external) experts determine the spatial quality of a canal. To provide an example, one of the defined aspects of spatial quality of the Juliana canal is the arc bridges. Governmental officials have determined that the bridges are a quality of the canal. Defining spatial quality is related to technocratic views acknowledging that the concept is something that (objectively) can be seen in the field and can be determined by experts (e.g. landscape architects). A second approach to construct spatial quality is to emphasize on how spatial quality can be achieved. When the emphasis is on how spatial quality can be achieved, the approach focusses on spatial quality as it has no given content and that it needs a certain method to give meaning to it. The approach forms a major difference of the place of spatial quality in a project.
The difference in defining or achieving spatial quality is more or less the same division between scientific literature and planning practises. Whereas most scholars tend to acknowledge spatial quality to be a social construction, the dominant technocratic paradigm in canal constructs spatial quality by defining it.

Rijkswaterstaat is not able to define spatial qualities themselves. In contemporary practises external experts are consulted who are considered to be able to define spatial quality. Scientific literature links the involvement of market parties with trends in governance. There are two main issues here. At first, market parties are not connected to political parties and therefore are not part of representative democracy. If spatial quality is constructed by society, there is no legitimacy to define spatial quality by means of private parties. In other words, a non-representative party cannot be empowered to construct societal concepts. Secondly, putting more responsibility on constructing spatial quality by private parties, leads to another remarkable issue. Literature on

governance and reflections on planning practises show that the central government aims at reducing its tasks and moving tasks to regional organisations. Paradoxically, leaving substantive determination to market parties, leads to strong(er) descriptions, if not, prescriptions of, for example, spatial quality. In other words, when the government wants to reduce its direct influence, the influence increases due to its fear to lose control. Whereas literature elaborates on spatial quality being a social construction, in planning practises the concept is mostly defined by experts.

Spatial quality: an assignment for architects

As elaborated previously, literature perceives spatial quality to be a social construction. The construction of the concept in science is detached from the operationalization in planning practises. Interviews have shown that in many cases experts define spatial quality. The core of canal projects is shipping after which it is supplemented with input of experts (mostly landscape architects or designers). Whilst literature elaborates on a much wider understanding of spatial quality, the operationalization of spatial quality in canal projects mainly focusses on design.

Spatial quality is something that is easy to imagine by sketches or symbols. Hence, the design has gained an important place in canal projects and is often used as an end, not as a mean. Interviews have shown that spatial quality is often referred to as the reduction of nuisance or adapting non-natural objects (e.g. bridges) into the landscape. Bridges and acoustic fences are contemplated after which they are brightened up, calling that spatial quality. Visual elements can be easily explained. However, capturing plans into images often does not serve its goal (Gunder & Hillier, 2009). Images are used for deferral of future decisions (Stavrakakis, 2007).

The connection between spatial quality and design in practise is the result of its implication in policy-documents. Spatial quality is often linked with design, as clearly shown in the document *Kader Ruimtelijke Kwaliteit en Vormgeving* (2012). The document Spatial Quality and Design, elaborating on the inclusion of spatial quality (obligatory to include in projects), uses the word 'design' in its title, directly next to spatial quality. In this context, spatial quality and design are indissoluble linked with each other.

The link between spatial quality and design is remarkable because there is not that much considerable attention given to other related concepts (Van Assche, et al., 2012) as, for example, sustainability, ecology or society although these concepts can influence spatial quality. Also geographical concepts as, for example, space, sense of place or attachment are rarely mentioned in policy-documents. Emphasizing on design can led to a focus on aesthetics instead of focussing on the input of end-user to add value to the canal project (Van Assche, 2004). Moreover, the cohesion

of the canal can be severely lost when the design is closely linked to aesthetics (Mandanipour, 2006).

The underlying reason is that knowledge about the concept has been centralized. In other words, knowledge has been converged to macro-level without being transmitted to meso-level. Whereas spatial quality is perceived to be a holistic concept on national level, regional services connect the concept with empirical knowledge – often focussed on design – supported with unclear policies. On micro-level knowledge concerning spatial quality is not present. In other words, on project level Rijkswaterstaat will not be revised by stakeholders when operationalizing spatial quality through projects.

Interviews have shown amongst governmental officials there is agreement that the Room for the River programme has embedded spatial quality in a good way. In the programme spatial quality is not only focused on design but connects more to the formal definition. Although lessons can be learned from the programme it needs to be addressed that the status of spatial quality in the Room or the River programme was completely different than embedding spatial quality on canals. Due to (mostly financial) constrains spatial quality cannot gain as much attention as in Room for the River. Although Rijkswaterstaat has tried to create an overall framework to visualize spatial quality and keeps the questionnaire closer connected to the formal definition (see Environmental Index), the tool fails due to its simplification of reality.
Therefore it is the task of a (landscape) architect to connect spatial quality with design without purely emphasizing on design of aesthetics.

Spatial quality: struggles in time

An average spatial project in the Netherlands has 12 stakeholders and it takes 10 years to finish the project (Klijn et al., 2010). The stakes can be uncertain during the project period. It is the core – or at least the appearance – of spatial planning to reduce these uncertainties (Gunder & Hillier, 2009). Canal projects are never static and project goals will never be fully achieved (*ibid.*) because they face struggles in time at long term - >10 years – an on short term – within the timeframe of the project; maximum 10 – 15 years –.

Long-term

Some researches make an attempt to give the threefold definition an inter-dimensional by extrapolating the aspect to other fields. Habiforum (2001) has connected the classic view on spatial quality with a layer-based approach as well as its (economic, social, societal and environmental) effects. However, scholars are unable to construct user-value, future-value or amenities. Spatial quality has shifted from transport costs and labour, influenced by neoclassical theories (Assink & Groenendijk, 2009) to a holistic understanding (Miciukiewicz et al., 2010). Both views are constructed by the same definition. Thus, it is not the definition that has changed; the interpretation of the concept has changed.

The main question is what direction canal projects are going to. On long-term there seems to be a common understanding that infrastructural projects move towards more stakeholders' involvement in order to be able to include embed the surrounding area in future projects. Policy-makers already aim for area-based development rather than line-based approaches (see Heeres et al., 2012). Although there is a commonly shared ambition to take the surroundings into account, there seems to be no coherency about the preferred method that can be used to achieve ambitions. Science and policy-documents do not provide any direct handles which can improve the process or product. In order to take the surroundings into account, many scholars argue for more stakeholders involvement in spatial projects (e.g. Beierle & Konisky, 2001; Edelenbos, 2000; Lewicki & Gray, 2003; Meyer, 2002) whilst others see including stakeholders as creating complex solutions rather than solving problems (e.g. Veldboer, 1996; Berry et al., 1993). Embedding spatial quality in projects does not have any answer on long-term in science and in policy-making.

Short-term

Within the timeframe of projects, the aspect of time creates three different struggles within large projects. The first struggle is based on agreements in relation to the duration of the project. Because projects on canals can take many years from the start (ideas) towards realization of the project, the ideas and agreements made in the past are applicable on current developments. This is often expressed in budgetary measures or responsibility questions but time is also linked to measures that need to be taken for the implementation of spatial quality. It can be considered to be a challenge to keep stakeholders interested in the project. Moreover, it is important to keep stakeholders to agreements made in the past. In some projects that take many years, it can be hard to convince stakeholders to perceive the importance of the project along previous made agreements. Especially governmental political institutes (e.g. municipalities) can differ because of

its shifts in politics. In a municipality, every 4 years there are elections for the city council (unless unexpected situation might appear, for example, severe political conflicts). Also provinces have elections for the Province Executive, generally every 4 years. Due to elections it is possible that in time political preferences of governmental stakeholders can change. Events such as elections at governmental stakeholders, but also, for example, changes in management positions at private stakeholders, can lead to difficulties in keeping stakeholders to previous appointments. Especially since some (governmental) positions in a project are considered to be of great influence of including spatial quality into projects in canals (e.g. deputy of the Provincial Executive), the change of political preference of a key-figure can lead to challenges in the project.

The second struggle is budget. In time (external) circumstances change. If a project takes many years, one of the aspects that is considered most important (budget), can change the content of the project. For example, spatial quality was not as much an issue in the beginning of the 2000s. Due to changes in the financial position of the government constructing something that is not in the core of the project and costs extra money, does not become a goal that is of importance. In other words, when an intervention (project) on a canal is done, the focus is on the core elements of the project. In every case study the core element is seen as to take care of the core element, shipping. All elements apart from safe and sufficient shipping are considered to be extra elements. That does not immediately mean that these aspects are not as important. In addition, spatial quality does also not directly mean that extra budgetary measures are needed. Spatial quality in projects aspired to be enhanced. However, one of the major preconditions in economic hard times is that spatial quality does not have to lead to extra (project) costs.

The third struggle at short-term is time in relation to methodological understandings. The methodological grounding of the project changes along the project. The general question about how to include spatial quality differs in time. To provide an example; along the project, the Zuid-Willemsvaart started to include stakeholders on another, more participatory oriented level than in the beginning of the project before the turn of the 21stcentury. Partly this is the result of the progress in project phases; the procedure to come to a Record of Decision involves governmental stakeholders whilst decision within the defined (and already approved) Record of Decision involves (local) stakeholders as well.

Struggles in time have not been part of scientific research. The holistic understanding of the concept of spatial quality makes it harder to structure the process and solve struggles

governmental officials face. Because struggles in the operationalization of spatial quality are not discussed in scientific research, the conceptualisation of spatial quality is not sufficient in practise.

Multiple discourses in infrastructure

While theory elaborates on changes in the infrastructure discourse, it needs to be argued that there is a distinction in discourses. Governmental organisations often refer to it as 'dry' (roads) and 'wet' (water ways) projects. Although spatial quality in relation to highways was not the focus of the research, interviews have shown that spatial quality related to 'dry' projects – in this case highways – is closer related to collaborative approaches. Several governmental officers have argued that collaborative approaches can lead to enhancing spatial quality. Projects on highways tend to aim for a total design in order to enhance spatial quality whereas projects on canals do not automatically emphasize this. Projects on canals are often technocratic and – in comparison with roads – based on its core development, which is, being used for shipping.

Although scientific literature does not make a clear distinction between water and highways, the differences in infrastructure between water and highways are embodied in policy-documents. Whereas the spatial quality of highways is embedded in various policy-documents (e.g. *Kijk op de Ruimtelijke Kwaliteit van Snelwegen*, 2012; *Landschapsplan A28 Utrecht – Amersfoort,* 2012*;* and many other individual policy-documents), spatial quality on canals is not often a point of attention.

The technocratic discourse of 'wet' projects remains fairly dominant within Rijkswaterstaat.

Planning, realisation and the involvement of different expertise

Lenferink et al. (2012) see a gap between different phases in the project. But almost no other scholars reflect on the operationalization of spatial quality in projects. The *Werkbank Ruimtelijke Kwaliteit* (2006) is one of the few who has developed a workshop to operationalize spatial quality.

Thus, despite scholars elaborate on the content of spatial quality, science does not provide an answer how to translate spatial quality from theory to practise. The conceptualisation of spatial quality is one step; the operationalization of spatial quality needs a proper analysis of the institutional and organisational context in which spatial quality is framed.

Governmental officials have argued that it is often a challenge to maintain spatial quality during the process. The concept has been faced by various process-related issues: thinking in risks (if spatial quality can lead to exceeding budgets or time, it can be deleted from the project), not making it from the plan study phase to the realisation (thinking spatial quality costs money in any way and therefore excluding it for the budget, even during the plan study phase), getting lost in projects (spatial quality remained vague during the process and therefore it is not implemented by

the constructor), sectorial approaches (thinking in e.g. hydrology, ecology and other sectors instead of understanding the grand sum of the project), the construction paradigm (focussing on a fast construction), economical positions of stakeholders (on long-term the willingness to pay can differ), ambitions (a difference in area-preferences of stakeholders), policies (the prescription of description of the inclusion of spatial quality in the project) and many others. Nearly all practise-related challenges are not covered in scientific writings.

Spatial quality has a deficit in time, it also has a deficit in governing level (the rules and guidelines set at macro-level do not seem to work sufficiently in practise).

Discussion

Why spatial quality?

Despite many researches, the conceptualization of spatial quality remains vague. Literature does not provide an answer on how to embed the concept in planning practises. Scientific writings have shown that the content of spatial quality cannot be defined. The question of what spatial quality is remains unanswered in this research. It is argued to be impossible to define the content of spatial quality. Research can only be used for providing guidelines for the process.

If research cannot provide an answer to what spatial quality is, why is it so evident to embed spatial quality in policies? Does the inclusion of the concept add something to canal projects? The answer would be positive. Spatial quality is an expression to embed societal demands into the process. Spatial quality can be used to show that governmental officials have considered the project's surroundings. To express this does not necessarily need to be called spatial quality. Environmental quality, quality of the living environment, landscape quality and many others can also be linked to the ambition to embed spatial quality. However, policy-makers have included spatial quality in policy-making in 1988 (*Fouth Note on Spatial Planning*) to express the ambition to take the surrounding areas into account (area-based approach). If government organisations want to continue the area-based approach, they need to either include spatial quality in documents or exclude it from policies in order to be clear about the use of the concept.

Dutch planning practises

Spatial quality is a concept that is not familiar in international literature. Mainly Dutch scholars focus on the concept (Janssen-Jansen et al., 2011). Literature on spatial quality may be biased through specific Dutch planning practises, making it hard to assess spatial quality from other points of view. The concept has mainly been elaborated through Dutch planner's perspectives. Why only Dutch scholars focus on the concept has not been the focus of this research. The underlying reason is expected to be policy-based. However, for and underpinned conclusion, further research is needed.

Interviewees

In this research various governmental officials have been interviewed. There are no local stakeholders involved in this research. Due to the specific knowledge concerning the concept of spatial quality, which is largely located at national level, it is considered to be unlikely to have in-depth interviews with non-governmental stakeholders. The perception of stakeholders of spatial

quality is argued to be mainly based on individual constructions. Moreover, it has been hard to assess spatial quality within Rijkswaterstaat, due to the fact that governmental officials are unaware of the concept and conceptualize it themselves.

If other stakeholders were interviewed the research could have had another outcome. It does not mean that the outcome should have been better. However, if the research was assigned more time, the perception of stakeholders towards the conclusions and recommendations could have been researched.

Organisational structure of Rijkswaterstaat

This research has been conducted under the previous organisational structures of Rijkswaterstaat. Since April 2013 the organisational structure of Rijkswaterstaat has changed. Despite the organisational structure has already been implemented, governmental officials will (partly) work in their current settings and remain project tasks and slowly moving towards new responsibilities within Rijkswaterstaat. Monitoring or enhancing spatial quality will face a different institutional context from 2013 onwards. Because responsibilities are shifting amongst governmental officials, spatial quality is something to look after in the new organisational structure.

Signs of improvement: supervisors on spatial quality

Rijkswaterstaat has already started with improving processes by, for example, installing a quality supervisor or through a learning programme to mix experts in dry (infrastructure) and wet (water ways) projects. However, whilst officially regional services are provided with a quality supervisor, practise shows that the supervisors are searching for giving meaning to the task. In other words, on paper they are assigned a task whilst in practise the supervisors do not know how to fulfil their tasks. Currently is being researched what the role of a supervisor on spatial quality needs to be. Quality managers were not active at the moment of the conducted case studies and are therefore having been left out of this research.

Conclusions

Literature and interviews have shown that spatial quality has been introduced in policies and will become of increasing importance in future projects. Despite its formal definition, the concept gained many understandings in time. In contemporary policies spatial quality is becoming acknowledged as a social construction. Policy-documents do not provide guidelines on how to construct the concept, leading to deficiencies in the planning process. Rijkswaterstaat faces challenges in how to deal with societal demands of embedding spatial quality in canal projects. This research has explored how spatial quality can be embedded in policies which can provide guidelines for future developments concerning national canals in the Netherlands.

What is at the basis of embedding spatial quality in canal projects?

Science discusses societal demands to enhance their living surroundings at the basis of embedding concepts as spatial quality into policies. Scientific reflections on policy processes show that because of the multi-dimensionality of projects it is inevitable to involve stakeholders into projects. Projects have become based on area-based developments instead of sectorial approaches towards canals. However, there is no foundation to embed spatial quality in the process. Although the definition of the concept originated already in 60 B.C., there are no contemporary policy-documents on world level or European level that aim for the inclusion of spatial quality. Only at the level of Rijkswaterstaat spatial quality is introduced in the project.

The ambition to embed spatial quality can only be traced back to scientific literature on changing societal demands and shifts in scientific paradigms. Embedding the concept cannot literally be found as a concept in policy-documents. Therefore the ambition to embed spatial quality in canal projects is seen as an organisational metaphor to enhance the canals' surroundings. Spatial quality is a general concept which embodies the ambition to take multiple environmental aspects integrative into account.

How is spatial quality perceived in literature?

Scientific literature elaborates on the many understandings spatial quality has. Whilst preceding literature used to be clear about the content of spatial quality, contemporary literature mainly discusses the lack of content of the concept. Several scholars argue that spatial quality is a metaphor for enhancing the living environment. The concept is used to share an ambition. Who does not want spatial quality? In time, the concept has been perceived as costs to transport soldiers

and has changed to a concept without meaning. Experiences in the past have led to a different perception of how to deal with environmental developments. Science cannot be detached from society. The scientific view on canals changed from a technocratic line-based approach to perceiving the canal as part of a larger landscape. Connected to governance literature, the construction of concepts is transferred to society. Literature argues that it is not possible to objectify a subjective concept by experts.

Most scientific literature on spatial quality refers to the concept as a threefold definition of balance in user value, future value and amenities. The definition discussed in literature, is the same definition used in policy-documents. Despite the issues addressed in science, it is not the definition that is point of discussion, but the conceptualisation of the concept. In other words, most literature does not focus on what the spatial quality is, but on how spatial quality can be framed. In order to conceptualize the concept, there is much discussion about participatory approaches or governance trends. Despite many positive influences of involving (local) stakeholders, many scholars argue that involvement of lower governmental bodies or stakeholders is not sufficient.
In literature mainly Dutch scholars elaborate on spatial quality which is the result of the inclusion of the concept in Dutch planning practises. International literature elaborates on many others concepts that relate to spatial quality.

How is spatial quality embedded in policies on national canals?

Only a few policy-documents discuss spatial quality. Taking the surroundings into account by design is the most dominant conceptualisation of spatial quality in policies. When spatial quality is discussed in policy-documents, the elaboration of the concept is reduced to a small paragraph in a larger document, often connected to landscape architecture or design. As in literature, there are also several policy-documents that do not literally focus on spatial quality but have a strong connection with the concept. For example, good ecological structures or architectonic constructions can influence the perception of spatial quality.

On world level as well as on European level there are no frameworks for embedding spatial quality. However, there are frameworks relating to the concept (e.g. UNESCO World Heritage) that are of influence on how the concept is constructed. On national the concept is introduced by Rijkswaterstaat. Three policy-documents discuss spatial quality. All of them are recently published. The first document, the *Kader Ruimtelijke Kwaliteit en Vormgeving* (2012), is mandatory. That means that governmental officials need to take spatial quality, as discussed in the document,

into account in infrastructural projects. The second document, the *Handreiking Ruimtelijke Kwaliteit en Vormgeving* (2012), is not mandatory but provides guidelines to embed spatial quality in infrastructural projects. More recently (2013) the *Kijk op de Ruimtelijke Kwaliteit van Snelwegen*[6] was published. Whereas the *Kader Ruimtelijke Kwaliteit en Vormgeving* and the *Handreiking Ruimtelijke Kwaliteit and Vormgeving* are used for the transmission of knowledge from national to regional services as being a general elaboration of spatial quality, the *Kijk op de Ruimtelijke Kwaliteit van Snelwegen* is a document that prescribes expert-based conceptualisations of spatial quality. Whilst several scholars focus on governance and stakeholders' participation, the conceptualisation of spatial quality in policy-documents is expert-based.
Policy-documents focus on the canal's surroundings (widening the project) rather than focussing on the unity of the canal (extending the project in length).

In what way is spatial quality used in contemporary projects on canals?

Interviews have shown that spatial quality is often something that is considered to be an addendum of the project. Several governmental officials have addressed it to be something that makes the project 'nice'. The basic assumption is that everything that is not an official main goal of the project will lead to extra budget that is needed to realise spatial quality. Financial calculations are based on the core goals of the project. Because spatial quality is not a core goal of a canal project – mostly considered to be an ambition – the concept is not included in financial calculations. Interviews have also addressed that it is more common to embed spatial quality as an ambition in 'dry' projects – often in relation to other environmental aspects – than in 'wet' projects.

Because policy-documents to not prescribe how to embed spatial quality, the concept is a variable at regional basis. In other words, although governmental officials are unaware of how to conceptualize spatial quality, the concept is being used in practise, resulting in regional differences in operationalization. In addition, the cooperation with other governmental institutes shows another issue. Knowledge about spatial quality focusses on national level. Interviews have shown that on regional level knowledge about spatial qualities is fairly uncommon. Guidelines, supposed to be mandatory, are not (fully) carried out by regional services.
Researches and concepts on national level have moved beyond provincial or municipal policy-making. Knowledge is not proportionally shared through Rijkswaterstaat. This has led to risks and misunderstandings amongst stakeholders but, above all, within a single governmental institute. Several interviewees have argued that if spatial quality is considered to be important, regional

[6] The *Kijk op de Ruimtelijke Kwaliteit van Snelwegen* has recently been published (April 2013) and has not been part of this research.

services need to know how they can construct the concept. The knowledge is argued to be produced at national level, connected to scientific elaborations on spatial quality. Thus, due to the lack of knowledge at local level – in which officials are involved in projects – and because of the risk of misinterpretation a vertical amalgamation of knowledge is needed.

Many governmental officials have argued that there are too many guidelines and frameworks that need to be taken into account. Some of the guidelines are easier to address because, for example, they are more concrete – therefore perceived as more accessible – or adhere more to the core of the project – and therefore are considered more important -. Other guidelines, for example on spatial quality, are relatively vague resulting in omitting policies.

In projects spatial quality is mostly embedded in landscape plans, master plans and ambitions documents although some differences at regional level can be seen.

Overall conclusion

The definition of spatial quality seems not to be discussed in scientific literature and policy-making. Vitruvius' definition (user-value, future-value, amenities) is not questioned in scientific debates and policy debates. In communities of practise the threefold definition of spatial quality is used to assess spatial quality yet is seldom known. The emphasis of literature is on how spatial quality can be conceptualized. Literature describes the concept as being blank whilst practise tends to look for pragmatic answers. Differences in the conceptualisation and operationalization create a gap between science and practise.

The elaboration of spatial quality in national policy-documents is connected to scientific views on the concept. The translation from policy-documents into practise is insufficient. Whereas in policy-documents spatial quality is perceived as an inter-sectorial and multi-dimensional understanding, in practise it is reduced to landscape architecture, design and aesthetics. The dominant technocratic discourse which is responsible for operationalizing spatial quality in canal projects has not shifted as much as other infrastructural fields of expertise (e.g. rivers or roads) and tends to conceptualize spatial quality by an expert-based approach. More general scientific research on spatial quality tends to construct the concept through stakeholder involvement. However, in practises the involvement of stakeholders faces organisational boundaries (e.g. time, manpower or support amongst officials) and therefore is seldom used. Policies do not provide an answer that can give a solution. Guidelines are perceived to be insufficient by governmental officers resulting in

embedding their own input to operationalize spatial quality in canal projects. This leads to major differences in the focus of spatial quality of canals at regional level, using pragmatic clarifications. Although spatial quality has become part of many canal projects, the emphasis of these projects is still on the technical demands of shipping.

When embedding spatial quality into canal projects, the institutional and organisational context need to be taken into account. When there is an ambition to use a concept in practise, knowledge needs to be transferred to the people who use it. Because there is a lack of knowledge at the regional services of Rijkswaterstaat, spatial quality is conceptualized through officials' own interpretation. Governmental officials within regional services of Rijkswaterstaat are able to connect policies with practises. Therefore a transition of knowledge needs to take place from purely national services to knowledge about spatial quality at regional services. Knowledge is related to the process of the conceptualization of spatial quality rather than how to define the spatial quality of a specific canal. This implies a different approach at Rijkswaterstaat. Whereas literature often elaborates on shifts in paradigm in water management, infrastructure and planning, the dominant discourse in canal project remains fairly technocratic. Therefore it is a challenge to transfer knowledge to regional services from a constructionists' perspective.

Recommendations

In future projects on canals, spatial quality will become a prominent aspect because the surrounding area will become increasingly important. Societal changes in the perception towards canals and experiences in the past have led to scientific shifts in how to deal with the landscape. The ambition to embed spatial quality in canal projects has been argued to be a result of these shifts. However, scientific and practical perceptions on how to embed spatial quality in canal projects, differs. In order to embed the concept of spatial quality, some changes are needed.

A clear concept

A concept needs to fit several conditions in order to be successfully used. It needs comprehensiveness, aggregation and consistency (Underdal, 1980). Policy-makers need to show that they have an ambition by anchoring spatial quality into the process (Puylaert, 2008). In other words, the concept needs to be understood and acknowledged by various stakeholders, alternatives in solutions need to be holistically researched and the concept must be structured through every layer in the planning process. However, it is hard to understand a concept which is argued to be blank (Van Assche & Jacobs, 2003). Although quality is a subjective understanding, the framework in which spatial quality is conceptualised needs to be clear.

In practise governmental officials do not show that spatial quality is an ambition that goes beyond design, although the formal definition does. Interviews have shown that spatial quality is an unknown concept at regional services, resulting in regional differences in conceptualisation often connected with (landscape) design. The perception of the same concept, used within the same project, differs amongst (governmental) stakeholders. Therefore an expert on spatial quality should be able to structure the conceptualization. However, a precondition of a supervisor is that the supervisor knows how spatial quality can be conceptualized. Due to the centralized knowledge of the concept, it is argued that appointing a supervisor in current conditions does not work until knowledge has been transferred to the regional services of Rijkswaterstaat. Only then a supervisor will be able to monitor projects and make governmental officials aware of guidelines on spatial quality. If a coordinator is not able to provide an answer, they can involve quality experts on national level.

The conceptualization of spatial quality needs to be known amongst governmental officials at regional services in order to be effective.

Integration

The approach used to enhance spatial quality needs to be integrative. Integration is a concept that does not have direct content neither as spatial quality does. However, in this context, integration is referred to as taking other fields of the plan-making process (e.g. ecology, design, safety, hydrology and so on) into account.

Spatial quality is perceived as an integrative concept, connecting various sectors. Although design is an important aspect of spatial quality (through design spatial quality is influenced) it should be considered as a mean and not as an end. Architects or designers are not able to construct a 'good' design. Governmental officials and other stakeholders that make decisions need to be aware of the multi-sectorial effects of the preferred decision. They need to understand the grand sum total of the project. Valuing decisions does not have to be based on a separation of fields: 'decision X leads to Y in ecology' or 'decision X leads to Z in safety'. Due to time limits, financial restrictions and societal priorities it is not possible to conceptualize spatial quality fully by stakeholder's participation. A decision has to be made by an expert which can oversee the complete set of effects on the surrounding area of the canal. Future guidelines must not focus on spatial quality as an outcome of an expert-based sectorial meaning, but seen as a coherent multi-dimensional understanding.

Rijkswaterstaat is already enhancing the landscape. Infrastructural plans have moved towards total designs (Heeres et al., 2012). The developments are sectorial based. Governmental officials do not refer to a complete set of enhancements but refer to separate effects which can influence spatial quality. To provide an example of project plans that are able to enhance spatial quality: renewing the trees next to the Lek canal (grounded in landscape architecture); making the Twente canals suitable for fauna crossings (grounded in ecology) or maintaining the historical sluice II at the Wilhelmina canal (grounded in heritage).
There is no plan that brings various aspects together. Although projects plans would cover the total project, they have a rather sectorial elaboration and do not interlink sectorial advantages.

Although plans are moving towards a total design and focus on the landscape, spatial quality remains based on separate fields of expertise. The sectorial approach needs to be shifted towards an integrative approach focussing on the grand total.

The multi-dimensionality of spatial quality needs to be endorsed by (parts of) policy-documents in which sectorial advantages are interlinked.

The role of the landscape architect

Despite scientific literature discusses the conceptualisation of spatial quality, document of projects on regional level often emphasize on a prescription of spatial quality. Hence, it is not the content that needs to be questioned, but the emphasis needs to be on the process of how to construct spatial quality. How refers a method – not a product or static outcome – that is able to define spatial quality. However, it is not possible to develop one method on national level as it is also impossible to define spatial quality on national level. The concept depends on many societal and site-specific circumstances influencing the meaning of spatial quality. Guidelines need to be able to cooperate with site-specific aspects. Therefore it is argued that instead of focussing on the content, it is useful to provide governmental officials with tools (methods) that they can use to embed spatial quality in projects. Methods are more flexible on site-specific aspects than predefined are outcomes on national level.

The landscape architect has become an expert that is able to define the spatial quality of canals. In many writings it has been argued that it is impossible to construct the subjective concept of spatial quality by an expert. However, it is possible. The landscape architect needs to adapt its task from a function in the project towards a role in which the architect is able to construct spatial quality together with stakeholders. In this function the landscape architect is a process-manager which does not have (much) input, but is able to combine and connect different views into one main view that represents spatial quality at a given moment, at a given time. The landscape architect needs to include experts in the process but also society. In the current organisational context it is not possible to involve many individual stakeholders. Therefore politics at municipal level needs to represent what society considers being important (see recommendation below). Whereas the input of politics mainly focusses at local level, the input of experts should take the spatial quality on trajectory level into account in order to monitor the spatial quality of the canal. Spatial quality is a process and not the outcome of an expert-based product.

Guidelines need to be able to address methods in which spatial quality can be constructed at regional level by means of a landscape architect having a role in the process.

The involvement of politics

In order to conceptualize spatial quality, the involvement of society is necessary. However, in practise there are two main restrictions. At first, due to organisational boundaries it is not possible to involve individual stakeholders. Secondly, the conceptualisation of spatial quality by individual stakeholders would lead to an impossible amount of perceptions which cannot be translated one-on-one into projects.

Literatures as well as empirical analyses have shown that spatial quality cannot be defined and, moreover, prescribed. Some scholars have argued that the landscape can be assessed and described (Termorshuizen & Opdam, 2009). The value attached to the description is highly subjective. When a concept is perceived as subjective, many scholars immediately consider taking stakeholder's opinion into account conceptualize spatial quality, which is perceived to be unquestionable. But there are some severe critiques on the inclusion of stakeholders to give meaning to spatial quality (see: Veldboer, 1996; Edelenbos & Van Twist, 1997; Hillier, 2003; Mannigel, 2008; Stenske, 2008).

Stakeholders included in current projects are mainly governmental institutions as, for example, provinces or municipalities. Many scholars would argue for direct involvement of individual stakeholders rather than the involvement by means of governmental officials. Sometimes this is seen as almost self-evident. Hence, why is effort put in a participatory system that does not represent society, is not democratically chosen and also does not have the probability to be representative in future? Is it not the task of the government to represent society? Thus, has society not provide the government with power to represent the majority of people? If so, there has to be made difference in governmental officials and governmental representatives. Governmental officials are not bound to a political party. Governmental representatives are involved in politics, belonging to a political party. They make (political) decisions in Boards or Councils. Be means of democratic elections, they represent society.

It is argued to be rather odd that non-representatives create measures that should represent societal perceptions of spatial quality. Is the conceptualization of spatial quality not a political decision? Besides, involving other governmental stakeholders on lower level fits in contemporary policy-making trends, aiming at decentralisation of governmental tasks towards regional or local level. The decisions they make are considered to be representative whilst many other solutions are not.

Democratic representatives at local level need to be involved as one of the stakeholders in the process of the conceptualization of spatial quality.

The exchange of knowledge at horizontal and vertical level

The research has shown that there is a difference in implementation of environmental concepts as spatial quality between dry and wet discourse. Besides horizontal differences in the diversification of knowledge, also vertical variants are seen.

On horizontal level there is a difference in knowledge on spatial quality. In infrastructural projects experts are often working on 'dry' (highway) projects or on 'wet' (river or canal) projects yet seldom both. Because of differences in the societal perception of highways – partly reflected in laws and policies -, dry projects tend to have more empirical knowledge on including environmental concepts in the planning process. Because teams of experts are not mixed, their knowledge remains within the same discourse.

At vertical level there are deficiencies in the planning process amongst project teams. In some projects there is no direct connection from the plan study phase towards the realisation phase. It happens that in middle of the project (from plan to realisation), the project team changes. Although experts in some projects remain involved in both phases, general supervisors are often connected to one phase. As a result, the inter-sectorial concept of spatial quality will become relapsed in sectorial understandings.

In order to enhance knowledge it is necessary to mix dry and wet discourses. The exchange of knowledge can lead to different views and perceptions of governmental stakeholders of spatial quality which can serve as a basis for guidelines on spatial quality. A mixture of project members will widen the view of officials – by mixing dry and wet discourses – as well as in length – by extending the involvement of officials in the total process –.

The conceptualisation of spatial quality can be improvised by interchanging knowledge of dry and wet discourse.

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Appendix 1 – Case study results

Appendix 1 provides a summary of the case studies (projects) and a description of the conducted interviews. The case studies analyse projects that have been realised or that currently are in the phase of realisation. It is important that research does not only focus on the conceptualization of spatial quality but also on the operationalization and application in practise. It is argued that spatial quality is a multi-stage concept that has to be included into several steps along the process. How is spatial quality taken into account within these different projects? Lessons can be learned from experiences in the past.

In order to avoid cognitive bias, the elaboration of the interviews is in Dutch.

Case studies

Case study 1: a forth lock for Ternaaien

Case study 2: expansion of the Juliana canal

Case study 3: expansion of the Wilhelmina canal

Case study 4: bypass Zuid-Willemsvaart

Case study 5: increasing the capacity of lock Eefde and the Twente canals

Case study 6: transition from provincial management to national management

Case study 7: maintaining spatial quality

Case study 1: A forth lock for Ternaaien

Description of case study 1

Area: Limburg (near Maastricht)

Decay of locks: +/- 15 metres

Project

Decision of implementation: 2011

Start realisation: 2011

Completion: 2015

Short description of the project

Near Maastricht there is a connection between the Albert canal and the river Meuse. The connection is established through locks which cover the decay of 15 metres. The complex exists out of three locks of which the largest one is in use. Currently a fourth lock is being constructed which allows bigger ships to enter the complex.

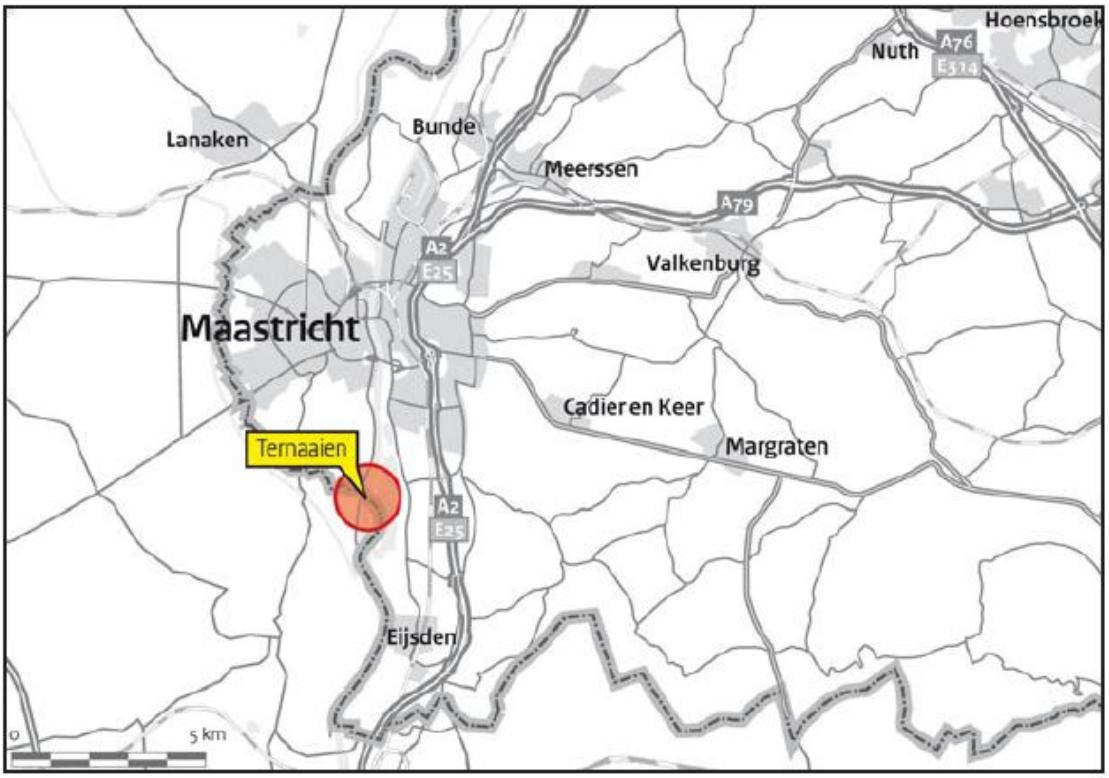
The junction between the Albert Canal and the Meuse

The location of the Dutch and Belgium border

History and information

The lock of Ternaaien (in French: Lanaye) is constructed in the beginning of the 20th century. The lock is located on the junction of the Albert canal and the river Meuse. It is often referred to as the 'stop van Ternaaien' which originated in the 1930s. It was called the stop, because after the completion of the Albert canal and the construction of the locks ships of more than 650 tons were not able to use the locks. Larger ships were also not able to reach Maastricht.

The canal Liège – Maastricht (in use 1848-1963) was also too small for large ships (maximum 450 tons). So the traffic of large ships (more than 450 tons) was partly stopped at Ternaaien. Besides stop, in Walloon it is also referred to as the 'bouchon de Lanaye' because before the complex was expended with in total three locks in 1961 it is experienced to be a bottleneck in traffic.



Location of locks of Ternaaien

The lock is has a bunker which leads to a underground pathway to the nearby fortress Eben-Emael, constructed in the marl in the period between the first World War I and World War II. Currently, the oldest and smallest locks are not in use anymore, although they are still part of the lock complex.

The decay of the water level between the Albert canal and the river Meuse is about 15 metres. Because the ships have to wait for a long period of time to enter the locks and move on, the Dutch as well as the Belgium government decided in 2001 to construct a fourth lock in Ternaaien. The fourth lock is being constructed since 2011 and the project will be finished approximately in 2015. It has to be noticed that it is not only the lock it selves but also the route towards the lock and the carrying out that is being changed. Although an extra (fourth) lock might not seem to be big, the locks in Ternaaien become more visible by enhancing the width of the complex.

Interview result of case study 1

Status: RATIFIED

Present:

- Jos Huisman (Juliana canal): advisor RWS Limburg: aspires spatial adaption in projects. Mr. Huisman works at Rijkswaterstaat for 31 years.
- Sico Bouwsma (lock Ternaaien/Juliana canal): Advisor plan studies for water and shipping. Mr. Bouwsma is involved at lock Ternaaien and also for a minor part at the Juliana canal for traffic management.

Date: February 5th 2013

Interview

Het sluizencomplex Ternaaien ligt in Belgium, en wel in Wallonië. Daarom is het voornamelijk een Belgisch project dat ook aangestuurd wordt door de Belgische overheid. De Waalse overheid heeft het initiatief genomen voor het vergroten van de capaciteit voor dit sluizencomplex. De invloed van Rijkswaterstaat op het project is klein. De Nederlandse bijdrage aan het project betreft twee onderdelen: (1) het maken van een camouflagemuur ten westen van het sluizencomplex en (2) het maken van een ecologisch eiland ten behoeve van fauna (vissen). In dit project speelt ruimtelijke kwaliteit weinig tot geen rol, omdat het grootste gedeelte van het project afspeelt op Belgisch grondgebied. Er is daarbij ook weinig informatie voor handen, ook bij Rijkswaterstaat vanwege de taalbarrière. Wel is bekend dat er landschapsarchitecten betrokken zijn in het project, maar dat het met name gaat om de inrichting van de oude Maasarm en niet zozeer het sluizencomplex zelf. Dit is een civieltechnisch proces waarbij de sluis centraal staat en niet de omgeving. Er is daarmee een afweging gemaakt of het project een gedeelte van de omgeving moet zijn of juist de sluis extra moet opvallen t.o.v. de omgeving. Dit laatste kan ook een ruimtelijke kwaliteit zijn. Ruimtelijke kwaliteit wordt niet altijd gemaakt omdat het ontwerp goed in de omgeving past (inpassing). Immers, het sluizencomplex trekt jaarlijks veel bezoekers en de hoogte van het verval is bijzonder (+/- 14 meter). De bezoekers komen voor de sluis en niet voor de omgeving. Als het sluizencomplex dus op de omgeving aangepast zou worden, zou dat kunnen leiden tot een degradatie voor het complex zelf (dit hoeft uiteraard niet, en ligt aan het uiteindelijke ontwerp).

Een groot verschil tussen het project in België is dat alle vergunning in 1x worden aangevraagd voor het hele sluiscomplex. Voor het betrekkelijk kleine Nederlandse deel waren maar liefst 8 vergunningen nodig (o.a. bouwvergunning, flora- fauna wet, etc.). Daardoor is het project (en ook

de inspraak van de burgers) veel overzichtelijker. Doordat er niet steeds kleine elementen behandeld worden, wordt het totaalplaatje ook veel overzichtelijker.

Case study 2: Expansion of the Juliana canal

Description of case study 2

Area: Limburg (Maastricht – Elsloo)

Total length of canal: 36 kilometres

Project

Record of decision: 2009

Start realisation: 2011

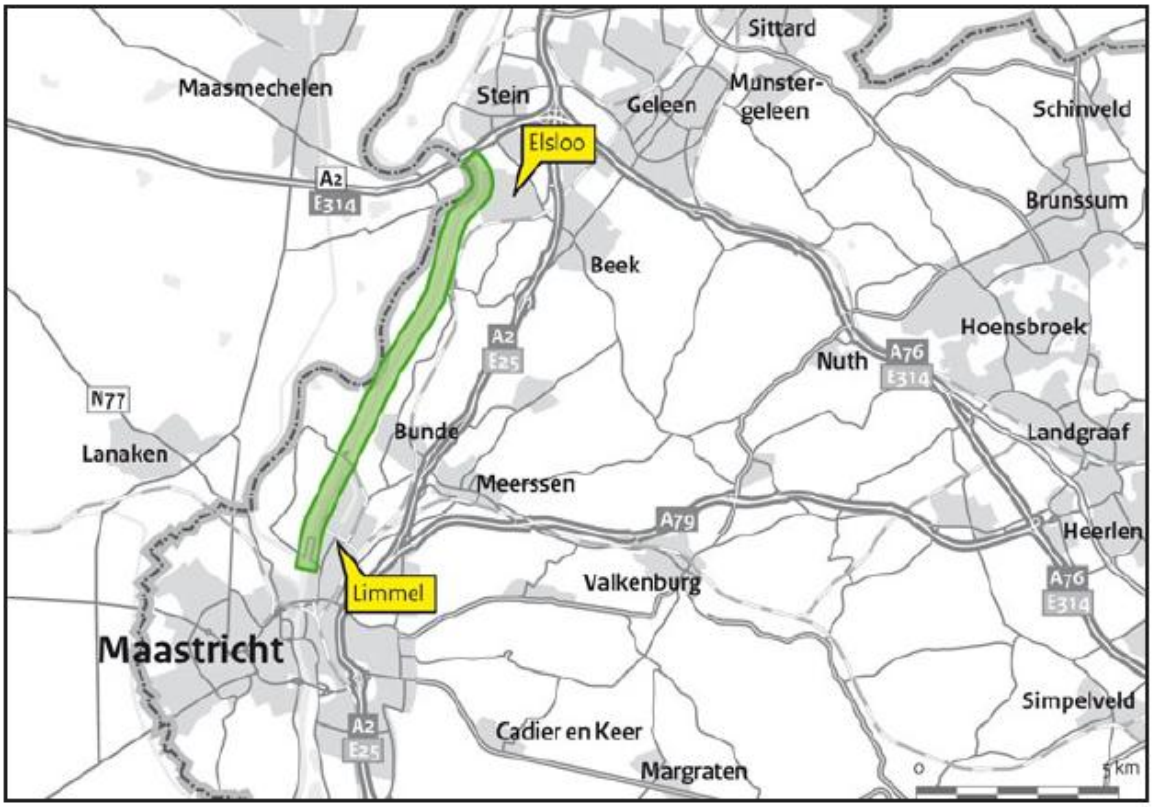
Completion: 2017

Construction of the Juliana canal (1930)

Short description of the project

Already from the opening in 1935, the Juliana canal is a busy canal compared to other canals in the Netherlands. This resulted in an insufficient capacity of the locks which are replaced and expanded in 1965. Because of the increase in scale and the growth of number of ships it is necessary to expand the Juliana canal in order to have an efficient unrolling of the traffic. Currently the Juliana canal is being upgraded again; the Juliana canal is widened between Limmel and Elsloo. The record of decision (*Tracébesluit*) is decided in 2009. The project is currently in the realisation phase (starting from 2011 onwards) and will be finished in 2017.

The canal is able to carry ships of 110 metres long, 11,4 metres width, 4,5 metres draught and 7 metres high (class Va).



Juliana canal: expanding Maastricht - Elsloo

History and information

The creating of the Juliana canal originated in the development of mining areas near Luik (Belgium) and several others in the province of Limburg (the Netherlands). The construction of the canal started in Maasbracht (northern part) as well as in the south (Maastricht) and met near Stein in the 1935. The Juliana canal has not been opened in total (35 kilometres) but has been opened in phases. Starting in 1933, when the part between Born and Maasbracht has been opened, onwards to 1935 where the queen of the Netherlands, Juliana, opened the canal on 16th September.

The southern entrance is a side-branch of the Meuse, starting near Maastricht. About 36 kilometres later, it connects again to the Meuse, near Maasbracht. The Meuse is never more than 1 kilometre away from the canal. Most of the ships going through the Meuse towards Belgium use the Juliana canal. The decay of the canal is 23 metres which is by-passed by four locks.

The lock in Born has the highest decay of the Netherlands; almost 12 metres (NB. the locks in Ternaaien have a higher decay but is located in Belgium). The canal is considered to be a rather extraordinary project because of its location in uneven territories.

Remarkable is that the river Meuse, at the most, is not more than 1 kilometres. The canal has a decay of 23 metres which takes place by four locks; near Limmel, Born, Roosteren and Maasbracht. The decay of the lock near Born is 11,35 metres which is the highest decay of a canal in the Netherlands.

Juliana canal and river Meuse

Another remarkable fact is the disappearance of a village. In the neighbourhood of Elsoo, the 'Scharberg' – a hill in the landscape – needed to be levelled. Because of that, a part of the village (43 houses, a school and the city hall) has disappeared. A characteristic of the Juliana canal is that the bridges are constructed very lightly. It is a result of the locations former mining area along the canal. Not used mine galleries can be flooded which causes soil subsidence.

Interview result of case study 2

Status: RATIFIED

Present:

- Jos Huisman (Juliana canal): advisor RWS Limburg: aspires spatial adaption in projects. Mr. Huisman works at Rijkswaterstaat for 31 years.
- Sico Bouwsma (lock Ternaaien/Juliana canal): Advisor plan studies for water and shipping. Mr. Bouwsma is involved at lock Ternaaien and also for a minor part at the Juliana canal for traffic management.
- Henk Verkerk: Head of knowledge management of programme Maaswerken (Juliana canal is part of the larger project Maaswerken). The total programme involves 52 smaller projects.

Date: February 5th 2013

Interview

Bij de verbreding van het Julianakanaal focust the ruimtelijke kwaliteit zich vooral op het terugbrengen van elementen die er waren. Dat wil zeggen, indien er 50 bomen gekapt worden, zullen deze ook weer aangeplant worden. In die zin is de ruimtelijke kwaliteit dus meegenomen in het Tracébesluit. Het is dus daadwerkelijk onderdeel van het plan. Daarmee blijft de karakteristiek van het Julianakanaal behouden.

Eén object kan daarbij ook meerdere functies hebben. Het staat dus niet altijd onder het kopje "ruimtelijke kwaliteit". Bijvoorbeeld, de bomenrij kan gezien worden als ruimtelijke kwaliteit, maar daarbij heeft het ook andere functies. De bomenrij is onderdeel van een aanvliegroute voor vleermuizen. Daarnaast heeft de bomenrij ook een (historische) gebruiksfunctie, namelijk als windvanger (immers, het Julianakanaal ligt relatief hoog en vangt dus veel wind) en ondertussen een culturele functie (de bomenrij is onderdeel van het landschap geworden). Ook andere objecten (zoals de dijken bij nieuwe passeerstroken) worden teruggebracht op hetzelfde niveau als ze waren.

Het terugplaatsen van de markante bomenrijen is deels vanuit ambitie (van Rijkswaterstaat) gedaan, maar ook deels vanuit wetgeving (flora- en fauna wet). De aanvliegroute moet namelijk behouden blijven vanuit die wetgeving. Er is geen sterke ambitie om de ruimtelijke kwaliteit te versterken, wel om deze te behouden. Het project focust zich op het verkeer (scheepvaart) in het Julianakanaal.

Dit in tegenstelling tot Maaswerken waarin veel intensiever is gezocht naar het inpassen van de Maas in de omgeving. Het doel van het programma Maaswerken is om (1) te zorgen voor minder overstromingen, door middel van – onder andere – het versterken van kades, het verdiepen en verbreden van rivierbeddingen of het verlagen van uiterwaarden; (2) de Maas beter bevaarbaar maken en (3) de Maas natuurlijker maken, door het ontwikkelen van nieuwe natuur en het toevoegen van extra (natuurlijke) ruimte rondom de Maas. Deze doelstellingen zorgen dan ook voor een betere mogelijkheid tot inpasbaarheid van de Maas in de omgeving. Bij Maaswerken is ook veel intensiever gesproken met externe partijen en stakeholders.

De ruimtelijke kwaliteit is vastgelegd in diverse plannen. In het landschapsplan bijvoorbeeld komt het esthetisch plan sterk naar voren, in het programma van eisen worden de ambities vertaald naar concrete eisen en daarna naar maatregelen. Externe partijen hebben daar in principe twee momenten van inspraak in: (1) bij het vaststellen van het Tracébesluit hebben partijen inspraak en kunnen reacties worden doorgegeven en (2) bij de vergunning verlening krijgen partijen ook inspraak. Het zijn twee officiële inspraakmomenten die in elk proces gelden. Er is bij de verbreding van het Julianakanaal geen sprake geweest van een interactief planproces, zoals bijvoorbeeld bij de snelweg A2 wel het geval is. In principe zijn deze interactieve planprocessen meer gebruikelijk bij droge projecten (aan wegen) dan aan natte projecten (aan rivieren/kanalen). De Commissie Elverding heeft wel een advies gegeven om in voortrajecten meer actoren te betrekken. In praktijk wordt dit niet altijd gedaan, omdat de ervaring leert dat het besluitvormingsproces dan wel sneller loopt, maar de voorfase duurt dan erg lang (vaak wel tot 7 jaar voor alleen de voorfase). In de praktijk levert het betrekken van externe partijen om zo tot ruimtelijke kwaliteit nog een probleem op. In de voorfase is het project namelijk erg vaag. Er worden dan alleen richtlijnen en ambities opgesteld die niet zozeer zijn te begrijpen. Uit andere projecten is gebleken dat de wensen van stakeholders vaak redelijk concreet zijn en dat zij zich niet op hoofdlijnen richten, maar op plaats specifieke concrete wensen.
Het Julianakanaal kent wel veel communicatie naar externe partijen. Ze zijn niet direct betrokken, maar wel goed geïnformeerd via het Maaswerken project.

De (ruimtelijke) kwaliteit van het project wordt door het projectteam dat betrokken is in de planfase opgesteld. Achteraf vindt controle plaats doordat het eerste projectteam (planfase) als toetser betrokken blijft tijdens het uitvoeringsproces. Er is daardoor een duidelijke schakel tussen beide teams.

Om tot ruimtelijke kwaliteit te kunnen komen, moeten maatregelen als harde eis worden opgesteld. Dit kan bijvoorbeeld gebeuren in het programma van eisen. Zonder die harde eisen wordt ruimtelijke kwaliteit niet meegenomen. Immers, de aannemer vertaald de eisen direct waar die op kan scoren naar uitvoeringsmaatregelen. Voor het verhaal eromheen kan hij niet scoren, maar het inwilligen van de eisen wel. Ruimtelijke kwaliteit degradeert daarmee tot een niet-verplichte suggestie.

Ambities (waaronder ruimtelijke kwaliteit) hangen vaak samen met de mate waarin men iets wil. Voor de opdrachtgever of –nemer is het niet altijd positief. Zo is het fietspad dat naast het Julianakanaal ligt redelijk druk bezocht. Echter, het is officieel geen fietspad, maar een onderhoud pad (er zijn ook geen borden geplaatst met daarop FIETSPAD). Als het wel een fietspad zou zijn, komen er veel regels bij kijken (o.a. richtlijnen fietspaden). Daardoor zal dan weer de dijk verder verbreed moeten worden (i.v.m. verplichte hekken op de dijk voor de veiligheid, etc.). Door die regeltjes kost in dit geval RK dus extra geld, alhoewel dat niet nodig hoeft te zijn (immers, nu maken recreanten ook al gebruik van het pad).

Een ander probleem voor ruimtelijke kwaliteit, maar wat ook geldt voor de hele ontwikkeling van een project, is de veranderingen die plaatsvinden in beleid. Het project en de omstandigheden waarbinnen een project samenvalt is daar niet op berekent. Als er 1 bomenrij is begroot 5 jaar geleden en nieuw beleid wil het kanaal extra accentueren, dan kan men niet zomaar 2 bomenrijen aanleggen. Daarmee is er frictie tussen nieuw beleid (b.v. veranderingen in de Waterwet) en staand beleid (het Maaswerkenproject). De voorfase, besluit, uitvoeringsfase heeft wel 12 jaar geduurd. Daarin is veel afgesproken met de omgeving, procedures zijn doorgelopen en budget is toegekend, wat later weer veranderd zou moeten worden vanwege beleidsontwikkelingen (met daarin de nodige kosten, vertragingen, discussies met de omgeving, etc.).

Case study 3: Expansion of Wilhelminakanaal

Description of case study 3

Area: Noord-Brabant (Tilburg)

Total length of canal: 68 kilometres

Project

Decision of the project: 2005

Start realisation: 2012

Completion: 2016

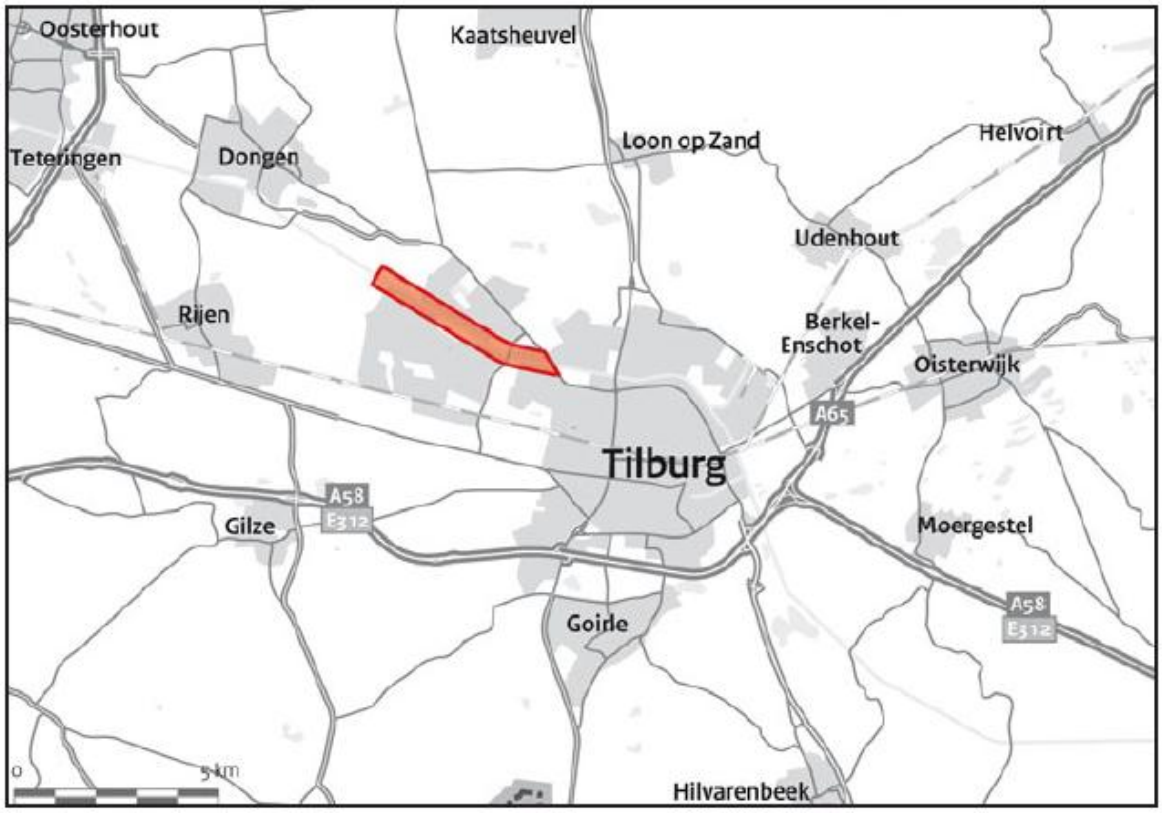
Short description of the project

Between Donge (influx) and Dongensebrug the canal will be widened; lock II (Dongense Kanaaldijk, Tilburg-Reeshof) will be removed and lock III (Dongense Kanaaldijk, Wandelbos) will be upgraded in order to be used by class IV ships. This project has started in 2012 and is expected to be finished in 2016.

History and information

The first plans discussing a connection between Tilburg and Eindhoven already originated in 1794, but it took until 1910 to start creating the canal. The canal was finished in 1923 and opened at April 4th of 1923.

The canal has in total five locks. The third lock has two lock-chambers (the area between the two lock gates) which is unique for the Netherlands. Lock III and lock IV are official monuments (Rijksmonument).



Juliana canal near Tilburg between Dongen and Dongensebrug

A part of the canal (between Geertruidenberg and Dongen) is suitable for class IV ships (1350 tons). The remaining part of the Wilhelmina canal is suitable for ships of class II (650 tons). In order to be able to be suitable for class IV ships everywhere, the remaining part between Dongen and Dongensebrug is being widened.

Wilhelmina canal near lock II

Interview result of case study 3

Status: RATIFIED

Present:

- Paul Wissmann: project manager plan study (initiation) phase. Mr.Wissmann is currently involved in the development of the project as an advisor for current developments, linking the plan study phase with the execution phase.

Date: February 4th 2013

Interview

Het Wilhelminakanaal wordt verdiept, verbreedt en er komt een nieuwe sluis. Ruimtelijke kwaliteit speelt daarin geen hoofdrol, maar is meegenomen in het proces. Voor het Wilhelminakanaal geldt dat de ruimtelijke kwaliteit zich in het bijzonder richtte op het monumentale sluizencomplex (sluis III). Dit sluizencomplex is aangemerkt als een Rijksmonument en kreeg daarom extra aandacht. Sluis III is een nog gave historische tweetrapssluis (daterend: 1917) en daarmee uniek in Nederland. De monumentale status van de sluis maakte het nagenoeg onmogelijk om deze sluis om te bouwen tot een klasse IV sluis. Daarmee zou het monument

geweld aan worden gedaan. Besloten is de 'oude sluis III' ongemoeid te laten en een volledig nieuwe sluis ten zuiden van deze sluis te realiseren. Om dit op een verantwoorde wijze te doen is architectenbureau Wessel de Jonge gevraagd een Massterplan voor beide sluizen te ontwikkelen. Deze twee sluizencomplexen vormen een belangrijk punt als het gaat om ruimtelijke kwaliteit. Het zijn twee elementen in het landschap die fysiek met elkaar verbonden worden en die diverse functies krijgen: de oude sluis zal gebruikt kunnen worden voor o.a. recreatie (met een fietsbrug), educatie (zowel bij de nieuwe sluis als de oude sluis is plaats voor educatieve excursies voor o.a. schoolgaande kinderen, maar ook andere geïnteresseerden). Ruimtelijke kwaliteit heeft in dit project 3 verschillende niveaus volgens dhr. Wissmann: (1) ruimtelijke kwaliteit op trajectniveau, (2) ruimtelijke kwaliteit op objectniveau en (3) duurzaamheid. Bij het verbreden van het Wilhelminakanaal en het maken van een nieuwe sluis is er op niveau 2 (objectniveau) veel aandacht besteed aan de (her)ontwikkeling van de oude en nieuwe sluis III. Ook duurzaamheid is rond dit sluizencomplex meegenomen. Er wordt een waterkrachtcentrale gebouwd naast sluis III die groene stroom zal leveren in de toekomst. De waterkrachtcentrale heeft – net als het sluizencomplex in zijn geheel – grote waarde, zowel op financieel vlak (immers, binnen 7 jaar is de investering al terugverdiend), op belevingsvlak (kan gebruikt worden als communicatie) en op toekomstvlak (levert groene stroom). Ruimtelijke kwaliteit is niet gelijk aan duurzaamheid, maar beiden hebben wel raakvlakken. In de praktijk hangen ze toch vaak samen merkt dhr. Wissmann.

Op trajectniveau kon de ruimtelijke kwaliteit verder worden versterkt. Dit kan Rijkswaterstaat ook niet alleen doen, vanwege de grondpositie. De samenwerking moet worden gezocht met andere partijen.
Er was gelobbyd vanuit de regio (d.w.z.: gemeente & provincie) om het Wilhelminakanaal door te ontwikkelen. Zij waren als het waren de initiator van het project. Rijkswaterstaat heeft de taak op zich genomen om het kanaal te verbreden, verdiepen en de sluizen aan te passen. Daarvoor was een budget beschikbaar van 70 mln. euro, waarbij 50 mln. voor rekening komt van Rijkswaterstaat, 10 mln. voor de provincie en 10 mln. voor de gemeenten. Echter, de totale kostenraming van het project was 100 mln. Een mogelijke oplossing daarbij was om voor extra inkomsten te zorgen (met name als taak voor de gemeenten). Door Ingenieursbureau Aveco de Bondt is een kansenkaart gemaakt om een beeld te krijgen van wat (out-of-the-box denkend) langs het kanaal allemaal zou kunnen. Ideeën die geopperd zijn, zijn het ontwikkelen van woningen rondom het kanaal, het aanleggen van een extra (recreatie) waterplas, het ontwikkelen van een kano-route door het sluizencomplex t.b.v. de lokale roeivereniging, e.d. Er is daartoe een kansenkaart opgesteld voor het hele kanaaltraject in Tilburg. De kansenkaart geeft handvaten voor de ontwikkelingen die nu

spelen (zoals rondom het sluizencomplex III), maar ook voor toekomstige ontwikkelingen geeft het op trajectniveau houvast. Echter, in crisistijden werden de beschikbare opties vooral beoordeeld als risico's, met als resultaat dat gemeenten (buiten de 10 mln.) geen extra geld willen besteden. De (technische) opwaardering van het kanaal heeft de eerste prioriteit; het kwalitatief opwaarderen van de kanaalomgeving zal op de middellange termijn wellicht alsnog gebeuren (10-15 jaar).

Bij de ontwikkeling van het project is wel enige spanning tussen de planfase en de uitvoeringsfase. Ruimtelijke kwaliteit is in de planfase moeilijk te becijferen, het blijft bij beschouwingen, kansen en beelden. Daardoor valt het regelmatig weg in de contractfase. De aannemer vertaald vervolgens alleen (harde) eisen naar de praktijk. Ruimtelijke kwaliteitseisen worden in de planfase vaak niet hard op papier gezet, waardoor het verhaal wegvalt. Ruimtelijke kwaliteit mag dus niet te abstract zijn op projectniveau. Het moet een duidelijk criterium zijn waar men op kan scoren. Zolang ruimtelijke kwaliteit niet is meegenomen in het contract is er kans dat het verdwijnt tussen de plan- en uitvoeringsfase. Een kans zit mogelijk in EMVI-criteria (economisch meest voordelige inschrijving) bij een aanbieding. Aanbieders die iets extra aanbieden ten aanzien van ruimtelijke kwaliteit zouden meer EMVI-punten kunnen krijgen. Belangrijk voor een inschrijver is dan dat het voordeel dat hij krijgt opweegt tegen de investering die hij in ruimtelijke kwaliteit doet. Is die verhouding niet in zijn voordeel dan zal hij op dit punt niets significants aanbieden.

Aandachtspunt voor het versterken van de ruimtelijke kwaliteit rondom kanalen moet uitgaan naar de relatie met andere partijen. Ruimtelijke kwaliteit moet ook onderdeel zijn van gemeentelijk beleid. Rijkswaterstaat heeft veelal de gronden in bezit of beheer die nodig zijn voor de technische ontwikkeling van het kanaal. Gemeenten hebben in veel gevallen de gronden in bezit naast de kanalen. En ruimtelijke kwaliteit hangt toch samen met het integreren van diverse waarden van het grotere geheel (dus: de omgeving in relatie tot het kanaal v.v.). Aan de andere kant kan er wel gesteld worden dat Rijkswaterstaat juist de kennis beschikt om extra kwaliteit toe te voegen, terwijl dit niet geldt voor alle gemeenten in Nederland. Enerzijds kan Rijkswaterstaat dus de kennis in praktijk brengen, maar moet dit wel in overeenstemming zijn met gemeentelijk beleid, omdat zij in een groot aantal gevallen de grondeigenaar zijn.

Een andere uitdaging is het financiële verhaal van ruimtelijke kwaliteit. In veel gevallen kost het namelijk geld om extra waarden toe te voegen aan het project: er is getwijfeld over het aanleggen van vissteigers. Uiteindelijk is dit niet gedaan, omdat het 2000 euro per vissteiger koste en naar alle waarschijnlijkheid het onderhoudscontract daardoor ook duurder uitvalt. Kwaliteit heeft dan een

prijs. In een ander geval levert het verdiepen juist zonder meerkosten winst op voor de omgeving (waterpeil – 2,5 meter t.o.v. huidige waterstand). Daardoor hoeven de dijken minder hoog te zijn, waardoor het uitzicht voor bewoners minder belemmerd wordt. Ruimtelijke kwaliteit is dus niet altijd een verhaal wat geld kost en kan soms ook door andere maatregelen gestimuleerd worden. Maar in het algemeen worden projecten vanuit een technisch perspectief aangepakt en wordt er vaak gebruik gemaakt van een kosten-baten analyse om afwegingen te maken. De afwegingen worden op basis van 'nu' (bouwkosten)gemaakt en er wordt daarbij niet even grondig gekeken naar de lange termijn (levenscycluskosten). Dan zouden wellicht andere keuzes gemaakt zijn. Bijvoorbeeld, bij het bouwen van een nieuwe sluis wordt beperkt gekeken naar de kostenvoordelen en nadelen van 0 tot 100 jaar, maar vooral gefocust op korte of maximaal de middellange termijn. RK heeft ook vaak een hoge aanvangswaarde, maar op de lange termijn hoeft het niet duurder te zijn. Daarom wordt RK vaak als 'mooimakerij' gezien, vanwege de duurdere aanvangswaarde, omdat het gewoon meer kost op korte termijn. Nu bijvoorbeeld, moet er worden gekozen tussen en functionalistische sluis vs. extra (voor het scheepvaartverkeer niet noodzakelijke) aanpassingen om RK te bevorderen. Nu kost dat meer, maar op lange termijn..?

Case study 4: Bypass Zuid-Willemsvaart

Description of case study 4

Area: Noord-Brabant (‘s-Hertogenbosch)

Total length of canal: 123 kilometres

Length of bypass: 9 kilometres

Project

Record of decision: 2010

Start realisation: 2010

Completion: 2015

Short description of the project

Near ‘s-Hertogenbosch the Zuid-Willemsvaart will be diverted because the trajectory through the centre of ‘s-Hertogenbosch is not sufficient. Although the canal is suitable for class IV ships, a small part currently is located through the city centre of ‘s-Hertogenbosch where it suits class II ships. The water way will remain, but for ships a new trajectory is going to be made that leads ships around the city centre. The overall goal is to make total trajectory of the Zuid-Willemsvaart

suitable for class IV with a distinct in measurements: length: 90 metres; with: 12 metres; draught: 2,5 metres; height: 5,25-7 metres).

The diversion of the Zuid-Willemsvaart; future trajectory already visible on top

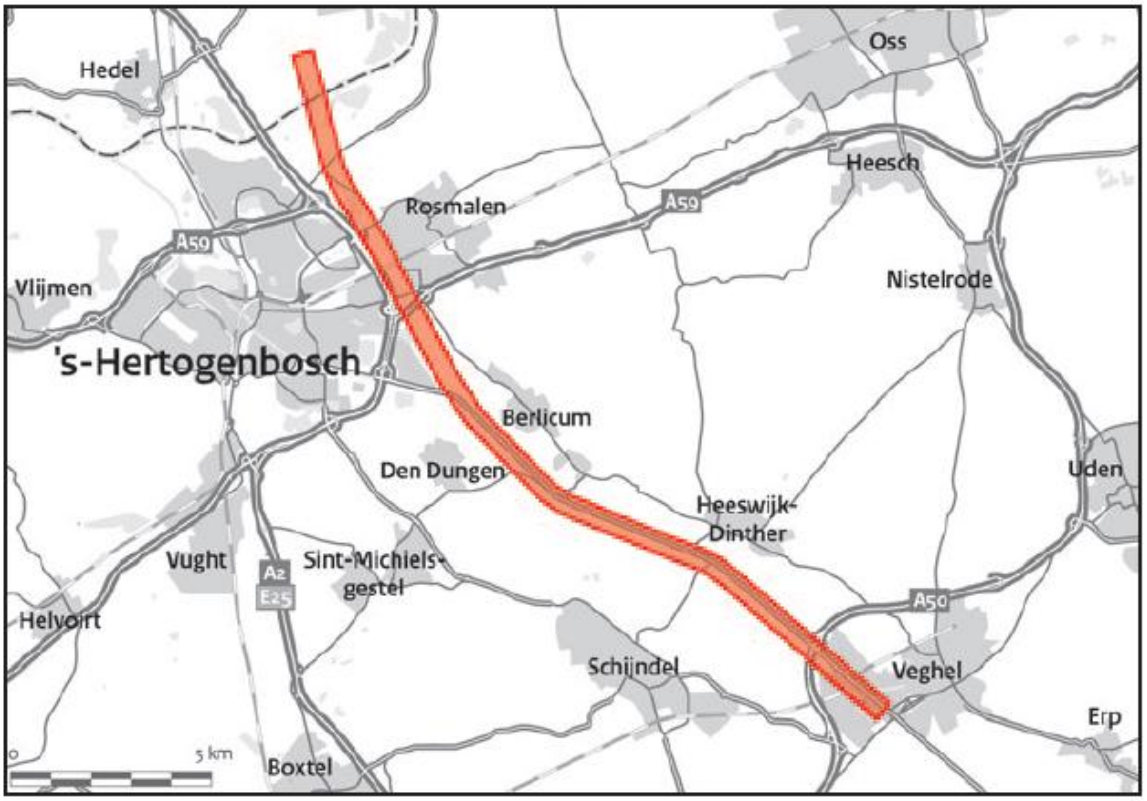
Short history and information

The Zuid-Willemsvaart has been created on behalf of King Willem I. Parts of the canal already existed, created in the time of the French empire on behalf of Napoleon Bonaparte. The parts that existed were mainly small connections between rivers.

In 1822 King Willem I decided to construct the canal. In 1823 the construction was started. In 1826 the first part of the canal ('s-Hertogenbosch – Helmond) was completed. One year later the second part (Helmond – Maastricht) was completed. In 1850 the canal was extended to Liège. The Zuid-Willemsvaart has been constructed literally by hand.

Zuid-Willemsvaart in the centre of 's_Hertogenbosch

The Zuid-Willemsvaart is a large canal, covering 123 kilometres in total. The decay is about 40 metres. Due to another Willemsvaart is located in Drenthe, this water way was assigned 'South' in its name.



The decay trajectory of the Zuid-Willemsvaart near 's-Hertogenbosch

Interview result of case study 4

Status: RATIFIED

Present:

- Jeroen van der Heijden: environmental manager. Mr. van der Heijden works at Rijkswaterstaat and is the key figure that connects governmental ambitions with practises and (local) stakeholders.

Date: February 27th 2013

Interview

De omlegging van de Zuid-Willemsvaart is een groot project. Er zijn dan ook diverse partijen bij betrokken. Om ruimtelijke kwaliteit te realiseren en om draagvlak te creëren is het belangrijk dat die partijen betrokken worden in het proces. Die andere partijen, zoals een gemeente of de provincie, kunnen bijdragen aan een betere inpassing van het kanaal in de omgeving, Rijkswaterstaat kan dat niet altijd (vanwege grondposities). Ruimtelijke kwaliteit is een begrip dat vanuit de regio wordt aangedragen bij de omlegging van de Zuid-Willemsvaart. De gekozen

variant van de omlegging wordt dan ook 'regiovariant' genoemd. In dit geval bestaat de regio uit een aantal regionale overheden, waaronder de provincie Noord-Brabant en gemeente 's-Hertogenbosch. Maar wie de regio is, hangt ook af van de projectfase. In elke fase zit namelijk een verschil in de mate waarin de regio c.q. belanghebbenden betrokken zijn; zo participeert men in de trajectnota/MER-fase via grootschalige informatieavonden en via formele bezwaarprocedures en zijn met name overheden betrokken in het project (Rijkswaterstaat, gemeente 's-Hertogenbosch, Waterschap Aa en Maas, provincie Noord-Brabant). Later in het project vinden kleinschalige gesprekken plaats met individuele burgers of belangengroepen en is er plaats voor aanpassingen op detailniveau. Het verschil in de mate van participatie komt dus voort uit het onderwerp waarover een beslissing gemaakt dient te worden. Zo gaat het in de Trajectnota/MER-fase met name over grootschalige beslissingen (zoals, is een nieuw tracé nodig? waar komt het kanaal te liggen?) terwijl hierna aanpassingen gedaan kunnen worden aan, bijvoorbeeld, bruggen en kruisende wegen (op een kleinere schaal dus). Het streven naar ruimtelijke kwaliteit is dan ook iets waar men de regio bij nodig heeft en focust zich op een gebiedsgerichte aanpak met functies die elkaar aanvullen en flexibiliteit in de aanpak hiervan.

In dit project is het vergroten van de ruimtelijke kwaliteit geïnitieerd door de regio, met in dit geval een grote rol van de gemeente 's-Hertogenbosch. Doordat de huidige Zuid-Willemsvaart door het centrum loopt, stonden de (ophaal)bruggen vaak open, waardoor meerdere keren per dag verkeerschaos ontstond in het centrum. De gemeente heeft dan ook aangedrongen op maatregelen om de leefbaarheid in de stad te vergroten en draagt hier ook financieel aan bij. Met alleen Rijksgeld was het project niet mogelijk geweest. De gemeente 's-Hertogenbosch heeft ook extra ambities die een directe relatie hebben met de omlegging van de Zuid-Willemsvaart, waaronder het aanleggen van een Kanaalpark (een zone van 60 meter in breedte met mogelijkheden voor natuur en recreatie). Een andere ontwikkeling die zich voordoet is het realiseren van woningbouw aan de noordzijde van de omlegging (ten noorden van Empel). Het kanaal kan een attractieve werking hebben en dus een positieve ontwikkeling op de woningbouw. Ook andere stukken grond rondom het kanaal worden in het plan (in samenwerking met de gemeente) meegenomen. Zo ontstaan er straks geen ongebruikte of braakliggende stukken grond, ook iets dat de ruimtelijke kwaliteit vergroot. De omlegging en vergroting van scheepsklasse valt dus samen met diverse andere ontwikkelingen in de directe omgeving van het kanaal. Deze voorbeelden geven dus aan dat er gestreefd wordt naar een win-win situatie tussen diverse partijen.

Omdat dit project zo groot is, speelt ook tijd een rol. In 1997 is de gewenste variant (nieuw tracé) al bepaald. Het heeft daarna nog een hele tijd geduurd tot de uitvoering plaatsvindt. Dat is ook te merken aan de aanpak. Waar dit project -en binnen RWS toentertijd gebruikelijk- in 1997 nog vaak gestuurd werd vanaf boven en er alleen (formele) inspraak was, worden nu steeds meer omgevingspartijen betrokken en bevat het project meer vormen van 'echte' participatie. Ondanks deze participatie van betrokkenen kan nooit iedereen volledig tevreden zijn: individuele belangen moeten worden afgewogen tegen algemene belangen. De belangen worden met name afgewogen in de fase voor het Tracébesluit, waarin effecten van varianten worden afgezet tegen elkaar door middel van een matrix met verschillende gewenste gewichten/waarden per effect. Burgers worden in deze fase met name geïnformeerd en hebben niet veel direct invloed (met uitzondering van formeel bezwaar op het Tracébesluit).

Er zijn niet veel documenten die op tracéniveau opgesteld zijn. De meeste plannen en daarop volgende besluiten zijn gemaakt op projectniveau (omlegging; 9 km). In principe wordt maar één onderwerp op tracéniveau beschreven: dat zijn de eisen die gesteld worden aan de Zuid-Willemsvaart om de vaart geschikt te maken voor klasse IV.
Een andere ontwikkeling die op meerdere gedeelten van het traject voortkomt (en ook vastgelegd in plan) is het aanbrengen van een natuurvriendelijke oever. Dit gebeurt nu niet alleen rond 's-Hertogenbosch, maar eerder bijvoorbeeld ook nabij Helmond en Schijndel.
De meeste plannen zijn op projectniveau opgesteld. Zo bestaat er een visie voor het uiterlijk van alle bruggen. Dit is gedaan met het oog op ruimtelijke kwaliteit en deze met de gemeente vooraf afstemmen, zodat het verkrijgen van vergunningen minder risicovol is. Een bouwvergunning voor een brug hoeft dan niet uitgebreid getoetst te worden door de commissie Welstand, maar door zich aan bepaalde ontwerpprincipes te houden kan met redelijke zekerheid worden gesteld dat de brug de toetsing door zal komen en men niet bij elke brug uitgebreid hoeft te verantwoorden waarom voor een bepaald ontwerp is gekozen. Hierdoor ontstaat een zekere vorm van uniformiteit in het project. Een ander plan, dat geldt voor alle Noord-Brabantse kanalen is de Ecovisie (plan met ecologische ambities).

In de toekomst kan een handreiking voor ruimtelijke kwaliteit handig zijn. Echter kan het ook belemmerend werken. De handreiking zal zo geschreven moeten worden dat flexibiliteit steeds projectspecifiek mogelijk blijft. Het implementeren van ruimtelijke kwaliteit kan op meerdere punten verschillen. De kwaliteit kan ook verbeterd worden door, bijvoorbeeld, niet-aantrekkelijke gbouwen in te passen op de zichlocatie tussen A2 en de omlegging van de Zuid-Willemsvaart. Het

kan projectmedewerkers helpen om een mogelijke methode of proces te beschrijven, waarbij men wel handvaten geeft, maar waarbij het proces niet volledig gesloten is.
Iets dat ook belangrijk is in de toekomst, en waarnaar dit project ook streeft, is het contact houden met belanghebbenden. Al in 1997 is het besluit voor de variant gemaakt. Het is belangrijk om ook in de periode daarna (in dit geval al bijna 16 jaar) nog steeds de actoren in het proces betrokken te laten zijn. Eventuele problemen en aanpassingen kunnen dan snel opgelost worden.
Als Rijkswaterstaat zich meer wil focussen op ruimtelijke kwaliteit, kan dat een punt van attentie zijn in de trajectnota/MER-fase. Nu focust die fase zich op het tracé gebaseerd op vooral technische eisen. Ondanks dat in deze fase vooral naar hoofdlijnen wordt gekeken, is het tracé wel bepalend voor de eventuele mogelijkheden voor ruimtelijke kwaliteit later in het proces.

Case study 5: Increasing the capacity of lock Eefde

Description of case study 5

Area: Overijssel (Eefde)

Project

Record of decision: 2010

Start realisation: 2010

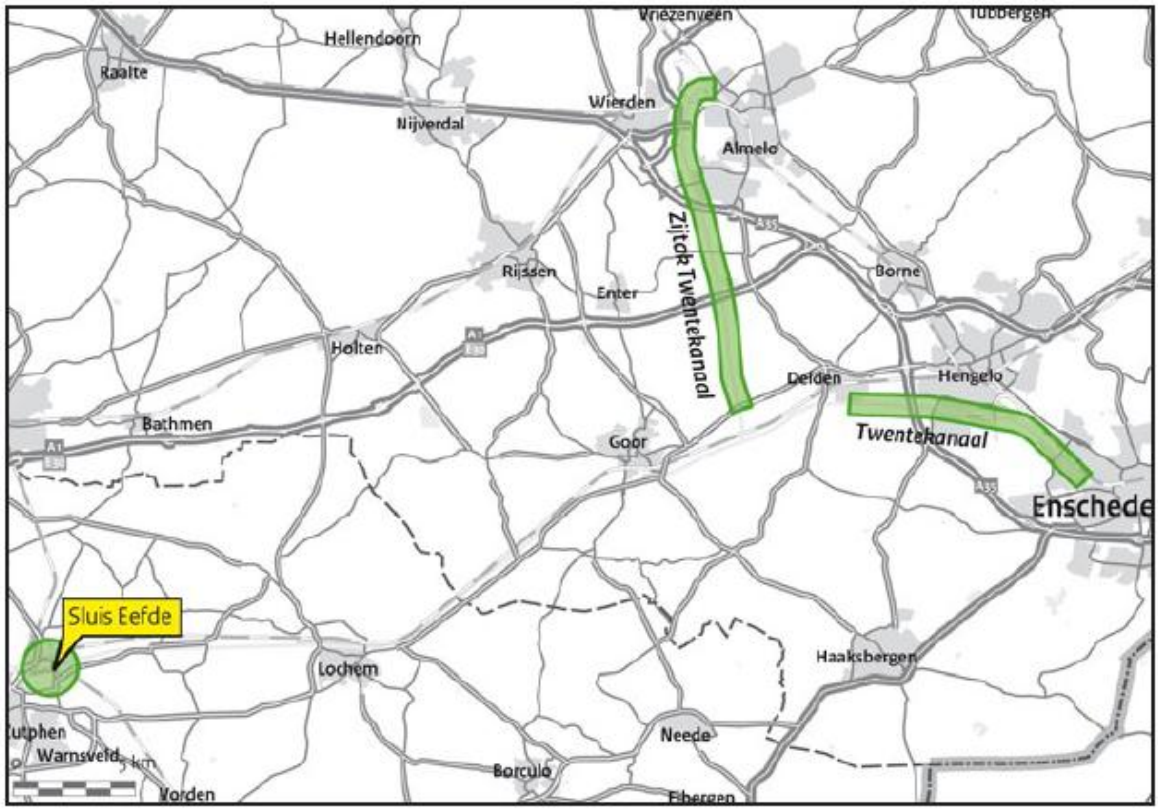
Completion: 2015

Short description of the project

Because of the long waiting times for ships to enter the lock, the capacity of the lock will be increased. This project also wideness the canal in order to be suitable for class Va ships (length: 95-110 metres; with: 11,4 metres; draught: 2,5-4,5 metres; height: 5,25-7 metres).

Short history and information

The total length of the Twente canal is 65 kilometres. The canal is located in the eastern part of the Netherlands, in the province of Gelderland and Overijssel. The case study focusses on the lock in Eefde and the upper part, the side-branch of the canal.



The location of Lock Eefde

The construction of the Twente canal has been started in 1930. The purpose of the canal was, on the one hand, to have a better supply route for raw materials used in the textile industries and, on the other hand, for a better and faster supply of coals from Limburg. The construction was finished in 1938.

Contemporary use of the canal is mainly for sand, gravel, salt, forage and containers. The route is also used by smaller ships for recreation purposes.

Lock Eefde

Interview result of case study 5

Status: RATIFIED

Present:

- Ruud Mes: Advisor nature, environment and landscape

Date: March 7th 2013

Interview

Aan de Twentekanalen worden nu en in de toekomst twee (grote) ingegrepen gedaan: het verruimen van de kanalen evenals de capaciteitsuitbreiding aan sluis Eefde. Het is belangrijk dat dit gebeurt, want de Twentekanalen vormen een schakel tussen de IJssel en de bedrijven en havens in Lochem en Twente. De verruiming van de kanalen zorgt ervoor dat de havens en bedrijven ook voor grotere (en meer) schepen bereikbaar worden. Er is ook achterstallig onderhoud aan damwanden. Hierdoor ontstaat hinder voor de scheepvaart, onder andere door het instellen van (noodzakelijke) eenrichtingsroutes. Daarnaast zijn de verbindingen tussen natuurgebieden aan weerzijde van de kanalen van onvoldoende kwaliteit. De infrastructuur rondom het kanaal zal behouden blijven.

Het andere (onderdeel van het) project, is de aanpassingen aan sluis Eefde. De reden voor deze aanpassing is de lange wachttijd voor schepen (>30 minuten; overschrijding norm). Een betrouwbare en veilige verkeersafwikkeling is hiermee niet geborgd (conform Nota Mobiliteit en BPRW 2010 – 2015). De transportkosten lopen door de lange reisduur op, terwijl het (voornamelijk container)vervoer een sterk groeiende sector is.

Vanwege de benadering van het kanaal als een corridor zijn de twee deelprojecten verruiming Twentekanaal en capaciteitsuitbreiding van sluis Eefde tot één project gecombineerd. Echter, de projecten worden daardoor afhankelijk van elkaar. Omdat dit onwenselijk is, is het mogelijk dat beide projectbeslissingen (MIRT 3) separaat voorbereid zullen worden. Dit betekent dat beide projecten ook gescheiden op de markt worden gezet.

Ruimtelijke kwaliteit zit in de omgevingsplannen van de provincie en de gemeenten en worden meegenomen in het project. Het beleid van andere overheden is wel geïnventariseerd, maar er is geen direct overleg gevoerd. Er zijn ook wensen en eisen vanuit de KES.

Specifiek voor sluis Eefde zal de ruimtelijke kwaliteit ook getoetst worden door Welstand. De opdrachtnemer (Grontmij) heeft ook als opdracht meegekregen om rekening te houden met

ruimtelijke kwaliteit. De focus hierin ligt op het behouden van de ruimtelijke kwaliteit. Voor sluis Eefde resulteert dit in een ambitiedocument, waarin onder andere is aangegeven dat de uitstraling van de oude heftorens niet belemmerd mag worden (er is daarom gekozen voor puntdeuren). Dit ambitiedocument is, in opdracht van Rijkswaterstaat, uitgewerkt door een architect. Het document is ook besproken met de gemeente Lochem en de Welstandscommissie. Naast het ambitiedocument Ruimtelijke Kwaliteit en Vormgeving is ook een cultuurhistorische verkenning opgesteld.
Op kanaalniveau is een notitie ruimtelijke kwaliteit en vormgeving opgesteld, die focust op het 'respecteren van bestaande landschappelijke structuren, patronen en ruimtelijke kenmerken' en het 'zoveel mogelijk behouden van de huidige situatie'. Eén van de focuspunten hiervan is het behouden van het open landschap. Een uitzondering hierop is vormen de viaducten. Deze zullen landschappelijk ingepast worden door middel van begroeiing langs de viaducten. De notitie is door Grontmij opgesteld in opdracht van Rijkswaterstaat. Ook in dit document focust het begrip ruimtelijke kwaliteit zich op het behoud hiervan. Daarnaast besteed de notitie aandacht aan het versterken van ecologische verbindingen (tussen Delden en Hengelo; en tussen Hengelo en Enschede). Dit is onderdeel van de EHS en vormt in dit project geen bijkomstigheid, maar wordt gezien als volwaardig doel. Recreatieve potentie wordt ondertekend, maar valt buiten het bereik van het project. Ook op kanaalniveau is er een cultuurhistorische verkenning opgesteld.

Om ruimtelijke kwaliteit te waarborgen, zal deze worden meegegeven als opdracht aan de aannemer. Daarnaast zal het ambitiedocument Ruimtelijke Kwaliteit en Vormgeving worden meegegeven als bijlage. Hoe de exacte implementatie van ruimtelijke kwaliteit vormgegeven zal worden is nog niet duidelijk, omdat de verruiming bij de verruiming van het kanaal nog officieel aan de planstudiefase moet worden begonnen. De capaciteitsuitbreiding van de sluis is nu in de voorbereidingsfase op de realisatie. Ook hier is er dus nog geen concrete vertaalslag gemaakt.

Droge projecten (wegen) hebben meestal een ambitiedocument. Voor natte projecten is het opstellen van een ambitiedocument niet standaard. Er is meer verschil tussen 'nat' en 'droog'. Dat komt doordat adviseurs vaak werken voor of natte dan wel droge projecten. Men denkt daardoor in een bepaalde richting, nat heeft veelal een andere projectopzet en projectdoel. Ruud Mes is binnen DON als adviseur bij zowel natte als droge projecten betrokken. Daarbij heeft hij een intern "Learning on the Job" programma gevolgd van een half jaar waarbij hij op de natte afdeling WSP gericht advies heeft gegeven. Hierbij kwamen manier van werken en wijze van advisering aan bod.

Binnenkort zullen vanuit de reorganisatie de droge en natte afdelingen worden herschikt waarbij de medewerkers worden “gemixt”.
Specialisten (bijvoorbeeld, hydrologen, ecologen, e.d.) maken vaak wel meerdere fases mee, maar omgevingsmanagers stromen vaak niet het hele project door. Dezelfde omgevingsmanager is betrokken bij de plan fase dan wel de realisatiefase, echter, zelden bij beiden.
Ruimtelijke kwaliteit gaat vaak gepaard met het denken in risico’s. Het is iets dat niet essentieel is – zoals asfalt op een weg – . Ruimtelijke kwaliteit wordt beschreven in het Ambitiedocument, vaak opgesteld door een ingenieursbureau of DLG. Het verwoordt de uitgangspunten en kaders van de inpassing van de weg in relatie tot zijn omgeving. Het Ambitiedocument geldt als basis voor het vervolgens op te stellen Vormgevings- en Inpassingsplan. Op basis van het Ambitiedocument moet duidelijk zijn welke inpassingsopgave tot de scope van een project wordt gerekend en welke eventuele inpassingsopgave in het kader van een Inpassingsovereenkomst dient te worden geregeld. Het Ambitiedocument beschrijft enerzijds welke opgaves en maatregelen in het kader van de inpassing voorzien zijn, geeft de status daarvan aan (onderdeel OTB of (nog) niet; en geeft anderzijds inhoudelijke aanwijzingen die voor de vormgeving van genoemde opgaves en maatregelen van belang zijn. Hierbij dient duidelijk afgebakend te zijn welke opgaves en maatregelen direct als gevolg van het project te nemen zijn en welke opgaves en maatregelen vanuit wensen van de omgeving komen. Het risico van het opnemen van wensen en beleid van derden binnen het ruimtelijk kader is dat het niet binnen de tijd of budget van het project past.

Ruimtelijke kwaliteit heeft wel degelijk aandacht binnen een project maar is altijd ondergeschikt aan het projectdoel. Daarnaast, als Rijkswaterstaat de scope van het project aanpast (bijvoorbeeld vanuit budgettaire overwegingen), valt ruimtelijke kwaliteit vaak daarbuiten en wordt het slechts uiterst sober meegenomen in het project. Dan wordt alleen de wettelijk voorgeschreven boswetcompensatie (herplant beplanting)_en eventueel het advies van de welstand gerealiseerd.
Een gebundeld kader kan een meerwaarde hebben. Indien met één volledig verhaal gebruikt, is het veel lastiger om onderwerpen uit het verhaal te laten dan wanneer men 10 verschillende kaders in acht moet nemen. Daarom heeft één kader waarschijnlijk een zwaarder gewicht in het gebruik dan meerdere verschillende kaders. De ruimtelijke kwaliteit kan ook verbeterd worden door plannen op elkaar af te stemmen. Zo kan in het landschapsplan – vanuit architectonisch oogpunt – vermeld staan dat elk jaar gesnoeid moet worden. Echter, op landelijk niveau is vanuit de prestatiecontracten Beheer en Onderhoud minder snoeien juist de trend. Plannen die elkaar tegenspreken leveren nooit extra kwaliteit op.

Case study 6: Transition from provincial management to national management

Description of case study 6

Area: Friesland & Groningen

Canal: Lemmer-Delfzijl

Short description of the project

Currently the canal is owned and maintained by the provinces of Friesland and Groningen. From July 1st 2013 the ownership of the canal is being transferred to the national government. Then, Rijkswaterstaat will manage and maintain the canal. Currently the canal is being upgraded towards class Va shipping (length 95-110 meter; width 11,4 meter; draught 2,5 – 4,5 meter; height 5,25 – 7 meter).

Short history and information

The total length of the canal is 118 kilometres. The water way exists out of three canals that are connected to each other: the Princes Margriet canal (65 kilometres), the van Starkenborgh canal (26,6 kilometres) and the Eems canal (26,4 kilometres). The canal is one of the major crossings through the Netherlands. The waterway is used by commercial shipping, connecting northern Germany with Amsterdam and Rotterdam. Besides that, it is also used for inland shipping and for large transports. But the waterway is also being attractive for recreational shipping.

Because the total waterway exists of three canals, it is constructed in various periods.

The princes Margriet canal is located in the Frisian part of the waterway. The canal has been constructed in the 1930s. The last parts of the canal are built in the years after WO II.

The Van Starkenborgh canal connects the Princess Margriet canal with the Eems canal. In 1938 the Van Starkenborgh canal has been opened by Queen Wilhelmina. The construction of the Eems canal took place between 1866 and 1876. It connects the Van Starkenborgh canal from Groningen with Delfzijl and further (North Sea).

Waterway Lemmer-Delfzijl

Until recently, the provinces of Friesland and Groningen owned and maintained the water way including the side branches. Currently the canal is moving to the national government (Rijkswaterstaat). The case study will not analyse a specific project but will elaborate on the governmental level transition of the canal. The focus will be on whether there are documents on provincial level which address spatial quality and how the concept is perceived in these policy-documents.

Interview result of case study 6

Status: RATIFIED

Present:

- Marijke Jansma: Coordinator Spatial Quality
- Jans Zwiers: Stakeholder Manager Lemmer-Delfzijl
- Pieter Noordstra: Senior Advisor Infrastructure
- Jan-Willem de Jager: Senior Advisor Spatial Quality and Regional Development
- Marlous Rosegaar: Student Social Geography (internship Rijkswaterstaat)

Date: February 21st 2013

Interview

Het kanaal wordt in de volksmond vaak het Prinses Margrietkanaal genoemd, maar in feite is dat onjuist. De formele naam voor het kanaal is 'hoofdvaarweg Lemmer-Delfzijl', waarvan het Prinses Margrietkanaal een onderdeel is. De totale vaarweg bestaat uit drie kanaalvakken: het Prinses Margrietkanaal (65 km), het Van Starkenborghkanaal (26,6 km) en het Eemskanaal (26,4 km). De totale lengte van de hoofdvaarweg Lemmer-Delfzijl is 118 km.

In het verleden zijn er diverse afspraken gemaakt tussen provincie en het Rijk. Sinds 1957 betaalt het Rijk een bijdrage voor de (onderhouds)kosten van het kanaal. In 1997 is besloten om te investeren in het kanaal door het geschikt te maken voor klasse Va schepen, vierlaags containervaart en beperkt tweebaksduwvaart. Het maatgevend schip is lang 110 m, breed 11,4 m en diep geladen 3,5 m. De vaste bruggen krijgen een hoogte van 9,1 m. De opdrachten tot verruiming werden verstrekt aan de provincies Fryslân en Groningen, waarbij het Directoraat Generaal Bereikbaarheid beleidsmatig verantwoordelijk is en waarbij Rijkswaterstaat Noord Nederland de subsidies verstrekte namens het rijk. Daarnaast doorsnijdt het kanaal twee provincies die in principe over hetzelfde kanaal beslissingen maken. Dat is een lastige constructie. In de toekomst zal het Rijk eigenaar van het kanaal worden en Rijkswaterstaat regie voeren, uiteraard in samenspraak met andere partijen. In de overgangsfase lopen er nog een aantal projecten die volgens reeds gemaakte afspraken uitgevoerd zullen worden. De overdracht was in eerste instantie gepland op 1 januari 2013, maar is uitgesteld tot 1 juli 2013. Het convenant spreekt echter van een overdracht uiterlijk op 1 januari 2014.

Ruimtelijke kwaliteit gaat in dit project wel een rol spelen. Het rekening houden met die ruimtelijke kwaliteit is ook verplicht via kaders. Momenteel ligt de focus echter voornamelijk op de overdracht en procesmatige kant van het verhaal en niet zozeer op ruimtelijke kwaliteit.

De provincie heeft in het verleden diverse documenten gepubliceerd die iets vertellen over de ruimtelijke kwaliteit van het kanaal. Zo is er het Masterplan Vormgeving Vaarweg Lemmer Delfzijl (2001) waarin de provincies Groningen en Friesland samen hebben gewerkt om tot een visie voor de hele vaarweg te komen. Dit plan behandeld de vormgeving, maar er zijn ook andere plannen opgesteld die meer vertellen over, bijvoorbeeld, recreatieve waarden (zie het Friese Meren Project). Dat het kanaal zo belangrijk is, komt doordat het de ruggengraat van zowel Friesland als Groningen is op het vlak van scheepvaart. Het kanaal doorsnijdt beide provincies, dus bij verplaatsingen komen mensen vaak het kanaal tegen. Daarnaast is het ook een trekpleister voor de pleziervaart.

Sinds kort (september 2011) is er per regionale dienst een Coördinator Ruimtelijke Kwaliteit aangesteld die de aandacht voor ruimtelijke kwaliteit binnen projecten (zowel weg- als waterprojecten) moet bewaken. De provincie Friesland beschikt over een kwaliteitsteam die vergelijkbaar werk doet. Ruimtelijke kwaliteit en gebiedsgericht werken is bij RWS nog volop in ontwikkeling ("R" binnen MIRT). In tegenstelling tot bijvoorbeeld de provincie heeft Rijkswaterstaat een iets andere insteek. De provincie is een omgevingspartij die diverse belangen in het totaalgebied moet afwegen, waaronder ook de kwaliteit van de omgeving. Rijkswaterstaat redeneert van oorsprong vanuit een lijn, van A naar B. Enerzijds ligt dat in de oorsprong van Rijkswaterstaat, anderzijds is Rijkswaterstaat vanwege de grondpositie altijd afhankelijk van andere partijen en heeft het maar beperkte mogelijkheden op eigen gronden.
Ondanks dat het kanaal formeel in handen komt van het Rijk, zal er sowieso overleg blijven bestaan tussen provincie en Rijkswaterstaat. Om de ruimtelijke kwaliteit op te waarderen, maar ook voor andere zaken, is het belangrijk om met de omgeving in gesprek te blijven. Rijkswaterstaat Dienst Noord-Nederland heeft een altijd een goede, interactieve overlegstructuur gehad en streeft daar ook altijd naar. Bij diverse projecten (waaronder de N31) zijn de gemeente en provincie ook de initiator voor het realiseren van ruimtelijke kwaliteit. De provincie zal ook eerder afgerekend worden op het niet behouden dan wel verbeteren van de kwaliteit van een gebied. De provincie heeft hiermee 'van nature' een focus op de interactie met de omgeving.

In de toekomst zal er op meerdere terreinen aandacht worden besteed aan ruimtelijke kwaliteit. Zo is een kwaliteit de inpassing van het landschap. Een andere kwaliteit is het kunnen redeneren vanuit een gebied en niet vanuit een lijn. Uiteindelijk is ruimtelijke kwaliteit dus de combinatie van gebruikswaarde, toekomstwaarden en belevingswaarde. De functie van het kanaal (in dit geval; scheepvaart) staat centraal, maar daarbij wordt rekening gehouden met andere functies die het kanaal kan vervullen. Over het algemeen blijkt dat een aanzienlijk deel van het budget voor een project besteed wordt aan leefbaarheid en ruimtelijke kwaliteit.
In praktijk is die waarde echter vaak beperkt tot een basiskwaliteit. In de ogen van een projectmanager extra (ruimtelijke) kwaliteit vaak tot budgetoverschrijdingen. Basiskwaliteit valt binnen het budget en is vanuit projectmanagement oogpunt dus veilig.
Er zit een verschil in de ruimtelijke kwaliteit van kunstwerken (bijvoorbeeld bruggen) en ruimtelijke kwaliteit als concept. Voor bouwwerken is men namelijk verplicht om een omgevingsvergunning aan te vragen, waarbij de Welstandscommissie een oordeel moet geven.

Daardoor moet er wel nagedacht worden over de externe invloed van bouwwerken aan de omgeving.

Omdat ruimtelijke kwaliteit vaak geen harde eis is, is het ook afhankelijk van het ambitieniveau. Een sterke leider (bijvoorbeeld gedeputeerde) kan zorgen voor het inbedden van ruimtelijke kwaliteit in het project. Het is belangrijk om in het proces de term ruimtelijke kwaliteit al vroeg te introduceren. Dat heeft twee oorzaken. Enerzijds is het een gedachtegang die al vroeg op gang moet komen, anderzijds wordt het dan meegenomen in het budget, waardoor er in een latere fase niet als 'te duur' beoordeeld kan worden. Mensen, waaronder ook medewerkers van Rijkswaterstaat, moeten aan het denken worden gezet over de ruimtelijke kwaliteit van een project.

Meer informatie over het kanaal kan gevonden worden bij:

- Atelier Friesland
- Via het kunstproject Woordenstroom (= 13 taalkunst projecten langs de vaarweg)
- In het boek Woekeren met Ruimte (auteur: Noud Köper)
- www.vaarweglemmerdelfzijl.nl

Case study 7: Maintaining spatial quality

Description of case study 7

Area: Utrecht and Zuid-Holland

Canal: Merwede canal, Lek canal and Amsterdam-Rhine canal

Short description of the case study

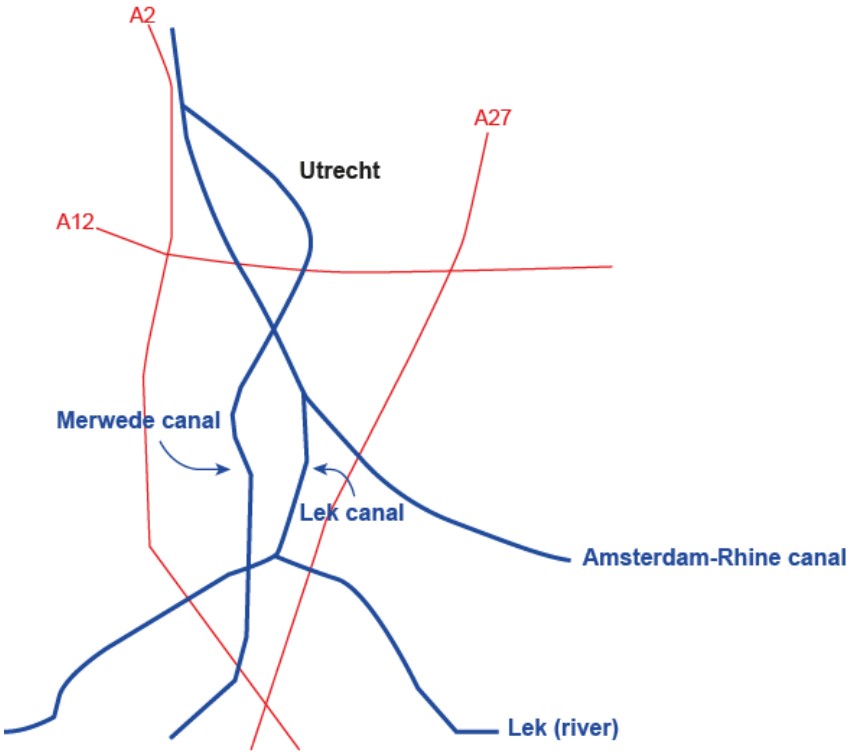
The case study will address the overall relation between ambition, implementation and maintaining spatial quality. The case study analysis discusses how the concept is used from design, to realisation and hereafter by researching possible problems along the process on several canals in the Netherlands. The case study does not aim to take a single project into account but focusses on long-term issues on three (connecting) canals.

Short history and information

Between Amsterdam and Utrecht there are three canals that are close located near each other: Merwede canal, Amsterdam-Rhine canal and Lek canal. These canals are interlinked with each other.

The Merwede canal has been opened in 1892. Partly it was an expansion of already existing canals (e.g. Keulse Vaart, dated 1825). Other parts (e.g. trajectory between Amsterdam and Utrecht) were completely new. Currently the Merwede canal is 35 kilometres long and is located in the provinces of Utrecht and Zuid-Holland. The canal is able to be used by ships of class IV (length 80 – 85 metres; with 9,5 metres; draught 2,5 metres; height 5,25 – 7 metres).

Due to insufficiency in shipping (modernisation, larger ships, and more traffic) the Amsterdam-Rhine canal was constructed which offered a bigger capacity than the Merwede canal. Some parts of the original trajectory of the Merwede canal were included into the new Amsterdam-Rhine canal. In that way the Amsterdam-Rhine canal is the follow up of the Merwede canal. The Amsterdam-Rhine canal has been constructed between 1933 and 1952. Due to WO II the construction was temporarily stopped. Already between 1961 and 1963 the canal was widened from almost 59 metres to 70 meters. Hereafter the canal has been widened more and currently is between 100 and 120 metres wide. The canal is 72 kilometres long and is able to be used by ships of class VIb (length 185 – 195 metres; with 22,8 metres; draught 2,5 – 4,5 metres; height 7,9 - 9,1 metres).



Connections of Amsterdam-Rhine canal, Merwede canal and Lek canal near Utrecht

The Lek canal is a small canal of less than 4. Basically the Lek canal is a side-branch of the Amsterdam-Rhine canal which connects the canal with the river Lek. The southern part is connected through the Princess-Beatrix locks which provide access to around 50.000 ships a year.

The Lek canal is located east of the Merwede canal. The canal is able to be used by ships of class Vb (length 172 – 185 metres; with 11,4 metres; draught 2,5 – 4,5 metres; height 9,1 metres).

The Princess Beatrix locks in the Lek canal

Amsterdam-Rhine canal (near Driemond)

Interview result of case study 7 (1)

Status: RATIFIED

Present:

- Frank Waarsenburg: advisor Beatrix locks (3rd spin)

Date: January 24th 2013

Het begrip ruimtelijke kwaliteit wordt op diverse manieren ingevuld. De invulling staat niet vast en is afhankelijk van het project. Als voorbeeld wordt het Lekkanaal in Nieuwegein genomen. Sommige gedeelten van het project bevinden zich in de zone van de Nieuw Hollandse Waterlinie. Uit een korte situatieschets komt het volgende naar voren:

|| Kanaal || Nieuw Hollandse Waterlinie || Bedrijventerrein ||

Doordat het kanaal verbreedt wordt, krimpt het gebied waartoe de Nieuw Hollandse Waterlinie (NHW) behoort. De ruimte die overblijft wordt door vertegenwoordigers van de NHW beoordeeld als te klein. Daardoor wordt de geringe zone die overblijft een probleem voor de status van werelderfgoed van de NHW (UNESCO) en moet er dus een oplossing gevonden worden. Een mogelijke oplossing hiervoor kan door flexibel met het ruimtegebruik van het bedrijventerrein om te gaan. Met andere woorden, het bedrijventerrein kan verkleind of verplaatst worden. Er zijn echter twee tegenwerkende krachten. De eerste is de visie van de gemeente die niet in één lijn ligt met de visie van Rijkswaterstaat c.q vertegenwoordigers van de NHW. De gemeente beredeneert vanuit financieel oogpunt, dat het voor hen onaantrekkelijk is om het bedrijventerrein te verkleinen of te verplaatsen, omdat het hen geld kost. Deze visie kan wel aangepast worden, maar dan zal er wel "iemand" een financiële vergoeding moeten betalen aan de gemeente om dit mogelijk te maken. Een tweede punt is dat de Heritage Impact Assessment (HIA) niet wettelijk verplicht is. Een HIA is een advies voor de beoordeling van de NHW waaraan geen gehoor gegeven hoeft te worden maar heeft wel grote gevolgen voor de aanvraag werelderfgoed. Rijkswaterstaat zet zich in om gezamenlijk met diverse omgevingspartijen de zone tussen het verbrede Lekkanaal en de geprojecteerde bebouwing van het bedrijventerrein optimaal en "UNESCO-proof" een goede NHW-kwaliteit te geven.

Een ander voorbeeld van hoe ruimtelijke kwaliteit gebruikt wordt is bij de A2 (Ouderijn – Holedrecht). Dit voorbeeld gaat voornamelijk uit van ruimtelijke kwaliteit als het inpassen van het object (snelweg) en het af laten nemen van hinder voor omliggende burgers en andere

stakeholders. In dit project is aan bewoners nabij Utrecht naar input gevraagd over het design/vormgeving/uitstraling van de geluidswal. Daarmee past de buitenkant van de snelweg (bewonerszijde)(wat bewoners zien) zich aan de omgeving aan.

Beide voorbeelden hebben dus een verschillend soort gebruik van het begrip ruimtelijke kwaliteit. Echter, het aanbrengen hiervan gaat gepaard met extra kosten. Soms zijn die er, soms ook niet. Ook al kost ruimtelijke kwaliteit geen extra financiële middelen (een geluidswal moet er toch komen), het peilen van de meningen kost wel tijd en daarmee toch ook geld.

Het aanbrengen kwaliteit en oog voor de omgeving wordt meestal geambieerd door Rijkswaterstaat zelf, maar ook gemeenten hebben veel macht in het toebrengen hiervan. De gemeente geeft immers toestemming om een ontwikkeling plaats te laten vinden door middel van het bestemmingsplan of (bouw-)vergunningen. Daarnaast bezit de gemeente ook grond, dus zijn zij ook een sterke partij in de gebiedsontwikkeling indien de gemeente de directe "buurman" is van het project van de RWS.
Het betrekken van externe partijen heeft ook positieve effecten uiteraard. Zo is de bomenrij naast het Lekkanaal vooral behandeld vanuit cultuur-historisch of esthetisch oogpunt, maar het blijkt ook een oriëntatieroute te zijn voor vleermuizen. Rijkswaterstaat is hierachter gekomen via de landelijke vleermuizenvereniging. Via het betrekken van deze en andere partijen, komt Rijkswaterstaat dus achter achterliggende belangen en wordt het begrip kwaliteit verruimd van cultuur-historisch esthetische kwaliteit naar ook ecologische kwaliteit. Aandacht voor elkaars belangen en doorvragen maakt onderdeel uit van Strategisch Omgevingsmanagement (afgekort: SOM). Met SOM worden alle (mogelijke) problemen van een project naar voren gehaald, eerder inzichtelijk gemaakt. Investeren aan het begin van een project is oogsten aan het einde van het project.

De ruimtelijke kwaliteit is in diverse stappen vastgelegd, ook al wordt het niet altijd bij de term ruimtelijke kwaliteit genoemd. Een project wordt echter gefinancierd op basis van het project, niet op basis van de omgeving. Daardoor kost ruimtelijke kwaliteit vaak extra geld. Aan de andere kant kan het wel een ambitie zijn die in de beginfase terug kan komen. Want wie wil nu geen ruimtelijke kwaliteit? Maar wat is ruimtelijke kwaliteit dan? Daar is in geen enkel plan een standaard antwoord op te gegeven.

Ruimtelijke kwaliteit is iets dat niet tastbaar/meetbaar is. Daardoor is het vaak moeilijk te realiseren/te concretiseren. Er heerst bij vele personen die bij Rijkswaterstaat werkzaam zijn een cultuur van bouwen. Men werkt hier om iets te realiseren, niet zozeer om alleen maar een visie op te stellen.
Om meer voortgang te krijgen in processen en om ruimtelijke kwaliteit beter toe te passen moet men creatiever zijn. Het is vaak moeilijk om buiten de gebaande paden te gaan, terwijl daar soms winst valt te behalen. Toch wordt het niet altijd gezien, want het is vermoeiend, tijdrovend en soms onmogelijk.

Samenvattend zijn tijd en geld en belangen belangrijke factoren die vaak ten grondslag liggen aan het succes of het falen van ruimtelijke kwaliteit. Ambities worden wel opgesteld, maar vaak niet c.q. kunnen niet altijd doorgevoerd worden in de praktijk, omdat daar ook tegenstrijdige belangen voor zijn, geen of te weinig geld voor is of de tijd niet aanwezig is om het gesprek aan te gaan. De begroting van een project vindt plaats door het ontwerp en tijdspad en niet door de omgeving. De vraag kan ook gesteld worden of Rijkswaterstaat bestaat voor het gebied of dat daar andere partijen voor zijn?

Interview result of case study 7 (2)

Present: Lisette van de Giesen: environmental operational manager canals

Date: January 24th 2013

Interview

Ruimtelijke kwaliteit op operationeel niveau heeft diverse uitdagingen. Een van de belangrijke kwaliteiten van het Amsterdam-Rijnkanaal en Lekkanaal is de bomenrij. Uiteraard blijft dit niet zo, want er kunnen ook veranderingen in plaatsvinden. De sterkste verandering is uiteraard de kap van de bomen. En juist dit moet op korte termijn gebeuren. De bomen (populieren) hebben o.a. Schorsbrand, dit is een besmettelijke schimmel waaraan de bomen uiteindelijk doodgaan, zwammen en zijn hol door de wilgenhoutrups. Zij veroorzaken daarmee een veiligheidsrisico voor de mensen die onder de bomen doorlopen alsmede de schepen die eronderdoor of erlangs varen. De bomen moeten dus worden gekapt, waarmee een herplantingsplicht gepaard gaat. Als de herplanting niet mogelijk is ter plekke, kan de compensatie van de herplant ook ergens anders plaatsvinden. In dit geval wordt daarom samengewerkt met Natuurmonumenten. Maar, ook andere partijen, (bijvoorbeeld gemeenten) zijn welkom om bomen te laten planten. Het moet dan

wel gaan om openbaar terrein, of een bosperceel/plantsoen en niet om 1 boom in de tuin. Bij de herplant van bomen wordt gebruik gemaakt van diverse soorten o.a. 4 soorten iepen, es, zomereik en zomerlinde. Met de keuze van diverse soorten bomen wordt de monocultuur doorbroken en gebruik gemaakt van diverse soorten die resistent zijn voor ziekten. Deels heeft dit te maken met ruimtelijke kwaliteit, maar ook veiligheid speelt een grote rol. De boom moet namelijk relatief smal om bijvoorbeeld in de toekomst te voorkomen dat de bomen radarbeelden verstoren door een brede kruin. Daarnaast worden er 4 soorten iepen en andere soorten bomen geplant, zodat grootschalige kap niet meer noodzakelijk is (de kans dat alle 4 de soorten iepen en of andere soorten bomen in hetzelfde tijdsbestek gekapt moeten worden vanwege hun staat is klein).
Ruimtelijke kwaliteit heeft ook te maken met veiligheid. Ondanks het een belangrijk landschapselement is (zowel cultuurhistorisch als esthetisch) moet het wel veilig zijn. Omdat iets ruimtelijke kwaliteit heeft kan het niet zo zijn dat het daarmee 100% gevrijwaard is van alles. In dit geval speelt veiligheid een grot rol. Vanwege de markante vorm van de bomen kan de radarpost de overhangende takken van de bomen in sommige gevallen niet meer onderscheiden van schepen. Dit heeft vorig jaar ook tot een bijna-botsing geleid.

Bomen langs de kanalen zijn beeldbepalend. De bomenrij staat aangemerkt in het landschapsplan als ruimtelijke kwaliteit. Dat gebeurt door experts, in dit geval een landschapsarchitect. Deze kwaliteit wordt ook vastgelegd in het contract, waarbij bepaald wordt welke boom gekapt wordt en wordt vastgesteld door de aannemer of een bomenexpert.
Naast het esthetische en de ruimtelijke kwaliteit is een ander belangrijk aspect/functie van bomen dat de bomenrij langs het kanaal als coördinatiepunt voor de scheepvaart dient en de windvang voor de scheepvaart beperkt.

Ruimtelijke kwaliteit kan versterkt worden door samen te werken met externe partijen en daarmee ook op één lijn te zitten. Een gewenste oplossing vanuit Rijkswaterstaat is om de bomen verder van het kanaal af te plaatsen, zodat deze in de toekomst niet meer over het kanaal heen zullen hangen. Echter, dan krijgt men te maken met grondeigenaren, omdat Rijkswaterstaat beperkte grond bezit. Vroeger was de wetgeving daartoe ook meer toereikend; er was een bebouwingsvrije zone van 30 meter. Tegenwoordig is die er niet meer met als resultaat dat bedrijven gebouwen kunnen plaatsten tot op de rand van hun perceel (zie Amsterdam-Rijnkanaal Utrecht). Ook de volgende bomenrij zal dus relatief dicht bij het kanaal komen te staan wat niet bevorderend werkt voor de toekomstwaarde (zowel niet voor de implementatie als het beheer).